SHE SHELLS

The human relationship with seashells explored in textiles

A Thesis

Presented to the Faculty

Of Thomas Jefferson University

In Partial Fulfillment of the Requirements for the Degree of

Master of Science in Textile Design

By

Stephanie Tomey

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**Philadelphia University +
Thomas Jefferson University**

HOME OF SIDNEY KIMMEL MEDICAL COLLEGE

Textile Design Master's Thesis Approval Form

Thesis Title: SHE SHELLS: The human relationship with seashells explored in

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Name: Read and Approved By: (Signature)

 Meghan Kelley
Thesis Advisor

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ABSTRACT

This textiles collection, titled *She Shells*, explores a shell's connection to the human condition to create dimensional and sculptural fabrics for high-fashion clothing designs. A group of seven female archetypes were conceived to represent experiences of fertility, sexuality, pursuit, imagination, space, death, and the afterlife. The *She Shells* are called *the Creator*, *the Lover*, *the Seeker*, *the Enchanter*, *the Builder*, *the Reaper*, and *the Transcender*. Each theme is discussed through examples of seashells found in art history, spirituality, and mythology during the Medieval, Renaissance, and Early Modern periods in Europe and highly influenced by Antiquity. The archetypes were used as tools to conceptualize each high-fashion-inspired piece which subsequently informed the design and construction of the textiles. There are three-dimensional aspects to each design achieved with a variety of materials and techniques such as elastic, PVC, Fosshape®, wire, monofilament, leno, felting, cutting, and applied heat. The textiles are brought together through their cohesive color palette, which uses whites, creams, ballerina pinks, fleshy pinks, muted eggplant and orchid purples, earthy browns, and silver. The colors connect the designs to humanity, the natural world, and the intangible realm. This soft and elegant collection evokes senses of the earth, where shells are made, and the "heavens" which befit their unimaginable beauty. Throughout human history, people have identified themselves in seashells, establishing the curious object with value, mystery, and a timeless appeal. This thesis reviews the fascinating qualities of a seashell which echo humanity's experiences, impact the greater human world and inspired the design of the *She Shells* textile collection.

This thesis is dedicated to my father, from whom I inherited a love of the ocean, and to my late grandfather, who has provided me with countless blessings – most of all our family beach house, *Pride and Joy*.

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CHAPTER ONE: INTRODUCTION

Seashells are one of nature's most magnificent formations. Shells have earned their value as treasures from more than just their beauty. They function as tools, currency, and adornment, but most impressively, they impact the human mind and one's ability to look both inward and outward. Highly appealing to the human senses, shells provide sensorial experiences that inspire the mind artistically, philosophically, and theologically. Seashells don't only incite connections between human and shell, but they also encourage relationships between people socially, commercially, politically, and even sexually. These marvelous ocean objects have the capacity to profoundly influence human history, which only reinforces their value, versatility, and timelessness.
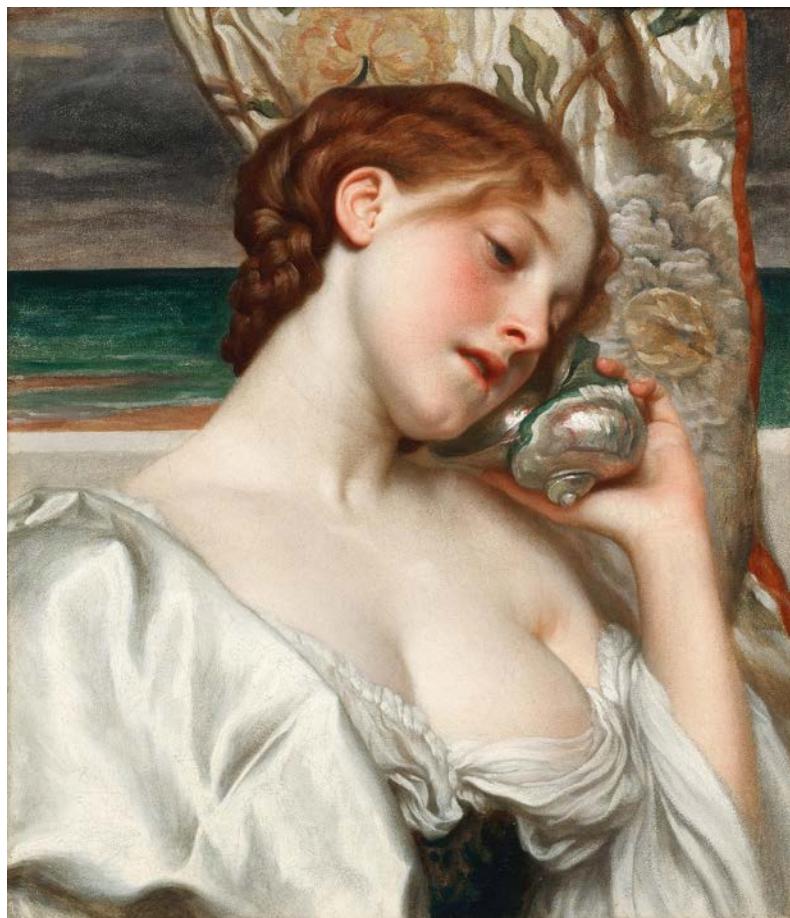
Figure 1.1 Sea Echoes, Lord Fredric Leighton, 1860s

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Seashells are universally recognized. They appear consistently in cultures across the globe and throughout history, and covering all of them would have been too great a task for this project. Hence, through the *She Shells* textile collection, this thesis examines several of the many ways in which shells have developed significance and symbolism, particularly during the Renaissance, the Baroque, and the Age of Enlightenment. The beginning of colonialism introduced new and "exotic" plants and animals to Europe. A growing interest in seashells led to the establishment of a new branch of study, which was later named Conchology, or the study of mollusks. Before Conchology took root, Europeans used seashells primarily as symbols for religious and mythological themes. However, the desire to understand their curious nature from a scientific perspective opened more doors for their application in the arts.

*Figure 1.2 Still Life of Shells and Coral, Jacques Linard, 1640,
Musée des beaux-arts de Montréal, Montréal*

***She Shells'* Origins**

This topic grew out of two specific elements of the designer's upbringing. First, in 1979, the designer's paternal grandfather purchased a beach house in Connecticut (fig. 1.3). Located between the open water and an isolated marsh, the house provides direct access to explore the ocean and its treasures. Having been in the Tomey family for nearly five decades, the house has become a space where the family can connect with nature, with each other, and with their late grandparents. The personal significance of this place, combined with its extraordinary location, had a profound impact on the designer, igniting her love for seashells.

Figure 1.3 Tomey Family Beach House, Connecticut

The second was spending time around the ocean with her marine biologist father. Family activities and vacations revolved heavily around the ocean and wildlife. Based in Boston, Massachusetts, and on regular trips to Cape Ann, Martha's Vineyard, and Florida, her family spent a great deal of time delving into New England coastal culture and venturing into the Everglades, where her father spent

the first year of his career. Despite having many formative and significant life experiences related to the sea that have solidified a fondness for seashells, this thesis adopts a more universal perspective on the human experience in relation to seashells, drawing on these experiences for its concept and inspiration.

The project began by following the lifespan of the seashell, from its conception as an egg, to its death, transition into a home to organisms, and its eventual collection by humans. The next phase of the concept was rooted in cultural symbolism worldwide, which quickly led to the seashell's representation of the three stages of life: creation, death, and the afterlife. As research narrowed in on Early Modern Europe, the stages began to break down into separate ideas and concepts, while the concepts of creation, death, and the afterlife remained. Early design ideas surrounding these concepts provided a basis for the fashion sketches and the weaving techniques the designer wished to incorporate into her collection, which informed much of the design of the fabrics. After exploring these techniques, some were discarded, and new ideas emerged alongside the developments in the concept research. Once most of the research was done, the separate themes the designer decided to follow were clear, and the end-use designs and fabrics were established. The designer's background in costume design, theatre, and storytelling encouraged her to personify the themes to effectively relate the narrative of seashells' symbolism and their significance to human history.

The *She Shells* Collection

Seven female archetypes, the "She Shells", were conceived to represent a group of life experiences that can be reflected in shells. As part of their conception, these archetypes are represented by individual high-fashion looks intended to be produced with woven fabrics from the *She Shells* textile collection. The fashion designs were highly influenced by Schiaparelli, Jean Paul Gautier, and Khaite

fashion brands as well as other designers such as Ashi Studio, Christopher John Rogers, Giambattista Valli, and Andrea Damo. Khaite offers minimalist and ethereal shapes and textures, while Jean Paul Gaultier brings a strong, sexual, and edgy look to the designs. Schiaparelli's surrealist perspective inspires the *She Shells'* magical world, fantasy, and sophisticated elegance. Each fashion design consists of one or two textiles inspired by their respective human themes, using imagery based on the shell's characteristics that influence their connection to the theme.

Figure 1.4 Left to Right: Schiaparelli Spring Couture 2025 Look 3; Jean Paul Gaultier Spring Couture 2020 Look 49; Khaite Spring RTW 2025 Look 35

An essential aspect of the development of this collection and its construction is the many techniques used to give the fabric dimensionality. Therefore, the garments' silhouettes were designed before the textiles were conceived to inform each fabric's structure and shape. The three-dimensional features of these textiles are fundamental to capturing the essence of seashells, as is their shapes that make them so magnificent. *She Shells* celebrates the majestic forms of seashells, their materiality, and natural origins, and is intended to be sculptural, ethereal, earthy, and feminine. Seashells are liminal objects, existing between life and death and

originating from both the earth and the heavens. The juxtapositions of hard and soft, rough and smooth, matte and iridescent, and dense and airy speak to this terrestrial and celestial threshold.

The chapters of this thesis discuss how seashells have connected to each archetype, providing examples from the arts, mythology, and religion. This part is followed by a description of how each theme inspired the textile design and woven construction. The second chapter, *the Creator*, discusses the seashell's relationship to Mother Nature, fertility, and the womb. *The Lover*, Chapter Three, reviews ways in which shells have been used as symbols of sexuality and lust. The many motivations behind shell collecting and its historical impacts are examined in Chapter Four, *the Seeker*. Chapter Five, *the Enchanter*, follows seashells in relation to imagination through their association with mermaids and mythical creatures. *The Builder* representing the importance of seashells to architecture and design is discussed in Chapter Six. Instances in which shells are linked to death and danger are covered in Chapter Seven, *the Reaper.* Finally, in Chapter Eight, *the Transcender* reflects on the spirituality of seashells and their representation of life after death.

Seven concept boards were made, representing each archetype of the collection (fig. 1.4). Only four images for each archetype were chosen from the dozens of inspiration visuals collected to help the designer interpret the concept. It was decided that working with the Surface Imaging Department at Thomas Jefferson University to print these images onto sandpaper digitally was the best idea for communicating the essence of the collection. Ultimately, the sandpaper available to consumers was not effective enough. Therefore, the designer created her own by coating Masonite boards with glue, layering them with sand, and spraying them with an adhesive once the glue had dried for added security. The sand speaks to the beaches where shells are found. It brings an earthly sense to the boards with bits of

glittering minerals, which hint at the magic of the sea and its shells. Because the chosen images often communicate the whimsicality of seashells, the sand works to ground them, as if they're emerging from the earth.

Figure 1.5 She Shells concept boards

The color palette also evoked organic, fantastic, and humanistic impressions. It is composed of shades of white (Heavenly Pearl, Cosmic Cream), which speak to the shell's celestial and divine inception, as well as soft pinks and purples (Slipper Shell Pink, Sea Star Violet, Tyrian Purple), depicting its feminine nature. The palette also includes earthy neutrals (Bone Grey, Soft Sand, Driftwood, Abalone Silver) derived from their earthen roots, and finally plush bodily hues (Tidal Red, Sea Rose) suggestive of the seashell's humanity, flesh, and blood. The *She Shells* color board (fig. 1.5) tells the color story using real seashells from the designer's personal collection, many of which come from her family's beach house. The non-seashell materials add iridescence to the color palette, allowing the board to reflect the contrasting matte and lustrous surfaces found in both seashells and the *She*

Shells collection.

Figure 1.6 She Shells color board

In the book *The Persistence of Memory*, Philip Kuberski describes seashells as "living metaphor[s] able to move from the notional realm of imagination to the hard and durable realm of organic form" (86). As this collection uses visual and textural qualities to demonstrate the fluidity and versatility of seashells, history too shows their emblematic adaptability. From Christianity's allegorical use of scallops and pearls to the architectural applications of wentletraps (a long, narrow, univalve shell prized for its intricate structure), shells speak to the abstract, fantasy, and memory while playing essential roles in functionality, engineering, and design. Their power reaches inside the soul and outside the mind, influencing the workings of both the human world and the natural, making them compelling sources of inspiration for the woven textile collection at the center of this thesis.

CHAPTER TWO: THE CREATOR

Overview

Seashells are often linked to the idea of creation as symbols of life and fertility due to their resemblance to reproductive organs. For example, the cowrie shell's shape is reminiscent of both female genitalia and the bump of a pregnant belly. Creation stories of both the earth and mythical gods and creatures often include seashells. Aphrodite-Venus, the sea-born goddess of love and beauty, is traditionally depicted at her conception emerging from a scallop shell. The scallop shell has a shape so captivating that it appears in the arts and design more than other shell motifs. The seashell's continual use in the decorative arts also represents its ability to inspire human creativity and innovation. *The Creator* of the *She Shells* collection, symbolic of Mother Nature and her cosmic womb, is a dress made of textiles inspired by scallop shells, which have long been employed by designers in their creations and as symbols of fertility.

Shells and Creation

The oldest known jewelry in the world is a set of shell beads found in a cave in Morocco, dated by archaeologists to be approximately 100,000-125,000 years old (Scales 83). Throughout history, shells have been an integral part of the human world. The timeless appeal and versatility of seashells demonstrate their importance to nurturing human imagination, thought, and creativity. There is an innate reaction to shells that enliven the mind into creating, as French philosopher Gaston Bachelard pointed out, "an empty shell, like an empty nest, invites us to fill it with our thoughts and dreams" (cited in Grootenboer 104). The mystery of a shell's chamber, shape, and iridescence stimulates the mind to simmer with questions that eventually boil over into beliefs and ideas. Their shape lends them to use as bowls and cups, and their surfaces evoke similarities to polished stones, gems, and ceramics. Interestingly, the mollusk animal forms its shell in a similar

spiraling build-up that ancient people used to make coil pots (Scales 51). Shells have long inspired people to create, whether in functional or artistic forms, such as cups, musical instruments, jewelry, or decorative motifs. "Human ingenuity might be able to create new forms from shells, but it was unable to re-create the shell itself", encouraging people to be more innovative and creative (*Conchophilia*, 150).

Figure 2.1 Oyster and a Pearl, Jacques Callot, c. 1592-1635, The National Gallery of Art, Washington D.C.

The concept of Creation inspired by seashells has not only manifested in the decorative arts and design, but also as a symbol of life. The ocean (water element), a symbol of creation, life, or rebirth, can be regarded as a "cosmic womb" or the "giver of life". Links between the womb, the shell, and the ocean can be attributed to fertility, Mother Nature, and the source of life. Water is a central factor in most creation stories, if not the central focus, and it can be said that Mother Earth herself created seashells from her ocean womb. The form and function of a shell shares similarities with the womb, as both areas of conception and containers

that protect soft and precious bodies. This link is mentioned in 79 AD by Pliny the Elder when describing the origins of pearls, the animal "opens its shell, and so receives a kind of dew, by means of which it becomes impregnated; and that at length it gives birth, after many struggles, to the burden of its shell, in the shape of pearls" (Pliny the Elder, *Naturalis Historia* 9.54). This remained Europe's primary belief on pearl creation until the mid-sixteenth century, lasting in some places into the 1680s (Smeesters 458).

Figure 2.2 Shell Fragment, 16th century, The Metropolitan Museum of Art, New York

In an early modern German translation of the Latin encyclopedia *Reductorium morale* from the fourteenth century, medieval Benedictine monk Petrus Berchorius used the term "*PaerlinMutter*" to characterize mollusks, which literally translates to "pearl mother". He writes that the pearl mother "moves to the shore at night, opens up and is fed and impregnated by heavenly dew [and] conceives and gives birth without intercourse and in its flesh a pearl" (quoted in *Arts and Ocean Objects*

91). Petrus Berchorius uses this as an allegory for the conception of Christ, when Mary becomes pregnant without intercourse by a heavenly force, i.e., God or the Holy Spirit (*Arts and Ocean Objects* 91). Medieval Christians used the seashell as a symbol for the mother of God and her womb, which contains and protects the valuable pearl, a symbol of Jesus Christ himself. The seashell material "Mother-of-Pearl", also known as nacre, clearly refers to these interpretations and beliefs.

Figure 2.3 Brera Madonna, Piero della Francesca, c. 1472

In Piero della Francesca's *Brera Madonna* (c. 1472) (fig. 2.3), a scallop shell shapes the arch of a niche directly centered over Mary's head. Hanging from the scallop is an egg, another symbol of life, and shell container. The egg may also be

a representation of a pearl, "a classic symbol of incorruptible beauty" (Cattaneo-Vietti 73). The child Christ lies across Mary's lap, taking center stage as the only horizontal and nude figure and framed by his mother's royal blue robe. Here, the scallop shell and "pearl" work as a clever insinuation of the relationship of the Virgin Mother and Christ to the shell and pearl. Also, working as an architectural frame distinguishes the subjects' importance. The arch draws attention to the painting's central focus, while hanging over their heads as a symbol of the sky and heavens. The perfect symmetry and fanning gestures of the scallop shell have made it a popular framing device or focal point in architecture and compositional design, while sometimes also carrying additional symbolism.

Figure 2.4 The Birth of Venus, Sandro Botticelli, c. 1485, The Uffizi, Florence

Today, people are most familiar with seashells as symbols of creation and fertility in depictions of the birth of Aphrodite-Venus. Her creation story has many versions, some that describe a shell or seafoam, but the general sentiment is that she came from the sea near Cythera. Seashells often accompany the goddess of love and beauty because they themselves are beautiful and derived from the sea. Sandro

Botticelli's *The Birth of Venus* (1485) (fig. 2.4) is the most well-known artwork that includes a seashell, identifiably a scallop. The earliest known association of the scallop with the birth of Aphrodite-Venus appears on a terracotta Hellenistic vase from around 400 BCE found north of the Black Sea. Another interpretation appears on a burial urn excavated at Olynthus, Greece (fig. 2.5), from around the same time. It shows a woman with white skin emerging from behind a white scallop, framed by the figures of Hermes, Poseidon (god of the sea), and her son Eros-Cupid, all in red (Cox 35-37). Here, the scallop shell is used as a device of creation, as if to be born out of a womb, similar to how seashells are referred to by Pliny the Elder and later by Petrus Berchorius.
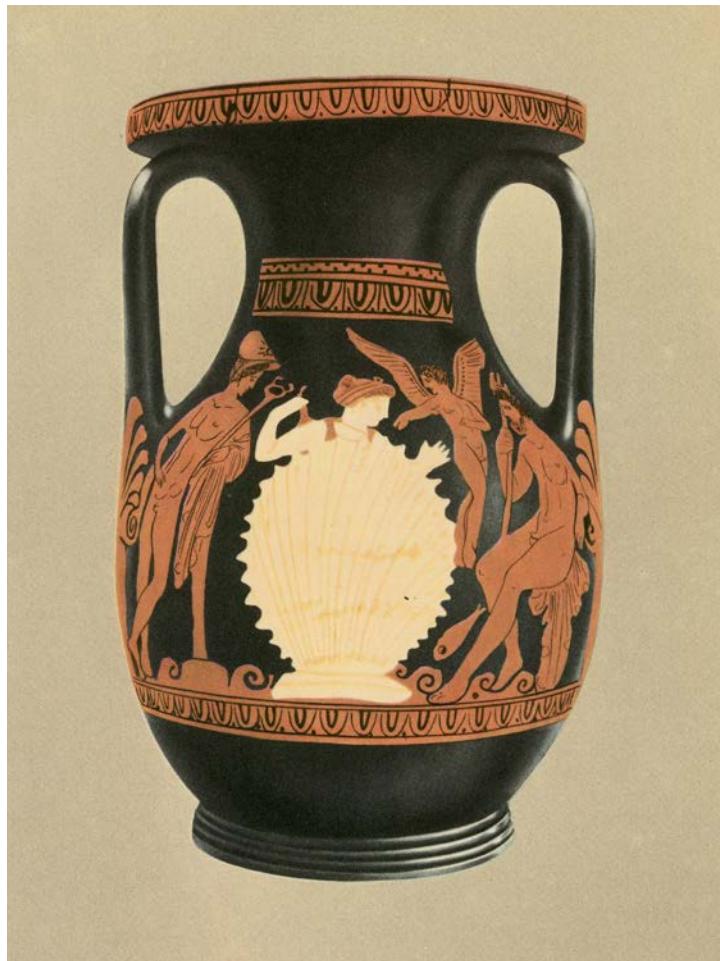
Figure 2.5 Burial Urn: Olynthus, Greece, reconstructed from illustration in "Excavations at Olynthus," David M. Robinson, 1933

*Figure 2.6 The Birth of Aphrodite: Greek terracotta,
Musée du Louvre, Paris*

The human appeal for seashells is made evident by the transcultural and transtemporal implementation of them, most often as jewelry. The scallop shell alone has inspired artists and designers for generations due to its extraordinary symmetry and graceful figure. It stands as a motif capable of being worked into any design, either as a central starting point or "cherry-on-top" finisher. The shell, both during Antiquity and in the modern world, has been used as a symbol of fertility and the beauty of Mother Nature's creations, while medieval Christians reinterpreted this as a symbol of Saint Mary, mother of God.
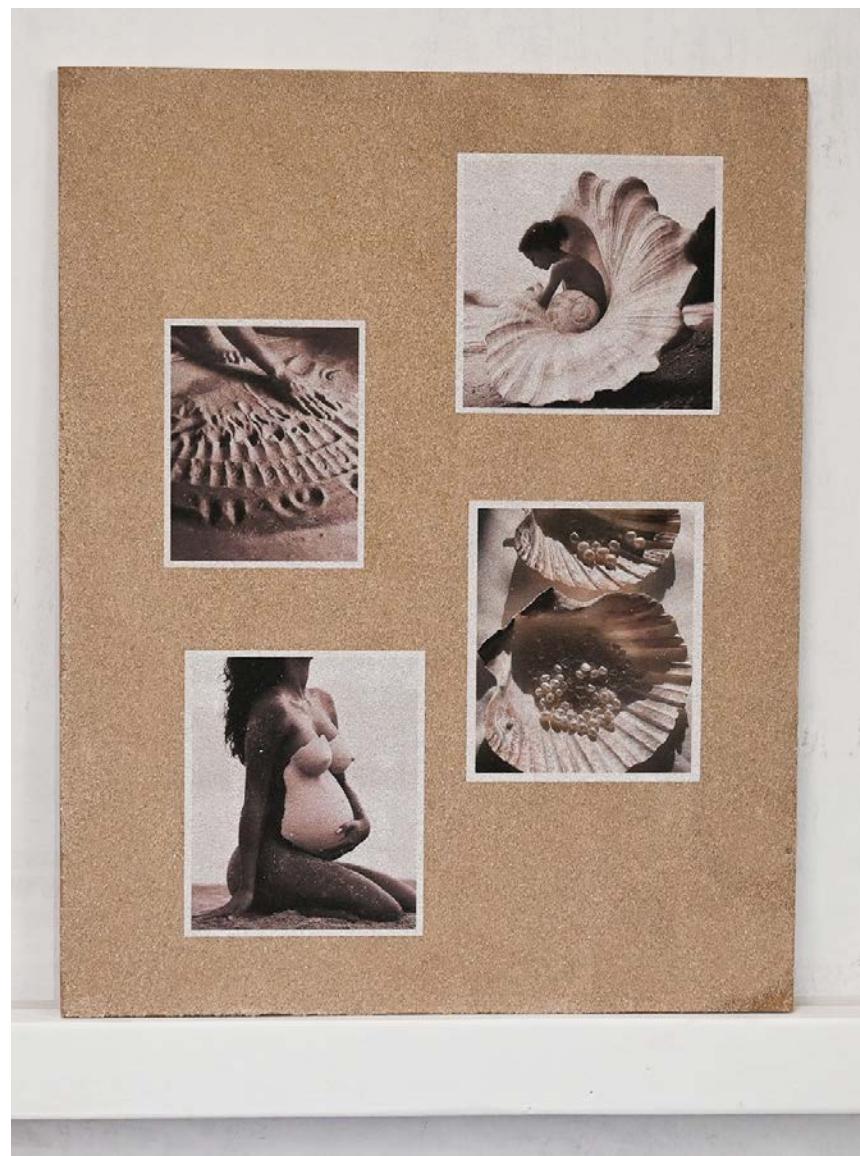
Figure 2.7 Concept board for the Creator

The Creator

The Creator archetype of *She Shells* is the ultimate mother and giver of life. She is nurturing and protective. She is love, grace, and warmth. The fashion design features a simple A-line sheath with a tall, gathered hem along its skirt that cascades outward, accentuating the fullness. The dress is feminine in its colors and flattering, graceful figure. It's warm in its thick fabric, natural in its earthen texture, nurturing in its encompassing shape, and unconditional in its simplicity. The colors of Slipper Shell Pink, Sea Star Violet, and Tyrian Purple were chosen for the design

to reflect the soft, sweet, and regal woman that is *the Creator*. The inspiration for the overall feel of the dress came from photographs of scallops, pregnant women on the beach, and images of children curled up inside shells (both AI-generated and sculpted). The design of the dress takes inspiration from Christopher John Roger's Pre-Fall 2024 dresses and loosely from Giambattista Valli's Spring Couture collections from 2024 and 2025. *The Creator* is comprised of two textile designs, one which makes up the body of the dress, called *Mother*, and the other which acts as the gathered hem, called *Scallop*.

Figure 2.8 Fashion design for the Creator

Following the central idea of the clothing designs informing the design of the fabric, *Scallop* was constructed to take the shape of pleat-like gathers on its own with no tailoring or manipulation necessary. The choice of pleat-like gathers is an interpretation of the ribs of the scallop, hence its title. This was initially attempted with gathering techniques for handweaving on the dobby loom. Simultaneously, a repeat intended for a jacquard design was rendered from a photo of a particular scallop from the designer's collection. As the jacquard design developed further, it became clear that the gathered effect of the fabric could be much more successful as a jacquard, and the handwoven idea was abandoned.
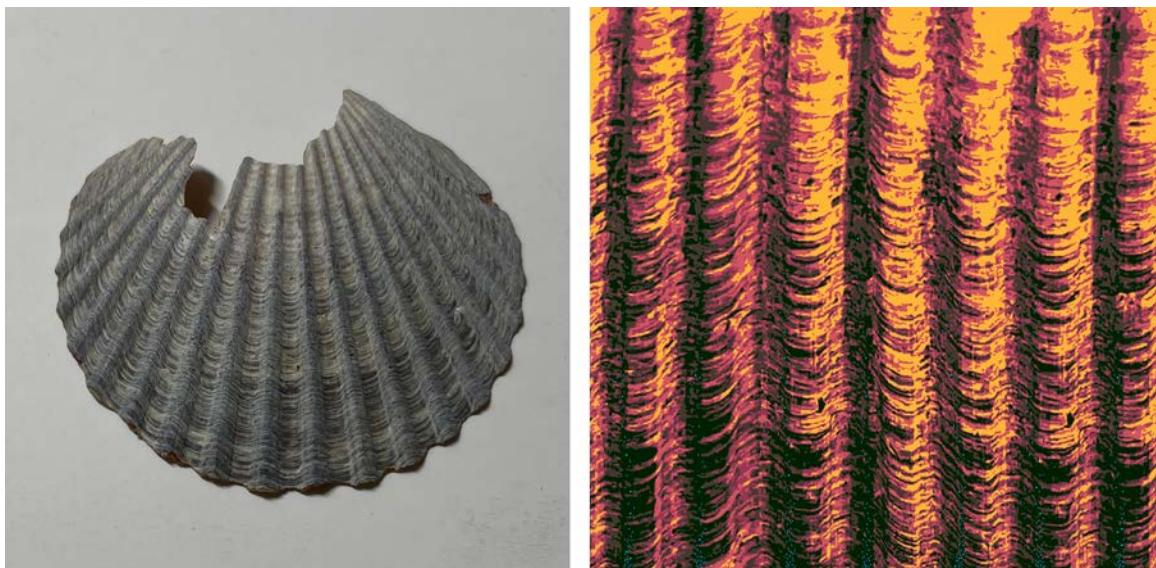
Figure 2.9 Photo of the shell used for the repeat and the design file for Scallop

The scallop shell used in the jacquard had interesting hair-thin markings across its ribs, which accentuated the up-and-down rhythm on its surface. A photo of this shell was stretched out to a 14-by-14-inch image so that the ribs ran parallel to each other rather than in its natural fan shape (fig. 2.9). The image was reduced to five colors and adjusted to repeat horizontally, but not vertically. This ultimately became the surface design of *Scallop*. A tri-pick construction was chosen to preserve the value shifts of the shell pattern within the textile. This was achieved

using light-, medium-, and dark-colored yarns on three weft systems (weft layers),
one for each yarn color. The hair-thin markings helped blend and stagger the
colors, creating an illusion of three-dimensionality. The weave structures of the
design were planned so that Selector One (the lightest value yarn) floated on top
in the lightest design areas. Selectors refer to the specific weft yarn's placement
in the design. Filling-faced satin structures using the mid-value yarn and mixtures
of it with the light or dark yarns made up the three medium-colored design areas.
A diamond twill was assigned to the darkest areas, using the dark yarn. The dark
areas ultimately receded in between the gathers, leaving sporadic moments of
geometric surface interest in the highly organic design, referencing both the
geometric fascination of the scallops and the often overlooked details on their
surfaces. Eventually, the design was reduced to four colors for more effective color
mixing.

Figure 2.10 Photo of Scallop, unwashed

The results from wash trials showed that the dark yarn, which was polyester from the studio, shrunk with heat, creating a recession in the dark areas, while the medium and light yarns were less affected. Because the light yarn floated on the face in the light areas, the yarn sprang away from the surface after washing, adding once again to the dimensional interest. From this, the idea of implementing gathers into this jacquard emerged. The incorporation of elastic in the construction could drastically enhance the fabric's dimensionality. Moreover, if the elastic was concentrated at the bottom of the design, gradually decreasing toward the top, there was more draw-in where there was more elastic, causing a fanned shape that mimics a scallop shell. The elastic needed to tack in the depressions between the ribs and float behind in the rib's elevated areas to form the proper rib shaping. Therefore, tacking points were drawn in with a blue accent color, making sure they all fell in line horizontally, with more tacks occurring at the top of the design and fading toward the bottom.

Figure 2.11 Screenshot of Scallop's assign weaves from EAT Design Scope victor (64)

The dark polyester yarn was selected as the final yarn for the design due to its shrinking properties. It was an 18/1 Nm Tyrian Purple, and it was woven with many other colors during trial work to find the proper coordinating colors. In the

end, the light color was occupied by a 15/1 Nec Slipper Shell Pink cotton yarn, which had soft value shifts in color, making it lightly variegated. The medium color was woven with a 14/1 Nec Sea Star Violet cotton. The best elastic for this design, which proved to have excellent shrinking properties both off loom and after a hot wash and dry, was 29/1 Nm with a Tidal Red color. The width of the fabric shrank by 50% of its on-loom width after washing and drying with heat due to the elastic.

Figure 2.12 Photo of yarns used in Scallop

It was decided to weave *Scallop* on the J3 loom, the newest of the jacquard looms, because the older loom had a harder time running the elastic all the way across the warp. The construction was changed to a double cloth to limit the amount of warp on the face and more effectively hide yarns when not on the face. Each yarn ran as its own weft system: Selector One on Weft System One, Two on Two, etc., with the

exception for the elastic (Selector Four). The elastic ran as a tissue pick (a way of running weft only in a specific area of the design) marked by the blue color of the tacking points in the design file.

The tissue demonstrated the gradient effect of the elastic's placement by appearing as more picks toward the bottom of the design and fading toward the top. To add to the ease of weaving with the elastic, the design was flipped upside down. This allowed the loom to build up to a higher concentration of elastic rather than starting at the more concentrated end. Other changes were made to the file to make the design easier to run and enhance the fanning effect. The design was shifted so that the tacking areas crossed the repeat line, ensuring they were weaving near the selvedges. The tacks were adjusted to stagger along the middle portion of the design, adding more variation and release to the portion of the design that began to fan out.
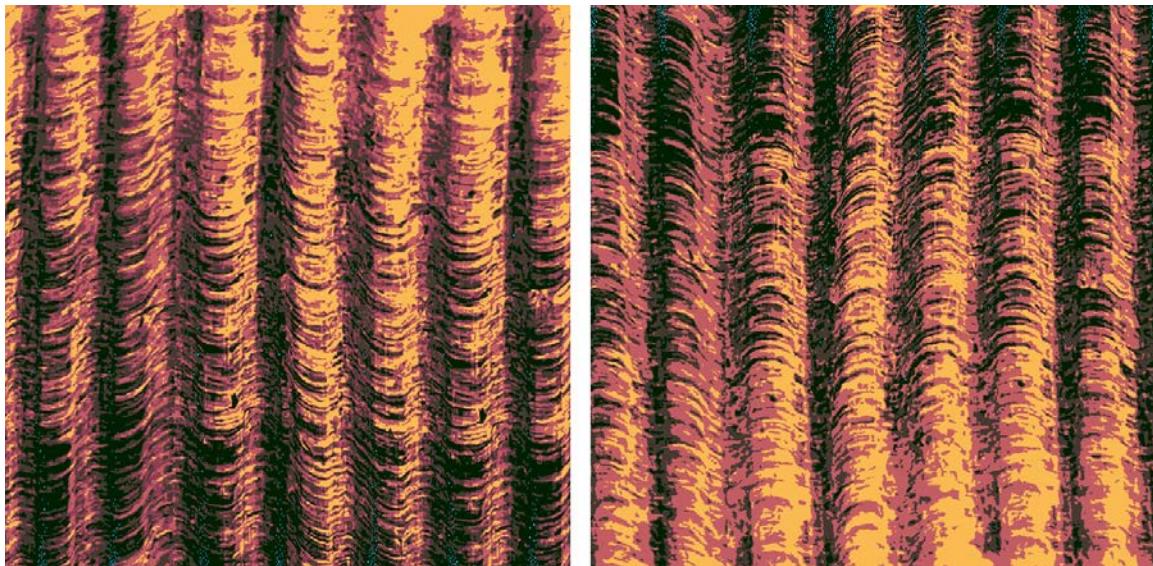
Figure 2.13 Changes made to Scallop's design file

When designing *Mother*, most of the work done on *Scallop* was carried over. Part of the vision behind the dress design is that the two fabrics transition seamlessly into each other at the seam. To avoid looking mismatched, the same yarns and weave

structures were used. Sections of *Scallop's* repeat were put into their own 14-by-14-inch repeat (fig. 2.14) (this time repeating in both directions). *Mother* had no elastic and two weft systems instead of three, which limited the overall weight of the fabric. It was woven on the same jacquard loom to maintain consistency between designs. It was initially woven as a single layer; however, the amount of warp on the face of the fabric was washing out the weft. Splitting the warp into two layers helped the weft colors stand out more. The design was reduced to three colors, simplifying the color mixing. Different box motions (weft selector patterns) were tried to incorporate all three yarns through the entire design, yet it continued to appear washed out. Therefore, it was decided only to use the Slipper Shell Pink (Selector One) and Sea Star Orchid (Selector Two) for *Mother*.
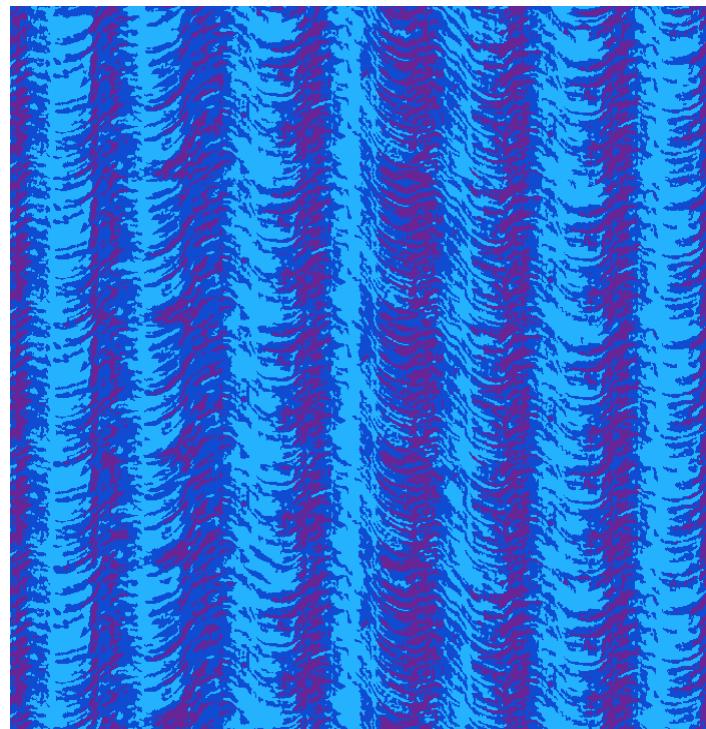
Figure 2.14 Design file for Mother

Figure 2.15 Screenshot of Mother's assign weaves from EAT Design Scope victor (64)

Toward the end of the design process, it became clear that the two fabrics still did not coordinate to the desired level and ultimately appeared "stuck-on". Therefore, the decision to add subtle ombrés to both designs was made to reinforce their coordination further. Two inches were added to the bottom of *Scallop*, making it a 14-by-16-inch repeat (2.16), both to accommodate an ombré effect and to create more room for the hem to flare. The ombré was then added to the box motion at the bottom of Weft System Three, where Tyrian Purple (Selector Three) transitioned into Sea Star Violet (Selector Two). This worked to remove the dark color at the very bottom of the hem, matching the body of the dress.
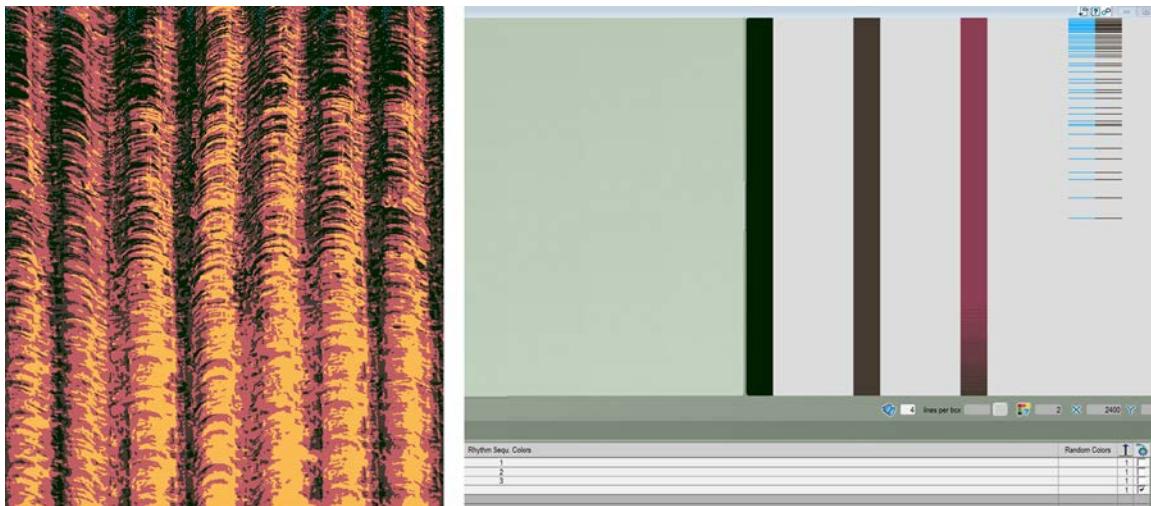
Figure 2.16   Final design file for Scallop and screenshot of final box motion from EAT Design Scope victor (64)

Meanwhile, the design file for *Mother* was repeated vertically four times and converted into a new repeat, resulting in a 14-by-56-inch pattern. A small ombré was added to the bottom of West System Two with Tyrian Purple (Selector Three) blending into Sea Star Violet (Selector Two). The bottom of *Mother* could then blend more beautifully into the top of *Scallop*, at the seam where the two met in the final dress. By repeating the file vertically, it allowed the file to be woven for one and a half yards, with the ombré only occurring at the bottom (fig. 2.17). Although it wasn't a perfect match in the end, the ombrés were effective enough to

call it finished.
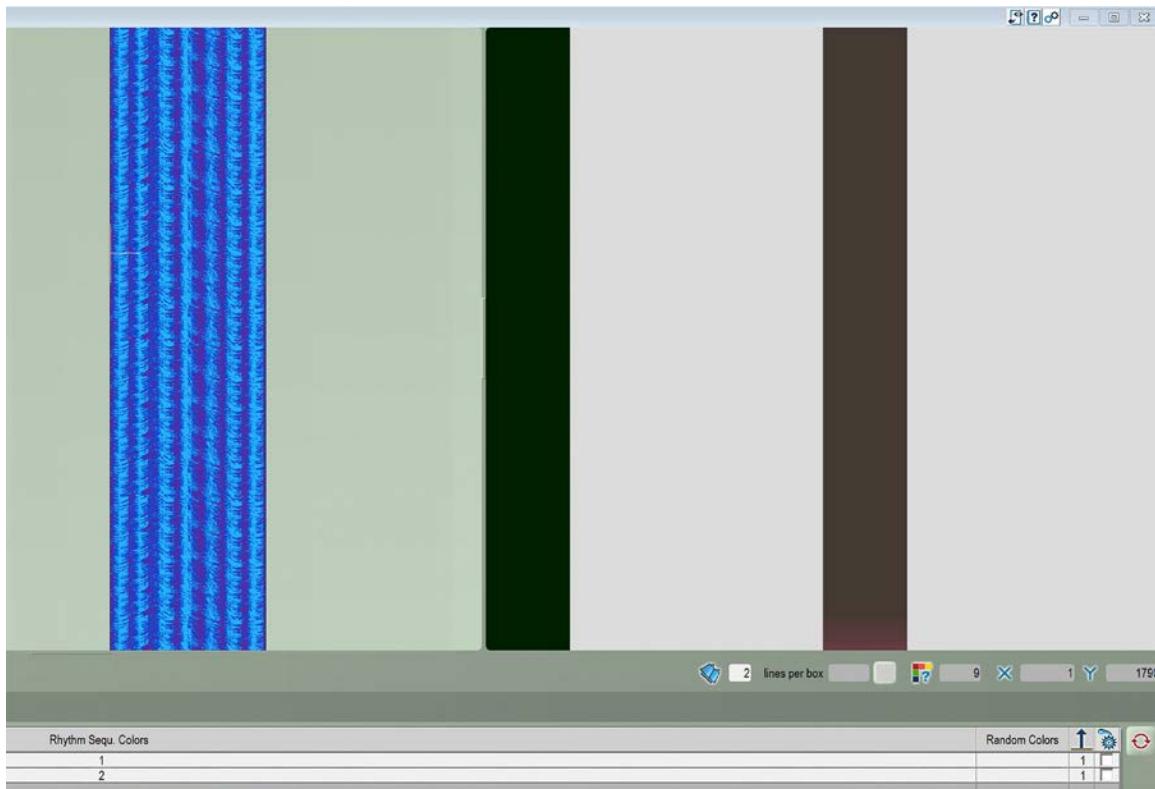
Figure 2.17 Screenshot of Mother's final box motion from EAT Design Scope victor (64)

Once the fabrics were woven, they were both washed in hot water and dried with heat, allowing the properties to take effect on their final appearance. The fabrics were then draped and pinned together on a dress form to communicate the design of the dress they were created for. A rendering of the dress was drawn based on the early sketches and design research for *the Creator* to accompany the concept board and draped piece in the final showcase.

Figure 2.18 Photo of Scallop

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Figure 2.19 Photo of Scallop and Mother

Figure 2.20 Photo of the back of Scallop

Figure 2.21 Photo of Mother

Figure 2.22 Photo of Mother

Figure 2.23 Photo of Scallop and Mother

Conclusion

The scallop shell, symbolic of beauty and creation, served as inspiration for the textile designs of *the Creator* archetype. The scallop shell has been used to symbolize the divine womb and giver of life in depictions of both Aphrodite-Venus and Mary, mother of Christ. The ways in which the scallop shell can be used as a framing device, and arches allow it to designate subjects of importance. *The Creator* of *She Shells* represents Venus's shell, Mother Nature, and Mother Mary in its scallop shell design. The gathered pleats referencing the ribs of the shell, which fan out into the encompassing shape of the womb; the dense yet feminine fabric mimicking the smooth, protective surface of the shell; all form characteristics attributed to motherhood. The seashell's associations with motherhood, fertility, and creation are found in the design of *the Creator* and its scallop references. Departing from shells' connections to the maternal, their representations of sex and desire are explored in the next chapter, *the Lover*.

CHAPTER THREE: THE LOVER

Overview

Seashells have been equated to lust and desire for centuries by artists, scientists, and philosophers who recognized their resemblance to genitalia. In contrast to *the Creator*, whose resemblance to genitalia refers to protective and nurturing wombs in a reproductive sense, *the Lover's* likeness to genitalia concerns seduction, lust, and sexual pleasure. Seashells are employed by artists both to represent the ecstasy and pleasures of sex and its danger and sinfulness in accordance with the Christian narrative of Medieval and Early modern Europe. *The Lover* of the *She Shells* collection embodies the sexual allure of seashells through the design's application of sensorial textures and shapes inspired by the shell's sheen, curvature, and complexity, all of which make it an excellent symbol of desire and sexual intimacy.

Shells and Sexuality

The human attempt to find significance in the formation of seashells led to the observation of a shell's likeness to human body parts. The golden ratio uses the logarithmic spiral of univalve shells to define the ideal proportions of beauty, as well as the human body, particularly the female breast (Cattaneo-Vietti 24). In Anna Grasskamp's chapter in *Conchophilia*, she identifies three ways in which sixteenth- and seventeenth-century shell collectors and thinkers associated shells with the human body: through similarities in their shapes, surfaces, and etymologies (52). Resemblances to the human body can be identified within ears, eyes, brains, breasts, belly buttons, and most commonly, sexual organs. Ancient texts use the same or similar terms for shells and mollusks as they use for the vulva (*Art and Ocean Objects* 122-4). Botticelli's *The Birth of Venus* can be viewed again as an example of the relationship between shells and sexual organs; however, there are other, more explicit and intimate demonstrations of this in Renaissance art.

The slimy, soft body of a mollusk resembles the texture and fleshiness of the vulva. There is sensuality to the animals' exoskeletons; their smooth and shiny outer layer dazzles the eyes and invites touch. Other senses are also stimulated by seashells, resulting in an intense and heightened interaction. People of all ages are encouraged to hold shells up to their ears, in the hope of hearing sounds of the waves. Empty shells have the fragrance of the sea: salty, sweet, and chalky, while shells inhabited by their makers have fishy and salty smells which can be delightful or wretched depending on their freshness. Shellfish are a vital source of nourishment for many people in various cultures, offering a diverse range of enjoyable culinary experiences. The human attraction to shells exists because they tend to stimulate all five senses in curious and seductive ways.

Figure 3.1 The Girl Eating Oysters, Jan Steen, c. 1660, The Mauritshuis, The Hague, Netherlands

Jan Steen's painting *The Girl Eating Oysters* (c. 1660) (fig. 3.1) portrays a female sex worker preparing oysters to eat. Her "coquettish smile" can be "interpreted as an invitation to the spectator to join her" (Akdeniz 350-1). Due to their aphrodisiac powers, oysters appear to be the shellfish most often associated with sexuality and the vulva. Aphrodisiacs were used in ancient times as a medical treatment for low sex drive. Yet later, an increase in fertility was attributed to them in the 1771 first edition of the *Encyclopedia Britannica*. Regardless, "the word is always about sexuality and physical love" (Akdeniz 339). The mollusk then became a symbol of love, while its shell protects the "love", another interpretation of the goddess of love, and the shell in which she is born. Oysters are notorious for being difficult to open, and their meat takes some effort to retrieve. This is symbolic of "the power of love," which requires a different kind of effort to access; however, with patience and determination, it can be found (Akdeniz 343). The metaphor of Venus and her shell, likened to the Oyster and its aphrodisiac flesh, dates back to Antiquity and remains a strong symbol of love and sexual desire to this day.

During the Renaissance and Baroque ages, shells were often implemented into paintings to imply the act of sex, ideas of lust and desire, and to objectify sexual organs. The interest in seashells by curious Renaissance Europeans led to the discovery of similarities between Chinese porcelain and conches from the Indies, causing Europeans to believe that porcelain was made from ground-up shell ("Spirals and Shells" 146). Beauty standards of the time called for pale-white skin, which people could express through imagery of shells and porcelain, both popular imports from Asia. Ovid's description of the nereid, Galatea, in *Metamorphoses* from 8 A.D, details her skin as "more radiant than crystal, smoother than shell" (quoted in "Spirals and Shells" 151). The story of Galatea tells that she was sculpted from ivory by Pygmalion, who fell in love with her. He prays to Venus, asking to marry his creation, and she grants him his wish by bringing her to life

(Kline 269-70). This captured the attention of classicist artists of the Renaissance, who painted images of both Venus and Galatea with iridescent and slippery skin, characteristics that make both the shell and skin so appealing.

Figure 3.2 Pygmalion and Galatea, Laurent Pecheux, 1784, State Hermitage Museum, Saint Petersburg

Jacques de Gheyn II's painting *Neptune and Amphitrite* (c. 1610) (fig. 3.3) uses shells as place holders for sexual body parts. The beautiful objects amplify the passionate gaze and gestures of the couple. The lustrous pink surfaces and opening of the conch placed in front of Amphitrite mirrors the pale color and smoothness of her skin, while the darker pink skin of Neptune blends with the shell that sits below his torso, cleverly placed in the direction of his wife. Meanwhile, the god of love and desire, Cupid, lurks behind her, his finger points into a nautilus shell, presented by Neptune. The shell's cool, silvery color sets it apart from the warm depth of the painting. All together these gestures form an explicit indication of desire and intercourse (*Art and Ocean Objects* 152).

Figure 3.3 Neptune and Amphitrite, Jacques de Gheyn II, c. 1610, Wallrad-Richartz Museum, Cologne

Figure 3.4 Ulysses recognizes Achilles dressed as a woman of Lycomedes, Studio of Frans Francken II, early 17th century, Musée du Louvre, Paris

In the painting *Ulysses Recognizes Achilles among the Daughters of Lycomedes* (early

17th century) (fig. 3.4), Frans Francken II shows Ulysses lifting Achilles' skirt to reveal his gender by his genitals. Achilles' lover, who points to the pile of shells while also lifting her skirt, confirms he is not as he presents (*Conchophilia* 53-7). Here, the shells are a direct abstraction of gender. On the other hand, Jacopo Caraglio's sixteenth-century engraving of Venus in the collection titled *Gods in Niches* (fig. 3.5) illustrates the goddess with a seashell wearing a human face, positioned at her feet like a pet. His "anthropomorphic substitutions disturbed the distinction between the inanimate bodies of objects and the bodies of living entities," where sexual organs are sometimes under control and other times beyond control (*Conchophilia* 53).
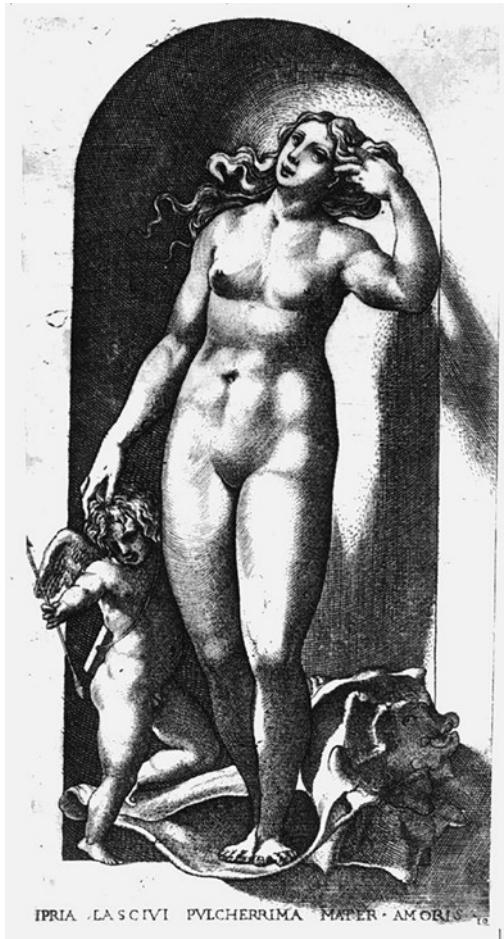
Figure 3.5 *The Gods in Niches:*
Venus, Jacopo Caraglio, after Recco
Fiorentino, 16th century

A seashell is an object of desire in its beauty and mystery. They are objects that humans long to possess and collect, whether in the context of conquest, knowledge, or as a means of preserving memory. Additionally, they are objects of sexual desire in their strong visual, physical, and other sensory resemblances to genitalia. They speak to feelings of bliss, lust, and ecstasy, and have been used as such repeatedly in the arts. The juxtaposition of hard and soft materials in shells, along with their vibrant colors, tells a story of love and sex that humans feel a connection to. They tempt human sight, touch, smell, taste, and sound, which come together in an amplified and heightened sensual interaction with the object.
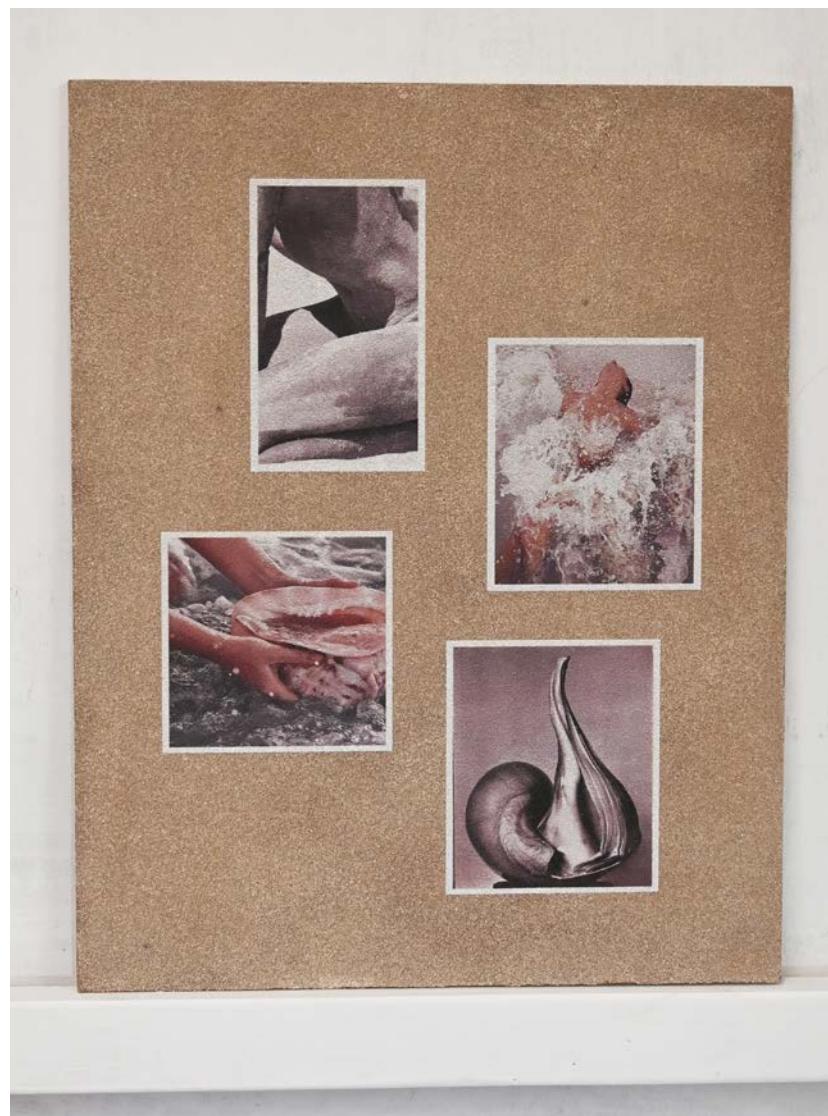
Figure 3.6 Concept board for the Lover

The Lover

The Lover of the *She Shells* collection is the seductress and ruler of senses. She is beauty, lust, and desire. She is intentional and complex. The design consists of a corset with hard and exaggerated curves that accentuate the feminine figure, and a skirt that is drapey, soft, and billowing, cut and ruched into hanging ruffles. The look is sensual in its subtle sheen, sexy in its curvaceousness, sophisticated in its intentionality, and enticing in its depth. *The Lover* design is comprised of colors such as Heavenly Pearl, Cosmic Cream, and Slipper Shell Pink, which evoke feelings of skin, touch, and pleasure. The visual inspiration for this design's mood

Figure 3.7 Fashion design for the Lover

comes from close-range photos of giant clam shells' lips and women's bodies, with an emphasis on the skin. All the inspiration images incorporate grand curves, cavities, and a variety of surfaces that appeal to the touch, as well as the juxtaposition between visually hard and soft materials. The design of fashion was heavily influenced by Jean Paul Gaultier Look Twelve from Spring Couture 2012, Schiaparelli Couture Looks Three from Spring 2025 and Look Ten from Fall 2024. Of the two textiles for *the Lover* archetype, the corset fabric is called *Venus*, and the fabric for the skirt is referred to as *Flesh*.

Figure 3.8 Photo of Venus

The design of *Venus* was derived from trial work on the dobby loom during the early stages of the design process. The trial stood out for its soft shine and depth of surface. White gimp yarn (2/1 Nm) was used to cover the surface of the design. It was chosen for its beautiful satin finish, which comes from its silky rayon fibers wrapped around a coarse cotton center, resulting in a cord-like material. The

thickness of the cotton center gave the yarn a beautiful body, adding dimension and interest to the woven fabric. The subtle luster of the rayon wrapping brought a sense of porcelain luxury to the piece. A very thin 68/2 Nm iridescent metallic yarn, which reflects colors of blue, pink, and green, was used to create a dewy glimmer found in both the shell and the vulva. The yarns used to weave the main structure of the cloth behind the gimp floats were a mix of a 14/1 Nm Slipper Shell Pink cotton and a 9/1 Nec Cosmic Creme cotton, both wound together on one bobbin. An attempt was made to wind them with the iridescent yarn, yet the twist rate (tpi) was so much higher in the thin iridescent yarn that it quickly tangled into knots, becoming more complicated than winding it separately. Therefore, both shuttles (one with cotton and one with the metallic) went through the same shed each time.

Figure 3.9 Photo of Venus on loom

The floor loom was set up with four yards of a twelve-and-a-half-inch-wide warp of white 2/16 Nec cotton yarn at 28 ends per inch. The warp was drawn through the harnesses as a block-draw with "A "and "B" Blocks alternating and ending with an additional A-Block. A "block-draw" indicates sections of differing weave structures across one width. Each A-Block was made up of eight ends, which wove two layers of plain weave. A-Block areas were reserved for securing the gimp yarns into the fabric. Each B-Block was made up of sixteen ends and wove plain weave with the gimp yarn floating on top. A-Block areas were woven in two layers to allow for the gimp build-up caused by the gimp floats in the B-Blocks. Two ends were placed every eight ends, which were specifically reserved for the Fosshape® material, which was applied to the back. Harnesses One through Eight worked B-Blocks, and Harnesses Eleven through Fourteen worked A-Blocks. Therefore, Harnesses Nine and Ten worked the ends reserved for Fosshape®. Fosshape® is a nonwoven felt-like fabric that, when steam is applied to it, hardens into a durable, lightweight material. It can be molded into shapes beforehand and then steamed to solidify. Lengths of three-quarter-inch Fosshape 600, the heavier variety, were cut and floated behind woven pieces secured by ends on Harnesses Nine and Ten.
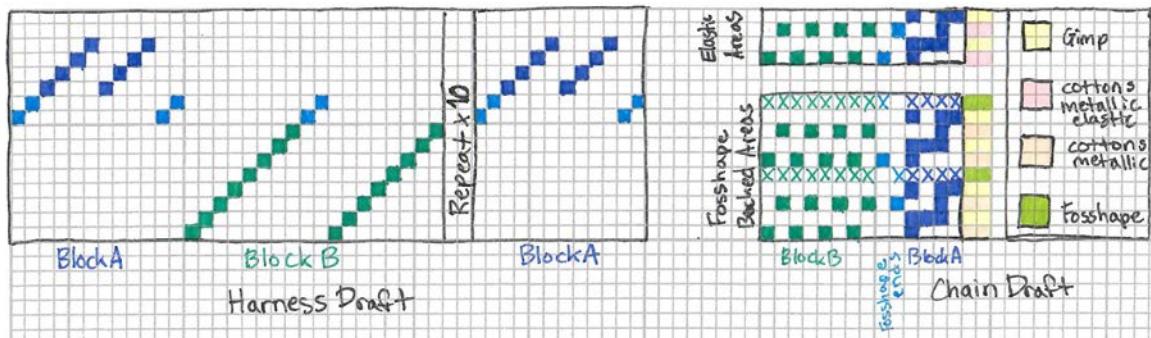
Figure 3.10 Weaving drafts for Venus

White elastic (19/1 Nm) was used in *Venus* to create draw-in and texture. Because each pick of gimp was left to float over B-Blocks, elastic draw-in caused the floats in those areas to stand up, creating lengthwise tunnels of consecutive gimp arches.

The coarse body of the gimp manages to form arches that are elegant and natural, while the changes in surface dimension amplify the satin sheen. The iridescent yarn woven without floating remains behind these ribs to reflect the light from underneath, creating its enticing depth. When the elastic was added to the woven pieces, no Fosshape® was woven because it worked against the elastic's shrinking properties. When the elastic was added, it ran in the same shed as the cotton yarns and iridescent metallic and was pulled tight before each beat of the reed.

Figure 3.11 Photos of steaming process

Once off-loom pieces were molded around the torso of a dress form, large hip shapes were created with plastics from recycling, following the original fashion sketches. The *Venus* pieces were secured tightly around the forms with a combination of pins and twill ribbons. Fosshape® hardens best with the application of pressure and tension, however, this can be controlled depending on the intentions for the performance of the goods. Areas backed with Fosshape® lining were then hit with steam and allowed to dry and harden. Individual *Venus*

pieces were then assembled into a suggestive prototype of the corset for which they were designed.

Flesh was manifested from another early dobby loom trial for a different project. Learning to weave four layers of tabby where the layers cross alternately created multiple stacked pockets across the fabric. This theory and draft were then implemented into a jacquard design. Based on the draft developments on the dobby loom, there needed to be eight areas running horizontally across the design, large enough for the layers to separate into pockets. The jacquard design used eight colors in a 14-by-14-inch repeat to designate each area, and the lines where each color met the next remained in an organic state to maintain the flow of the piece. The areas turned out to be too small, so the repeat was increased vertically to a 14-by-28-inch design, expanding the areas by two.
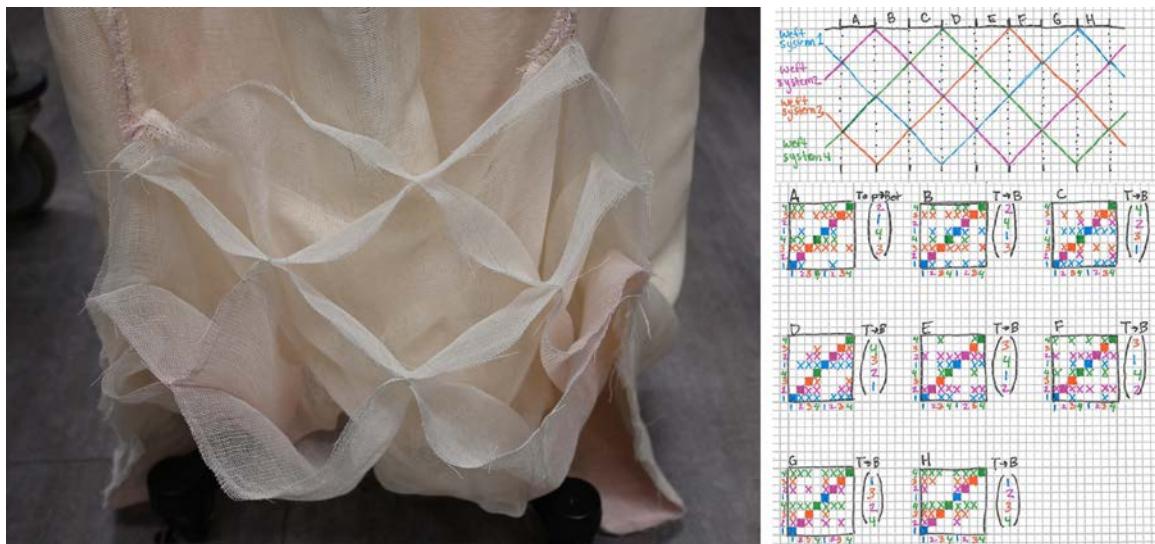
Figure 3.12 Drafts and photo of cross section for Flesh

This design was intended to be woven in a gauze structure (plain weave) with a low epi and ppi. When drafting the four-layered structure, the warp was divided into four, and accordingly, four weft systems were required. It was woven on the J1 jacquard loom, which has a 90 epi, white cotton (60/2 Nec) warp. The design file was set up with 22.5 ends per inch and 25 picks per inch, effectively weaving

a well-balanced gauze and running at a Pick Wheel of 100. The Pick Wheel is a dial on the loom that determines the on-loom ppi, which is based on the number of weft systems (layers). Early on, a problem arose with the split warp because plain weave no longer divided evenly into the design ends, resulting in the appearance of distinctive weave breaks. To avoid them, diagonal lines were drawn into each of the eight areas and filled with a different color. This split each area in half diagonally so that no colors crossed the repeat line. Then the weaves in each new area were rolled (started on the fifth end of the draft), causing weave breaks to occur randomly and invisibly across the diagonal lines of the design, rather than vertically along the repeat line.

Figure 3.13 Change to design files for Flesh

Initially, when this design was woven, the idea of cutting into the pockets was experimented with. The fabric was railroaded (turned 90° so that the weft ran vertically) and hung on a dress form, like a skirt. The bottom selvedge was cut off, and cuts were made vertically up the middle of the pockets through the layers.

Then, two picks running along lines where the layers intersected were held at the bottom of the fabric, and the woven fabric was pulled upward. The loose gauze weaving allows the fabric to slide easily along the picks, which were held in place. Working as gathering stitches do, the fabric was distributed and arranged artfully into ruffles, and the picks that were pulled were then tied at the bottom so that the fabric did not slide back down to its original state. The resulting ruffles have the appearance of the ruffled edges of a conch shell and labia of the vulva. With the proper fibers and colors, this technique has the potential to capture the soft, fleshy characteristics that gave the shell its sexual connotations, hence the design's name, *Flesh*.

Figure 3.14 Finishing trial for Flesh

The cut edges of Flesh were left raw, allowing for the fabric's personality to emerge against what was otherwise a traditional cheesecloth surface. As the color and fiber trials began, a variety of box motions with ombrés, transitioning between pink and white yarns, appeared on various layers. The pink and white ombrés were chosen to reflect the beautiful color transitions that happen within the aperture (anatomical opening of the shell) of a conch shell, where the white porcelain lip blends into the pink interior chamber. This speaks to both the imagery in a shell and in the vulva. The variations included placement in ombrés on weft systems, placement of ombrés between weft systems, and placement of different fiber types and colors. From these trials, it was learned that the pink tended to overwhelm the design. Additionally, some wash trials were done on *Flesh* with mixed fibers, but the drastic change in materiality after washing obliterated the airy and billowing quality vital to its look and association with skin.
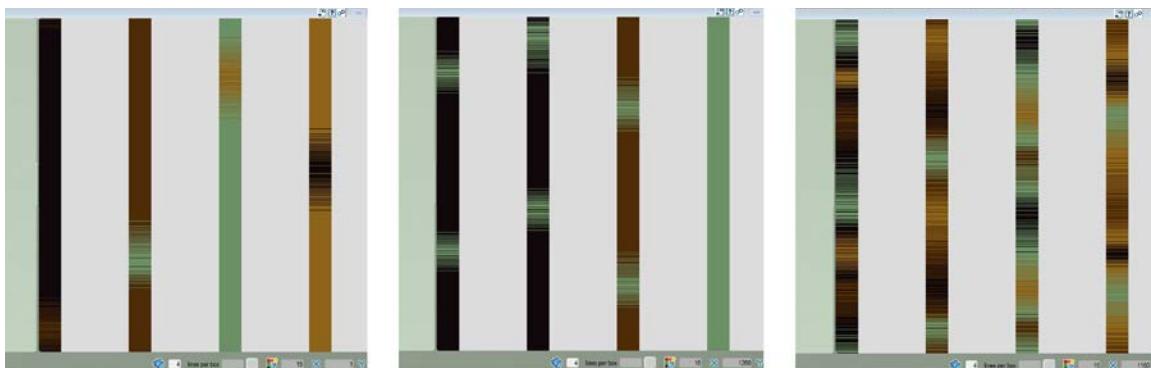
Figure 3.15 Screenshots of ombré trials from EAT Design Scope victor (64)

Eventually, two Heavenly Pearl (natural) colored yarns were landed on, a 1/45 Nec wool and a 1/30 Nec cotton, and a Slipper Shell Pink 14/1 Nm linen, which had subtle slubs that added to the beautifully imperfect and earthy texture of the piece. The decision was made that two weft systems wove with white cotton, while the other two ran with white wool. Additionally, two pink ombrés occurred at two of the eight intersections, only on the top layer. However, when it was cut into and ruched, the pink remained overwhelming. Another trial was performed

where the same version was flipped over, so the pink was on the back. This limited the amount of pink seen on the face, creating a more intentional, soft, and subtle effect.

Figure 3.16 Photo of yarns used in Flesh
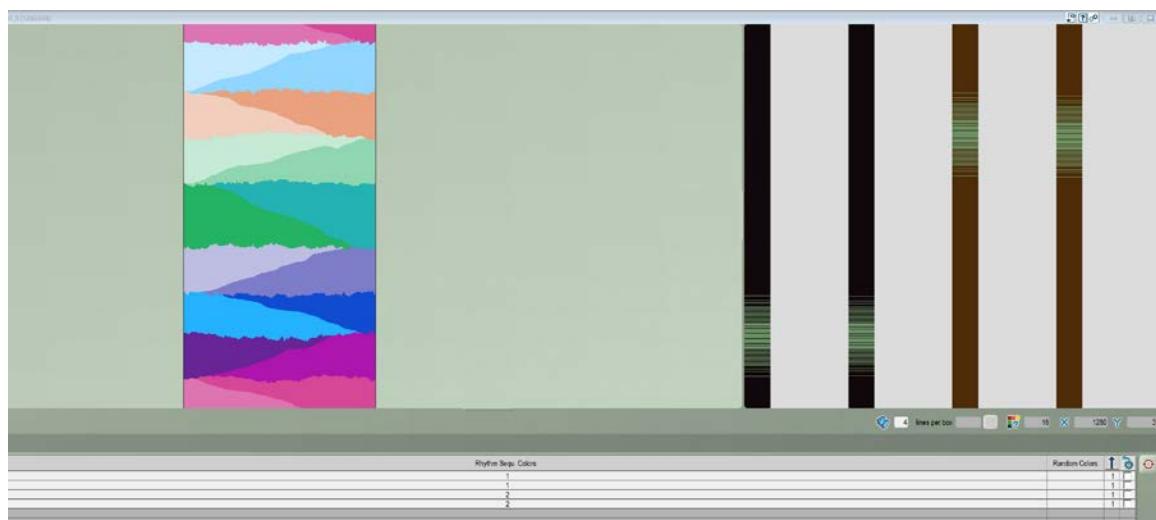
Figure 3.17 Screenshot of Flesh's final box motion from EAT Design Scope victor (64)

Flesh was draped into a skirt simply around the waist of a dress form, while the final constructed *Venus* corset was pinned over top. *Flesh* was then adjusted to hang from the hip shapes of *Venus*. The hints of Slipper Shell Pink within both *Venus* and *Flesh* against the overall Heavenly Pearl and Cosmic Cream hue of the look balanced each other well. A rendering of the final intended design was created to be presented alongside the dress form and concept board during the final showcase.

Figure 3.18 Photo of Venus and Flesh

Figure 3.19 Photo of Flesh
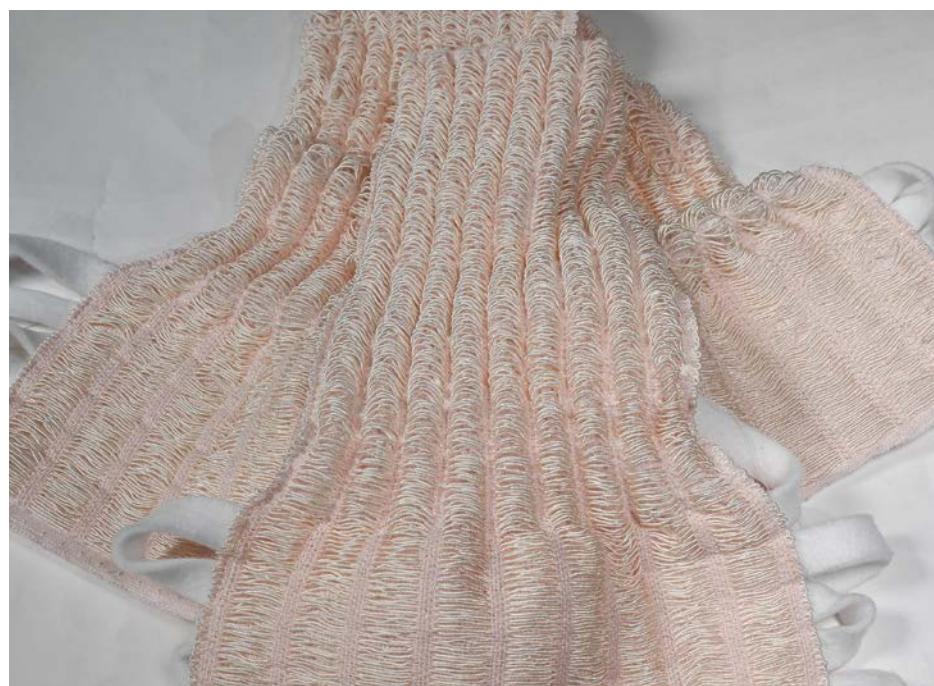
Figure 3.20 Photo of Venus pieces

Figure 3.21 Photo of Venus and Flesh

Figure 3.22 Photo of Venus

Conclusion

Seashells' magnificence lies in their ability to engage all the human senses. Their connection to sexuality goes beyond their resemblance to genitalia, to their aphrodisiac powers through taste and culinary experiences. The design of *the Lover* textiles reflects the shapes and textures that make shells into the sexual objects they are known to be. With the shimmer and sheen, contrasts of hardness and softness, and flesh ruffled layers, *the Lover* of the *She Shells* channels the characteristics of shells, which make them so engaging. And thus, *the Lover* represents the human desires that are cultivated through seashell imagery. As much of the seashell's symbolism, thus far, has been based in mythology, the next chapter, *the Seeker*, looks to the historical influence of seashells.

CHAPTER FOUR: THE SEEKER

Overview

Shell collecting is an inherent human activity, but there are numerous reasons why people engage in this practice. Some may be interested in the study of mollusks biologically, while others may keep them as souvenirs from a trip, as representations of a memory or a close relationship, and still others may simply find them beautiful and want them for themselves. Despite the reason for collecting shells, the practice has a long history, revealing something deeper in humanity that drives people to seek and discover. The sensation of picking up a shell after keenly scanning the beach feels like a successful conquest or a fulfilling procurement of something valuable. Through the depiction a shell's ultimate surrender into human hands, *the Seeker* of *She Shells* represents an explorer and conqueror, someone searching for something that will bring them some sense of joy, power, or insight.

Shells and Collecting

As early as 46 BCE, the Roman statesman and writer Cicero, known for his studies in philosophy and theory, wrote in *The Orator* about the friendship between Laelius Sapiens and Scipio Africanus the Younger, two consuls who spent time together collecting shells and pebbles. It was a way for them to rejuvenate and ease their mind, unburdening themselves from stately duties while away on retreat (Dance 4-5). Many people today also participate in the hobby of collecting as a form of meditation or escapism. In contrast to the practices of modern leisure, a collecting boom occurred in Europe during the fifteenth and sixteenth centuries. Foreign trade relations opened new worlds to the West and sparked an insatiable desire to possess "exotic" treasures. Europeans of the time were interested in anything that demonstrated their affluence and boosted their egos. However, this interest later evolved into seeking a deeper understanding of the universe through the natural world (Cattaneo-Vietti 165). This marked a point in history when the human-shell

relationships transitioned into something much bigger and more profound than the simple amusements of individuals.

Figure 4.1 Armada Portrait of Queen Elizabeth I, unknown artist, c. 1588, The Queen's House, Royal Museums Greenwich, London

As Renaissance culture took hold in Europe, people's interests shifted toward classicism and the acquisition of ancient artifacts and artwork, including small objects such as coins, medals, and gems. The establishment of trade ports in the East and West Indies exposed Europeans to various objects available for their collection, such as exotic plants, animals, and shells from other lands (Dance 10). In the chapter titled "Shell Collecting" in *Early Modern Zoology*, Karin Leonhard details how shells became "symbols of maritime and colonial power, and allegorical attribute[s] of national self-image" through their associations with Poseidon, god of the sea, "who patronized commerce, expeditions, sea wars, and conquests" (177).

Like seashells, pearls spoke to wealth, power, and violence, as seen in Elizabeth I's *Armada Portrait* (c. 1588) (fig. 4.1). Outfitted in garments covered in pearls, the Queen places her hand on a globe symbolizing the global domination of the English empire, while a naval battle ensues behind her (Warsh 104). The expansive maritime power of England, represented in these images, boosts not only the Queen's self-image but also the Nation's.

Figure 4.2 The Curiosity Seller, Cornelis de Man, 17th century

Curiosity Cabinets became a popular way to display such collectibles for guests and visitors to view. Georg Eberhard Rumphius, a German employed by the East India Company, built a collection of 360 exotic specimens, including shells and fossils,

which he later sold to Cosimo III de Medici (Leonhard 104). He implies the eagerness of Europeans to own shells by writing, "Our Compatriots and Friends in the Fatherland are commonly of the opinion that we find the Whelks and Curiosities on the beach, or haul them from the Sea, just as clean and pure as when we send them to those folks" (quoted in Leonhard 204). He goes on to describe the considerable effort required to obtain and clean the shells, and wishes that friends back home would not think it impolite when he was unable to fulfill their demands (Leonhard 204). The hard work involved with shell collecting often exploited the labor of foreign people. Therefore, Rumphius's statement suggests

Figure 4.3 Louise de Kéroualle, Duchess of Portsmouth, Pierre Mignard, 1682, National Portrait Gallery, London

how distant the greed of Europe was from the hardship and tragedy forced on the colonies.

In Pierre Mignard's 1682 portrait of Louise de Kéroualle, Duchess of Portsmouth (fig 4.3), a black child holds out a large shell filled with pearls and a branch of red coral. Shells, pearls, and coral were highly valued for their beauty, rarity, and foreign origins. Yet the inclusion of the child also plays a factor in this display of the Duchess's wealth. Whether the child was one of the Duchess's enslaved servants or a fictitious character with metaphorical purposes, the addition of "a servant or slave to a formal portrait as a 'prop' was a common artistic tool" that emphasizes their wealth and social standing ("Louise de Kéroualle, Duchess of Portsmouth"). The child is representative of the Western colonial exploitation of people of color and the natural materials of their homeland, both of which serve

Figure 4.4 An Art and Curio Collection, Frans Francken II, 1620-25, Kunsthistorisches Museum Wien, Vienna

to benefit European nations and boost self-image. The use of cowrie shells as currency was seriously abused by Europeans who picked them up in the Maldives for dirt cheap and introduced them into West Africa in exchange for enslaved people, making for a significant profit (Scales 94). Shells and slavery are deeply intertwined, both in the slave labor used to hunt and clean shells and in the purchase of enslaved people (Goldgar 6)

Figure 4.5 John Tradescant the Younger with Roger Friend, Thomas de Critz, 1645, Ashmolean Museum, Oxford

The commercialism that grew out of this collecting boom can be seen in the Still Life genre and practice of painting curiosity cabinets in the seventeenth century. Frans Francken II created several paintings of a cabinet collection featuring other paintings, coins, ancient artifacts, fossils, and shells (fig. 4.4). He is one of the first painters to begin painting these collections as his subject ("Frans Francken II").

The Dutch Still Life movement also used rarities and natural objects as subjects. Many painters were combining flowers, and shells in uncomplicated spaces, while Jan Davidsz de Heem painted his subjects in lush and overflowing scenes. His use of shells and other objects in this fashion highlighted "the national and political iconography of shells as well as the interrelations between commerce and riches in the new Dutch republic" (Leonhard 186). Previously, the visual arts were more invested in depicting figures and stories, but with the collection-mania of the Renaissance and Baroque, artwork turned to inanimate subjects devoid of

Figure 4.6 Design for a Plate, Ricreatione dell'Occhio e della Mente nell'Osservazione delle Chiocciole, Filippo Buoanni, 1681, Vasari Gallery

narratives but full of rarities, riches, and introspective symbolism.

Natural treasures not only became objects of worth and beauty, but also became objects of study connected to the workings of the world. Before, the fascination with shells was attributed to God, religion, and Christianity. However, cultural shifts in Cartesianism (a philosophy based in rationalism) and the natural sciences presented new ways of thinking and analyzing them (Grootenboer 120). Europeans gathered to share their shell collections, appreciate their beauty, and discuss explanations of their form (Goldgar 1). The rarities collection of John Tradescant the Elder was published in a catalogue, *Musaeum Tradescantianum*, in 1656, by his son, shown in the painting by Thomas de Critz (fig. 4.5) (Leonhard 190). The Jesuit priest, Filippo Buonanni, published *Ricreatione dell'occhio e della mente nell'observation' delle chiocciole* (*the reaction of the eye and mind in the observation of the snail*) in 1681 (fig. 4.6), credited as the first treatise entirely reserved for mollusks (Leonhard 192). Buonanni, along with Martin Lister and Rumphius, were considered the major pioneers of conchology due to their published and illustrated research, however inaccurate or unsophisticated it may have been (Dance 20).

The seventeenth-century means of collecting shells represent many ideas, such as colonialism, slavery, commercialism, scientific advancements, art movements, and interpersonal relationships. This demonstrates the impact shells have on the human world in both positive and negative ways. There are many deeper studies on this subject, too great for this project to cover. Yet, in addition to having massive global effects, seashells move people on individual levels, representing those of personal or cultural significance. Once washed ashore and picked up by an individual, shells will in one way or another play a part in humanity, "finding a new home away from home, henceforth never to be filled with anything other human thought" (Grootenboer 123).
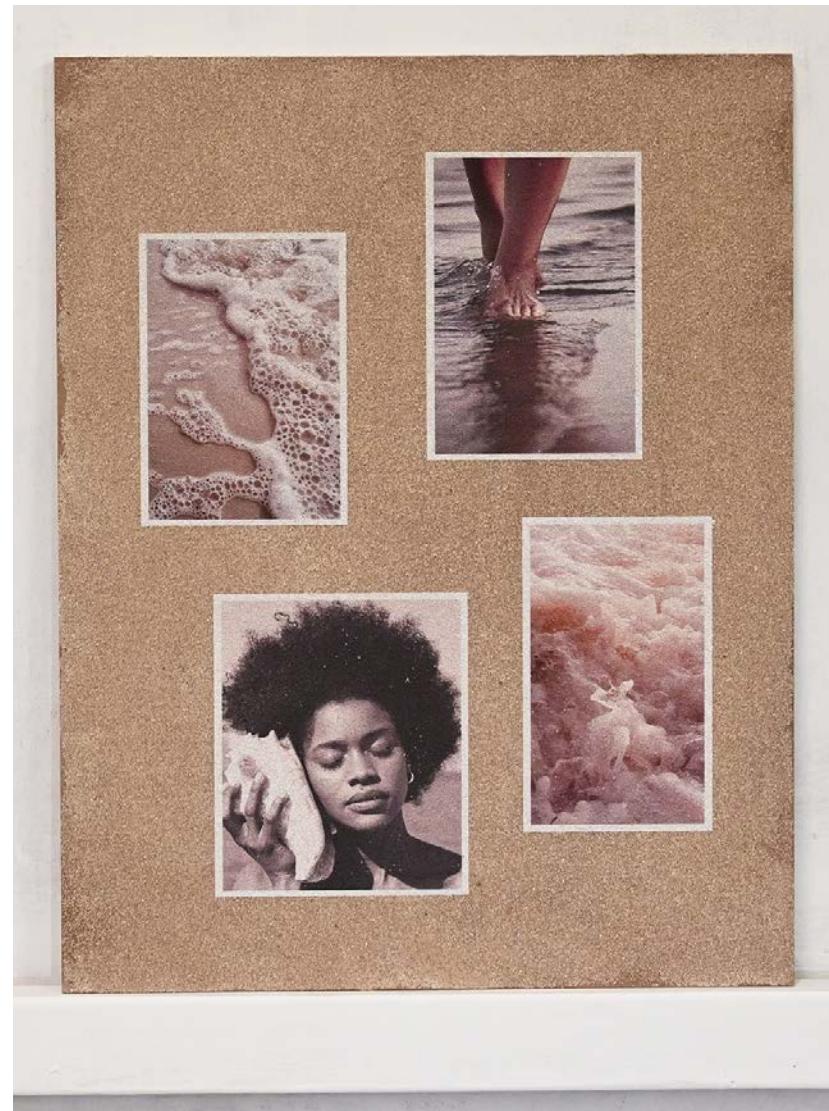
Figure 4.7 Concept board for the Seeker

The Seeker

The Seeker of *She Shells* is the huntress and explorer. She is adventurous, powerful, and thoughtful. She represents pursuit, discovery, and knowledge. The fashion design that represents her is comprised of an asymmetrical tunic and coordinating pants. The tunic aligns with the feminine spirit of the collection, in its flow, lightness, and energy, which represent the novelty, excitement, and wisdom found in sea spoils. The tunic contrasts with the traditionally masculine choice of pants, symbolic of the authority and empowerment that come with science,

adventure, and conquest. The colors chosen for this design are Heavenly Pearl and Driftwood, which create a neutral palette that allows the fabrics to stand on their own. The inspiration for the essence of the fashion came from photographs of crashing waves and surges of sea foam brushing up against the shore. Additionally, images of people walking the shoreline and picking up shells show ways for them to connect to the water, question its mystery, and feel its power. The design was inspired by Looks Five, Nineteen, and Forty-Seven from Khaite's Spring 2025 ready-to-wear collection. The two fabrics that make up *the Seeker* are *Waves*, the tunic, and *Tracks*, the pants.

Figure 4.8 Fashion design for the Seeker

Waves is directly inspired by the waves crashing ashore, propelling the shells into the hands of humans. *Waves* is a double-cloth jacquard fabric woven on J1, which has a 90 epi white cotton warp. The textile has two weft systems. Weft System One (the top) is a 64/1 Nm clear monofilament with a striae of 37/1 Nm iridescent embroidery thread. Weft System Two (the bottom) is woven with white 24/1 Nm elastic. The two weft systems weave completely separately except for the small instances where the top tacks to the bottom. The monofilament on the top gives the layer body, sheen, and translucency, while the striae added a shimmer to the fabric's surface. These choices are intended to mimic the translucency, form, and glisten of water. Although the warp is white, it only clouds the transparency of the top layer, helped by the decreased density from splitting the warp. The elastic in the bottom causes the fabric to draw in nearly half the on-loom width, while the top layer, having no elastic properties, pops outward away from the back, forming peaks where the layers are separate and valleys where they are tacked. The flow of

Figure 4.9 Photo of Waves

the top layer and its undulating movements resemble the surface of the ocean waves, accentuated with the glisten of the iridescent thread.
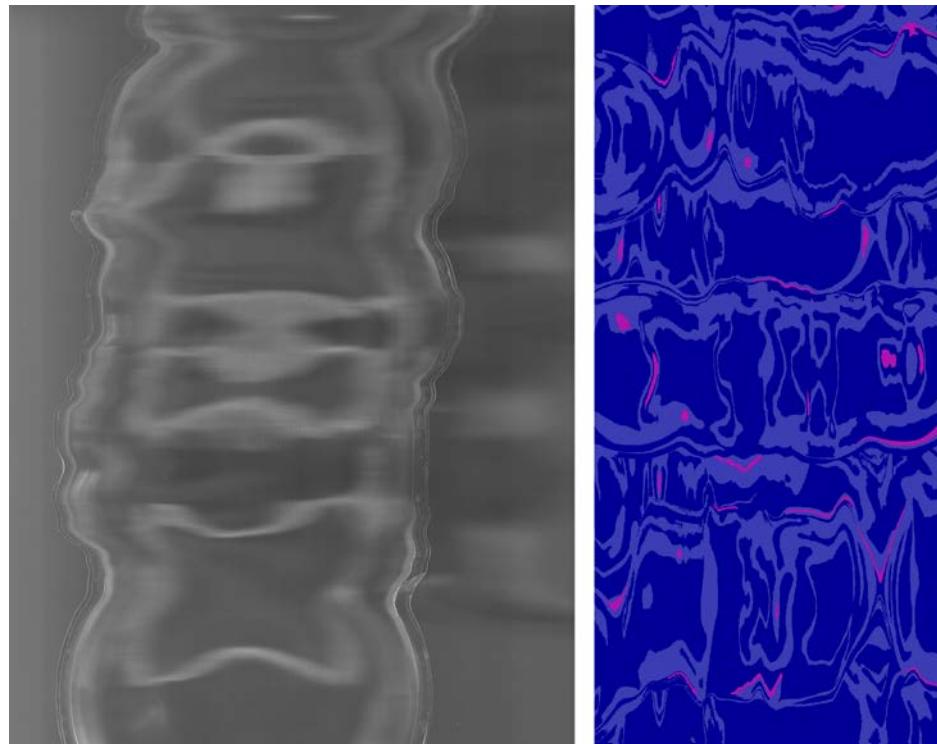
Figure 4.10   Scanned image and design file for Waves

The water also inspires the repeat design for *Waves*. The image was created with a scanner. A piece of plastic recycling was slid across the document table in time with the carriage while simultaneously being rotated. By moving with the carriage, the scan picks up the image directly above it, causing the moments of capture to flow seamlessly into the next. The resulting figures appeared like water ripples off the back of a boat. As the images were put into a repeat and reduced to two colors, the points at which the layers tacked followed specific parts in the rhythm of the ripple. A few different versions of repeats were tried. One was a very long repeat (14 by 72 inches), which essentially edited the individual scans to flow seamlessly into one another. A new 14-by-14-inch repeat was tried, where a single scan ran across the warp. This resulted in too much regularity and repetition, which failed to capture the fleeting and unpredictable nature of water. Thus, a new

14-by-28-inch repeat was assembled with more scanned images stacked vertically, all running across the warp. In the end, the design of the ripples is not visible because of the material, but it assisted in determining the tacking points.

The development of this fabric took a considerable amount of time due to the challenges of weaving multiple unconventional materials simultaneously on the jacquard loom. The first trials were woven with monofilament on top and yarn on the back. With some adjustments to tension and shading the weft sensor (a light sensor used to monitor the weft yarns), it was able to weave. Then a trial was done with elastic in the back, but the loom continued to stop with each few picks. Eventually, the loom wove a small trial with black monofilament and elastic, establishing that it was possible to weave the two materials together. Questions of whether color in the monofilament was necessary were then quashed when a successful trial was finally woven with the transparent and elastic, which ran pick and pick with a cotton yarn in Weft System Two. The key to weaving the piece was taking extra time to experiment with the loom conditions (lights on/off, tension on the selector, covered weft sensor, etc.).

Figure 4.11 Screenshots of Wave's assign weaves and box motion from EAT Design Scope victor (64)

Once this successful trial was off loom, there were some issues with its construction. Firstly, it was noted that the elastic and yarn running pick and pick in the back layer were woven completely separately with an extremely loose structure. It wasn't exactly clear why this construction was chosen, but it needed to be resolved. Another version was tried without the yarn, where the elastic wove alone in a single layer on Weft System Two. A five-harness satin weave structure assigned

to the back elastic was expanded sideways to accommodate the looseness that the split layers previously provided. Despite the expanded structure, there was not enough looseness to draw in as much as before. The designer decided to work backwards and use the same construction as before, where the back layer was split into two, yet this time the elastic ran in both back layers. In this scenario, the warp was reduced to 22.5 epi per back layer, allowing plenty of room for the elastic to move and draw in as much as possible. Finally, the last stages of designing *Waves* involved experimenting with the location of the tacking points to achieve a more fluid pattern, with peaks and valleys. Attempts were made to add color to the design with conventional yarns, but it wasn't as effective in telling the story.

Figure 4.12 Photo of yarns used in Waves

Tracks' name is derived from its resemblance to crab tracks in the sand. This design carries the same movement and flow of water, but conversely appears in the sand that meets it. Tracks in the sand suggest an animal searching the beach for food or

shelter. Furthermore, humans leave their own tracks while seeking treasures such as shells, stones, and coral, while others search in tidepools for crabs, sea stars, or urchins, all in pursuit of fascination and discovery. Regardless of the intentions, beachcombing is a form of hunting and discovery represented by the design of *Tracks.*

Figure 4.13 Design file for Tracks

Figure 4.14 Screenshot of Tracks' assign weaves from EAT Design Scope victor (64)

Tracks is a single cloth jacquard textile also woven on J1. This design emerged out of a different concept in which the idea of using a developed jacquard design as a single woven structure within another fabric was explored. While all jacquards are technically single woven structures, here, a "single weave structure" refers to exclusively assigning raisers and sinkers to two color areas. A repeat was developed from a sketchbook page with chevron markings. For this design, the repeat was scaled down and reduced to red, the markings, and white, the ground. As the trials were conducted, the scale of the design was adjusted a few times, resulting in looser and tighter versions. Larger areas of raisers and sinkers resulted in loose trials, while smaller ones produced tighter options. Ultimately, the looser structure was preferred for its drapeability, lightness, and ease. A decision was also made to slightly adjust the scale of individual rows to make the pattern more dynamic and convey a flow with less regularity.

The design repeat ultimately became a 14-by-4-inch design. Early trials favored a pale pink yarn with a slight luster. However, as the overall *She Shells* collection evolved, a darker hue was considered for *Tracks*. A mid-value color seemed most appropriate given the lightness and brightness of *Waves*, the muddy sand that inspired the pattern, and the more serious tones discussed in its theme. With a few different color trials and yarn mixing, a pick-and-pick box motion with 42/2 Nec copper-orange cotton and a 18/2 Nec greyish-purple acrylic proved to be the most interesting. These two drastically different yarns, when mixed together, reflect the *She Shell* color Driftwood, whose name also holds associations with beachcombing. The pick-and-pick mixture also added an element of interest to the otherwise simple appearance.

Figure 4.15 Photo of yarns used in Tracks

Early on in the design process of *Tracks*, it was made clear that washing it stiffened the drape that it was specifically altered to have. This, of course, was highly dependent on the particular fiber type. When a pick-and-pick box motion was finalized with an acrylic and cotton, it was obvious that they were not affected by washing and heat in the same way. Therefore, leaving the design in its off-loom state was the best choice in this instance. The design was intended to be railroaded, so the direction of the chevrons ran along the leg of the pants, much more flattering to the human proportions. *Tracks* was draped carefully on a form to suggest a pant, while *Waves* was draped on the bias in a spiral-like direction around the torso. This was done to allude to the asymmetrical tunic of *the Seeker* while working against and breaking up the natural linear direction the elastic weft created in the undulating top layer. A rendering of this design was also made to accompany the fabrics in the final showcase, offering a clearer vision for the fabrics' end-use.

Figure 4.16 Photo of Waves

Figure 4.17 Photo of Tracks

Figure 4.18 Photo of Tracks

Figure 4.19 Photo of Waves and Tracks

Figure 4.20 Photo of Waves and Tracks

Conclusion

The history surrounding seashell collecting has touched a multitude of different human experiences. Not only is the mollusk's exoskeleton highly impacted when placed into human hands, but so is human history and the generations of people affected long afterward. When Grootenboer, as quoted above, says shells were "never be filled with anything other than human thought," she insinuates this sentiment (123). Once a shell is collected, the rest of its life will be in service of humanity in some shape or form. *The Seeker* represents this moment of collection, when prints are left in the sand and waves herd the shells into the human world. This imagery appears in the designs of the fabrics with its translucent dimensionality, sparkle, flow, and patterning. The colonial expansion into the East and the Americas not only sparked new scientific research and foreign riches but also influenced and fueled the West's beliefs in mermaids, as noted in the next chapter, *the Enchanter*.

CHAPTER FIVE: THE ENCHANTER

Overview

In today's modern world, children play with seashells on the beach, manifesting whimsical worlds where their imaginations soar, and adults, most of whom have lost that imaginative spirit, can still find a moment to marvel over the object. It's hard to examine a seashell and not imagine wild mermaids and underwater kingdoms, especially in keeping with the evolution of the mermaid into the idealistic underwater princess that modern culture continues to invest in. The power of the seashell can propel a person's mind beyond their own reality and into the world of the shell, its origins, ingenuity, and life form. Mythical sea creatures and seashells are symbolic of similar ideas, yet the mermaid stands as a human projection of the concept, a way for people to come to terms with their own nature. *The Enchanter* is inspired by mermaids, and as a *She Shell*, she embodies the fantastical archetype of mystery, seduction, and the imagination.

Mermaids and Imagination

In the introduction of his book *Imaginary Animals*, Boria Sax argues that the human is too complex, inconsistent, and elusive to be defined by words (24). Consequently, humans conceive imaginary animals as a projection of what cannot be revealed about themselves. Sax refers to them as a "second self" built out of human fears as well as aspirations (Sax 47). The hybridization of animal parts and human parts in such creatures is a direct result of this, and if no human trait is apparent in the creature, it often manifests in the language of the beast (Sax 47-8). There is an understanding that the deeper workings of the world are too vast for human comprehension. Therefore, religion becomes a conduit for acceptance, allowing one to relinquish reason and understanding (Sax 95-6). Imaginary creatures are another form of this, where people accept humanity through outside representations, such as mermaids and seashells (Sax 95).

Figure 5.1 Scylla, c. 470-450 BCE, Musée du Louvre, Paris

Over time, tritons, nereids, sirens, and mermaids have blended or evolved into each other to form the familiar modern sea creature of today. Seashells connect these beings to the underwater fantasy world in which they are found, as well as emphasize their sexual affiliations. Deities that take on the form of half-human and half-fish appear in many cultures throughout human history, dating back as far as
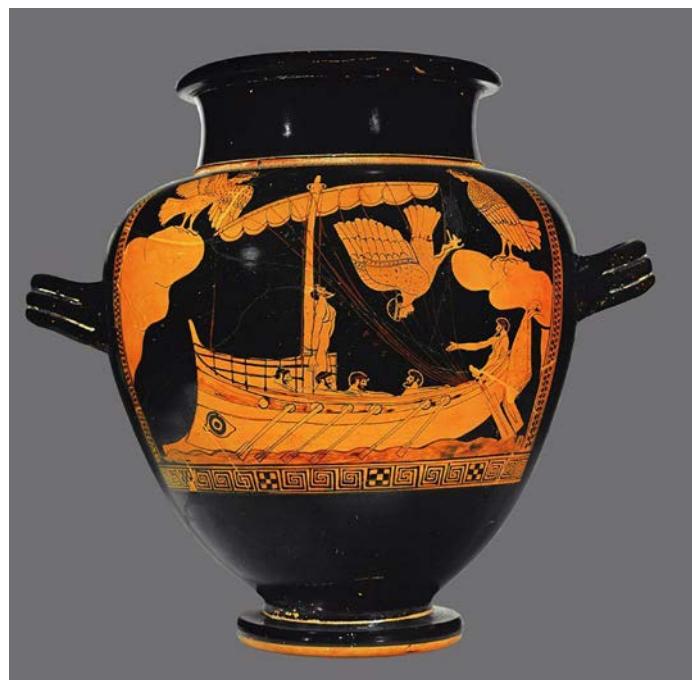
Figure 5.2 Stamnos with Odysseus and the Sirens, c. 500-480 BCE, British Museum, London

5000 BCE, with the Acadians' god Ea (Scribner 30). The sirens and the monster Scylla, from Ancient Greek mythology, who famously appear in the Odyssey, are the foundations of the modern image of mermaids (Scribner 10). Neither of these creatures initially appeared as half-woman and half-fish, but instead, sirens were half-bird, half-woman, and Scylla was a hideous and ferocious she-monster. The fishtailed woman of Greek mythology, known as a nereid or tritoness, eventually merged with sirens to take on the form of a mermaid.

Figure 5.3 St. Christopher, Master H. L., Paris

Sirens, whether depicted as half-bird or half-fish, perched themselves on rocks, singing sweet, seductive songs that enchanted men to dive into the sea or steer their ships off course, to their eventual deaths. Leofranc Holford-Stevens notes that "generally, the Siren is the symbol of the false and the trivial" (21), and early Christians used this allegory of deception to fit their objective to weaken femininity

and advocate for devotion and restraint. Some portrayals of St. Christopher carrying the child Christ across water include a creature emerging from the depths with fishtails. The sirens or mermaids in these images represent the sinful temptations that might lead St. Christopher astray on his virtuous journey (Arts and Ocean Objects 161). The magical powers of mermaids likened them to witches, historically used to villainize women by Christian leaders.

Figure 5.4 Misericord: The Siren from Church of St. Illide, formerly at St. Chamant, 15th century, France

Medieval churchmen used visual imagery to communicate their teachings to the illiterate population, and portrayals of mermaids were meant to shock and scare churchgoers (Scribner 13). Bare-breasted female figures with long flowing hair and a fishtail from the waist down were carved onto the outside of churches and painted in illuminated manuscripts. They often held combs and mirrors symbolizing vanity and overall resembled everything people were taught to be sinful and uncivilized. Some images might show the mermaid spreading apart her two

tails as if to expose her "reproductive organs graphically". In *Merpeople: A Human History*, the author writes that Christian artists "no longer needed a hideous siren or Scylla. They needed a wondrous, beautiful, and titillating female form that most effectively resonates with modern audiences. She was still hideous to medieval audiences, just in different ways" (Scribner 39). But with the dawn of the Renaissance, mermaids began to symbolize more than demonic creatures.
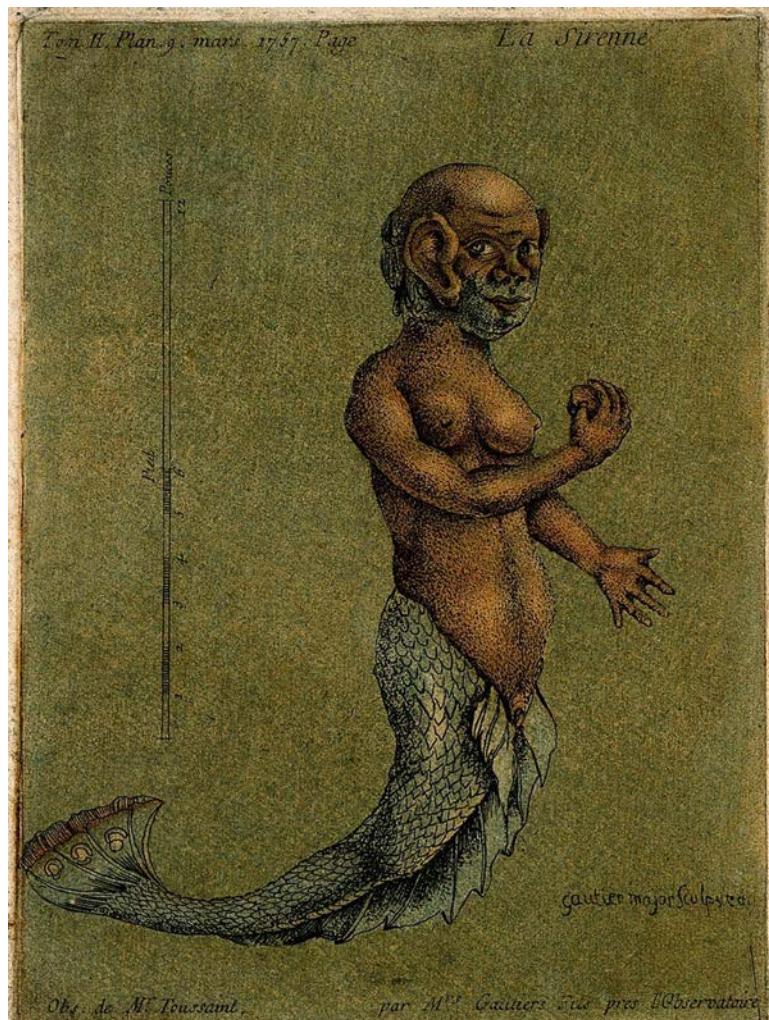
Figure 5.5 A Mermaid, with a Measuring Scale, A.E. Gautier d'Agoty, 1757, Wellcome Collection

Europe's expansion into foreign territories and its discovery of the New World ignited an interest in the exotic and strange. Europeans believed that Jerusalem

was the center of the world, and expansion into Africa, Asia, and the Americas invited ideas that magical and supernatural beings populated the outskirts of the world (Scribner 65). This is evident in the incorporation of mermaids on world maps at the time. Maps showed the exotic and mysterious possibilities that could be found in other parts of the world (Scribner 18). Scottish minister Andrew Ross wrote to Thomas Browne in the mid-seventeenth century, "Acostos tell us of the Indian *pacos*, which in some parts resembles the ass, in others the sheep. Lerius speaks of the *tapiroussou* in Brazil, which resembles both an ass and a heifer. And
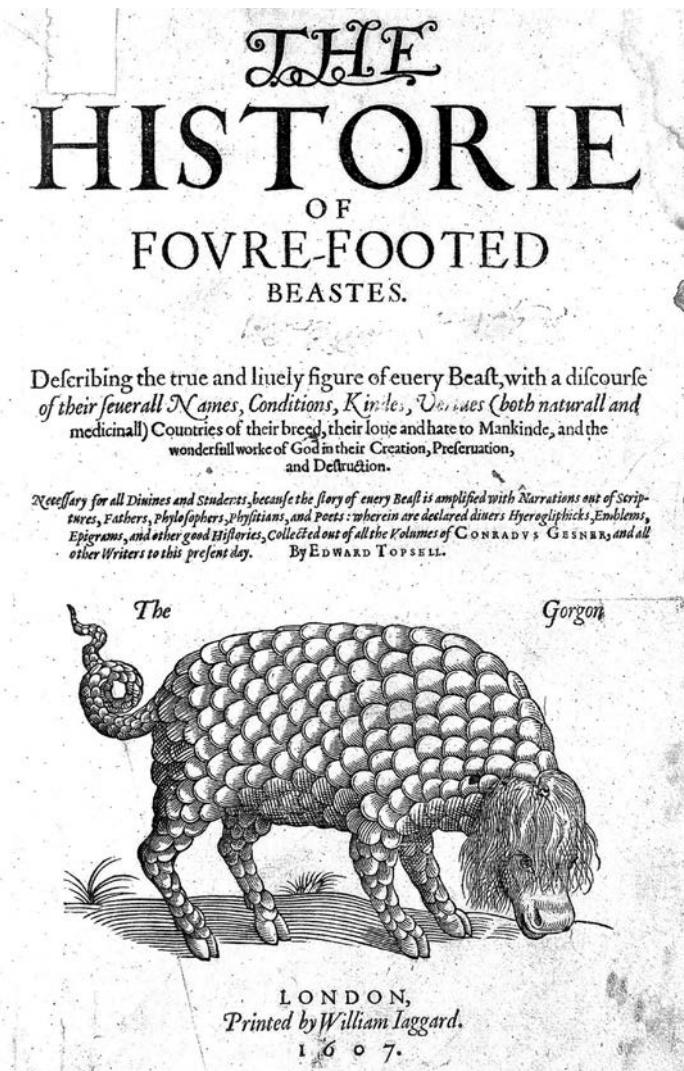
Figure 5.6 The Historie of Foure-Footed Beasts, Edward Topsell, 1607, Wellcome Collection

there are many other mixed animals that we read of such as flying cats, flying fish, and some sort of apes with dogs' heads called *cynocephali*" (Sax 39). Ross reveals the confusion surrounding foreign beasts. Even though *pacos* (alpaca), *tapiroussou* (tapir), and flying fish are all real animals, their exoticness gets lost in translation along with others that may only be imaginary, like the *cynocephali* (half-human, half-dog). The strangeness of these new lands made it difficult to accurately describe them to people back home, deepening the fantastical ideas about faraway cultures and their natural inhabitants, as if proof that creatures like mermaids existed (Sax 39).

In her book *Art and Ocean Objects of Early Modern Eurasia*, Anna Grasskamp details goldsmith Marx Kornblum's nautilus cup (c. 1580-90) and the juxtaposition of the two female figures on it. The top figure is a combination of Venus and Fortuna sailing on a shell, symbolic of the virtuous European, while the eroticized foreigner is represented by a bejeweled two-tailed mermaid (53-55). Grasskamp notes the differences in the figure's nudity. Venus bears a sense of innocence and purity in contrast to the mermaid, whose jewelry draws attention to her breasts in a seductively dangerous manner. She notes that they govern different realms, Venus sailing virtuously on the sea and the mermaid ruling the underworld, representative of the unfamiliar and foreign parts of the world (Arts and Ocean Objects 55). This cup demonstrates the distance between Westerners and foreign cultures, the mystery and exoticism that surrounds them, and the erotic and excessively sexualized stigma built around people of color.

As mermaid sightings increased, the purpose they served expanded beyond religious teachings and fairy tales. The seventeenth-century collecting craze and formation of curiosity cabinets not only brought in natural ocean objects, but "mermaid hands, skins, and occasionally full specimens" (Scribner 79). Eventually,

many physicians believed in their existence and wondered if the creatures held any insight into human origins (Scribner 109). Like seashells, mermaids carry sexual affiliations as well as the curious, serving purposes both religiously and scientifically. They ignite dreams of faraway places, cultures, and people, unfamiliar worlds full of mystery and fascination, and are then used to villainize women and dehumanize non-European people.

Figure 5.7 Nautilus Cup, Marx Korblum, 1580-90,
Kunsthistorisches Museum Wien, Vienna
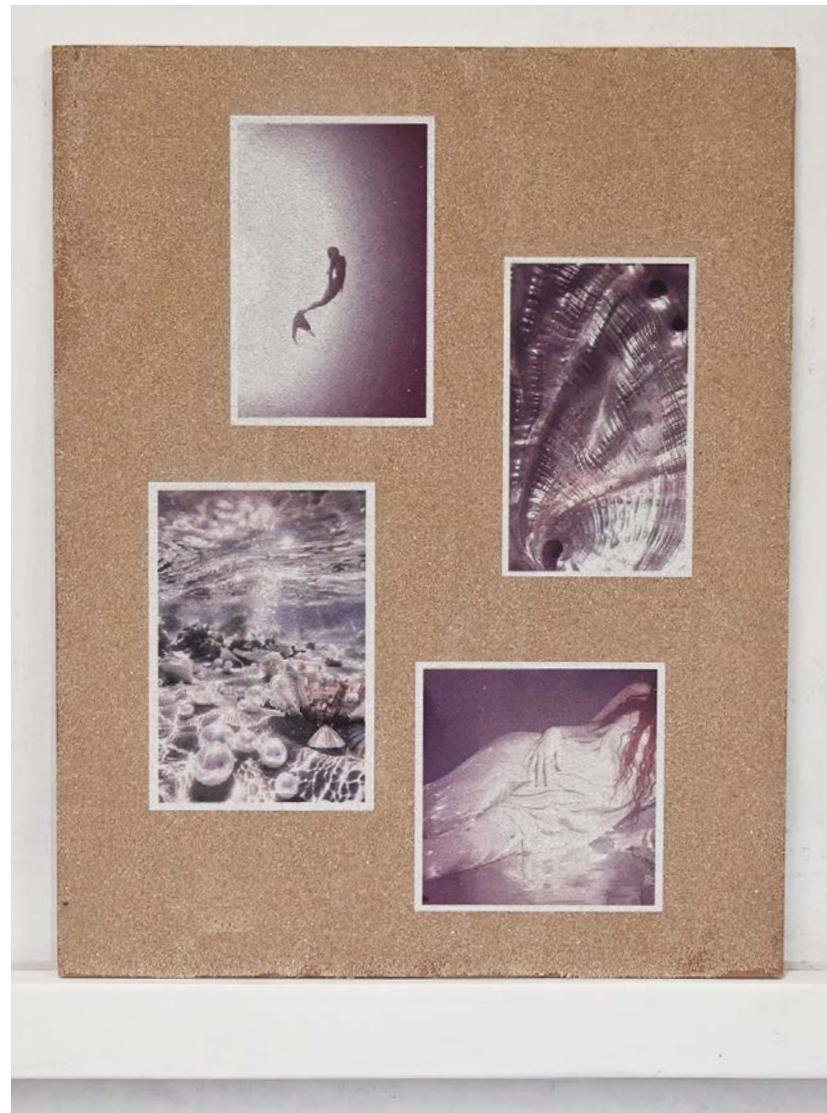
Figure 5.8 Concept board for the Enchanter

The Enchanter

The Enchanter of *She Shells* is a mermaid, the mysterious and temptatious creature. She is magical and comes from faraway realms. She is bewitching, seductive, and as dangerous as she is beautiful. The fashion design reflects this in its use of unconventional materials, textures, and negative space. It's a combination of a long, fitted skirt with a wire corset that has slight curvature, but sharp, pointed hips. The dress is seductive in its exposure of the body and form-fitting silhouette. It's magnetic in its wire material, dangerous in its sharpness, bewitching

in its shine, and armored in its scales. The colors chosen for the archetype are Abalone Silver, Tyrian Red, Sea Rose, and Ammonite Brown. They convey magic, beauty, and danger. The inspiration for the overall design came from depictions of mermaids or enchanting scenes that give the essence of mermaids, but not entirely dangerous, for the danger lies more in the beauty of the beast than in fear. *The Enchanter* uses Couture designs like Jean Paul Gaultier's Spring 2020 Look 49, Spring 2025 Looks One and 27, Schiaparelli's Look 31 from Spring 2025 and Look Nine from Spring 2023 for corset inspiration. *Siren* is the name of the corset, associated more with the dark side of mermaid lore, while the textile that forms the skirt is called *Scales*.
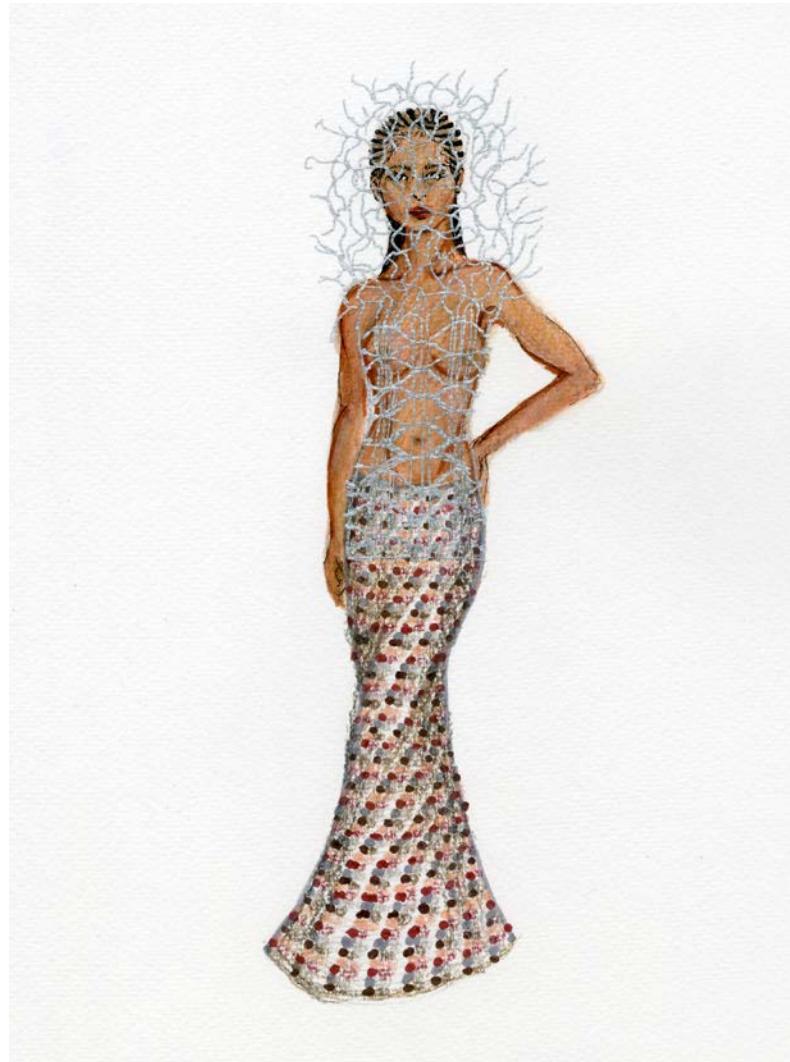
Figure 5.9 Fashion design for the Enchanter

Siren was born from research into both weaving with wire and the leno weaving technique. Leno weaves are born out of the manipulation of the warp ends to cross each other (in any number of combinations) to create open spaces in the fabric. The open spaces in leno wovens, when paired with the moldable structural properties of wire felt, are reminiscent of both a shell's architectural nature and a scaled fishtail, as well as the naked-dress craze currently happening in the fashion industry. The "naked dress" uses transparent fabrics that show most of the body, often exposing the nipples or more. A daring and controversial trend, the "naked dress" gives agency to the wearer in the face of objectification. Charles Trepany writes, "To some, it's a symbol of sexual empowerment and liberation. To others, a symbol of degradation and objectification" (Trepany). This is the same for the symbol of the mermaid. The wire cage-ness of the piece also symbolizes conformity and gender roles that imprison women socially and culturally. *Siren* speaks to the empowerment and agency women face in response to sexual mistreatment and degradation, through the imagery of mermaids.

Figure 5.10 Photo of wire used in Siren

First trials were conducted to ensure that the wire could, in fact, weave leno (doups are additions made to the harnesses of the loom that cause the ends to cross when the harnesses are lifted). Upon the first trial, it was discovered that very thin, 28-gauge stainless steel wire was perfectly capable, but worked better in denser areas of one-one leno groups at sixteen ends per inch. For the second trial, a heavier 22-gauge stainless steel wire was used in two-two groupings at eight ends per inch for areas intended to have more negative space. The trial warp was set up with different widths of blocks, consisting of the two wire sizes. A-Blocks consisted of the 28-gauge wire were drawn through helper harnesses thirteen and fourteen, and doup harnesses one and two. B-Blocks were made up of the 22-gauge groups on helper harnesses fifteen and sixteen, and doup harnesses three and four.

Figure 5.11 Photo of weights of the back of the loom

In initial trials, not enough tension was applied to the warp ends of the 22-gauge wire to cause them to cross and uncross. A few weights were hung on the 22-gauge ends off the back of the loom to add tension, yet part of the problem continued to be the 90° angle of the wire dropping off the back rest. The sharp turn of the backrest relieved too much of the added weight, made evident by the buckling of the wire. An extension off the back was built with a rounded roller for the wire to run over. This helped with the tension, but it was clear that more weight was needed. So, 250-gram weights were hung off every three or four 22-gauge warp ends. This solved all the problems with tension and weight for the 22-gauge wire, yet the 28-gauge wire then began to show its issues. Because all the 28-gauge warp ends were tied onto the same bar, pulled tight with very heavy weights, an inconsistent tension arose across them. These ends also needed to be pulled down by individual weights, just like the 22-gauge ends. The 28-gauge wire found the most success with 180-gram weights on every three or four ends.

Figure 5.12 Photo of doups and tie on

84

The doups used on the 22-gauge wire groups were doubled-up, adding more strength to maintain a hold on the inflexible, heavy wire. During the second trial warp, it became obvious that the 28-gauge wire's doups needed to be longer, so a new doup length was determined while the harnesses were raised. This new length was more effective in creating a larger shed for both crossing ends and uncrossed ends of the 28-gauge wire. When this second trial warp was completed, the piece was removed from the loom and pinned to a dress form to be analyzed.

Figure 5.13 Photo of Siren trial on dress form

It appeared that the 28-gauge areas wove relatively well, but were most effective in blocks wider than one inch. The 22-gauge regions relied on the strength and twisting of the wire to hold them in place. It found the most structure in three-inch blocks of six, two-two leno groups. These revelations were used to plan out the final warp. It consisted of one-and-a-half-inch-wide blocks of 28-gauge ends on the outer edges, and centered in between them were three, three-inch blocks of 22-gauge ends divided by two, two-and-a-half-inch blocks of 28-gauge wire blocks. The leno was set up so that all the one-to-one group 28-gauge wire ends crossed to the right on the left side and left on the right side, making the piece symmetrical. The 22-gauge leno groups had every other group crossing in different directions to form facing pairs.
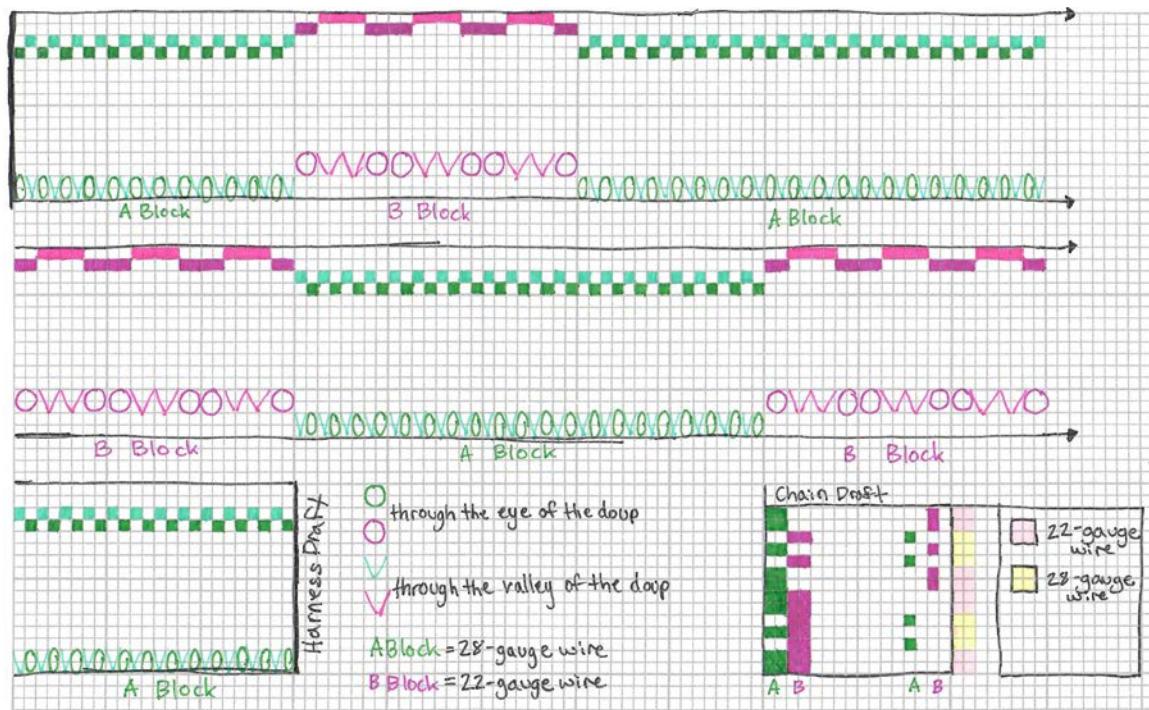
Figure 5.14 Final weaving drafts for Siren

The process of setting up the final warp was extremely tedious in hanging the weight off the back of the loom. During the trial warp, it was found that every time the warp needed to be advanced, it was physically too heavy to crank forward.

Therefore, each weight was placed on top of a bench to alleviate the weight. Only then could the from beam be rolled and locked in place before moving all the weights back into their hanging position. However, every time this was done, the ends began to twist, and with so many weights, they ended up sitting on top of one another, losing their function. Therefore, the final warp required a system of organization for the ends.

Figure 5.15 Photos of final warp set up for Siren

Two yards of the 22-gauge wire were wound on the warp board and three yards of the 28-gauge wire. Each turn in the warp was tied with a color yarn in a predetermined color order. When the ends were hung with weights, more colors were added along the wires to have multiple points to follow. Groups of weights were sectioned out and color-coded with black and white cord, allowing them to be moved together and arranged off the back of the loom in proper order. The 28-gauge wire was made a yard longer so that it could hang off a bench placed at

the back of the loom. This was intended to organize the ends and limit the number of weights hanging in the same area, thereby avoiding them from sitting on top of one another. Once this was done, it was decided that a second bench could help in splitting up the 28-gauge ends because there were so many.

Figure 5.16 Photo of Siren on loom

The final 24-inch piece took approximately eight hours to weave on the loom. The weave structure consisted of undulating wire picks. Two picks of 22-gauge wire were woven together in the same shed. The next three picks of 28-gauge wire were woven to leno in the 28-gauge warp blocks but pinched into the same shed as the two previous picks in the 22-gauge warp blocks. Then, two additional picks of 22-gauge wire were woven again in the same 22-gauge warp block shed, but lenoing in the 28-gauge warp blocks. This encouraged all the picks in the 22-gauge blocks to pinch together, whereas they were forced apart in the 28-gauge blocks. The structure created large areas of leno structure and negative space, outlined by

the more substantial 22-gauge wire in wavy motions. The following repeat was the same, but the 22-gauge wire was maneuvered to leno while still pinching the picks in the same shed. A scale-like pattern was created by the undulating movements of the wire while the leno (crossing warp ends) held them all in place.

Figure 5.17 Photo of Siren's off loom finishing

When the piece was ready to come off the loom, the warp was cut off so that the lengths on either end remained long. The extra ends were twisted and locked to continue in a wild and untamed design that extended upward, covering the face. The finished quality was intended to further reference the folklore surrounding the dangers of mermaids and the propaganda that fueled the savagery attributed to the seductive women and people in lands far from Europe.

Figure 5.18 Design file for Scales and screenshot of Scales' assign weaves from EAT Design Scope victor (64)

The design of *Scales* was inspired by a deflected warp sample, which ended up looking like fish scales as the yarns moved around each other. The design initially made on the dobby loom was transferred to a jacquard woven on J1 using a white cotton warp. Different sizes were experimented with, as well as various yarn sizes. A version was tried as a double cloth to reduce the amount of warp showing, but it was too loose and better kept as a single cloth. An 8/2 Nec cotton was determined to be the best size yarn for the weft. This jacquard design had three colors, which are checkered and offset so that each color appears diagonally across the design. Each color was assigned weave structures: raiser, sink, and a two-two basket. The

areas of raisers and sinkers had no interlacings, allowing the yarns to shift freely and form scale-like movements.
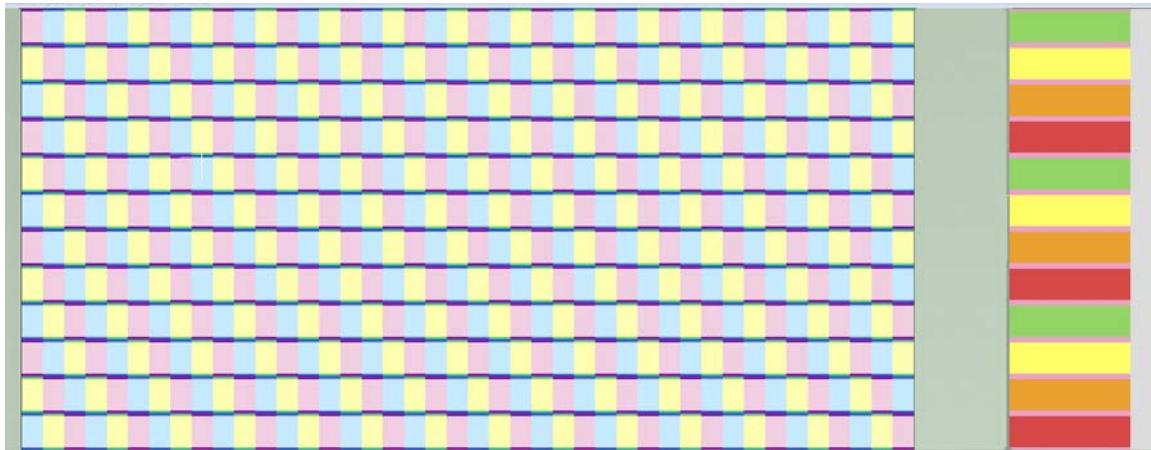
Figure 5.19 Screenshot of Scales' final box motion from EAT Design Scope victor {64)

Each row of the checked pattern appeared as a different color yarn by way of a striped box motion. Initially, three yarns were used in the design to balance the three weave structures. However, it appeared very linear. Each yarn color appeared in line, both horizontally and vertically, creating distinctive perpendicular visuals that contradicted the overall concept of *She Shells*. By adding a fourth yarn color, it again offset the areas where each color appeared on the face, creating a new diagonal direction to break the regularity further. Following the lead of *Siren's* silver color, Tidal Red, Abalone Grey, and Sea Rose yarns in 8/2 Nec were chosen. Early in the trial work, an attempt was made to add a "silver" yarn, but the hue of silver was too high in value and appeared very blue in combination with the other colors. The dark nature of the subject of mermaids required a darker hue, and Ammonite Brown was introduced.

The idea of including an iridescent yarn between each row of yarn colors was brought up. Using the pink version of the iridescent embroidery thread from *Waves*, picks were added to the box motion on either side of each stripe. At first, the picks followed the same weave structures as the cotton yarns, however, the slippery

characteristics of the thread tended to slip out of the fabric during the wash process. Washing was crucial to this design, as it facilitated the movement of non-interlacing yarns to achieve the desired scale shapes. Therefore, washing was not something that could be given up.

Figure 5.20 Photo of yarns used in Scales

In the design file, lines between rows were added and broken up to follow the checked pattern adjacent to it. In these areas, the iridescent picks wove plain weave when adjacent to the raisers and basket blocks, while floating on the face when adjacent to the sinker blocks. This introduced an increase in interlacings along the iridescent picks to hold them in place. This was made even more effective when an iridescent pick was added to each of the existing ones (two picks on either side of each row, or four picks between each row). Therefore, the outer picks packed in the inner picks, helping to keep them in place during the wash process. The best

wash cycle for *Scales* was a cold wash and a hot, damp dry, followed by air drying. Some additional steaming was necessary to remove the folding tendencies within each row, which were caused by the tight basket structures.
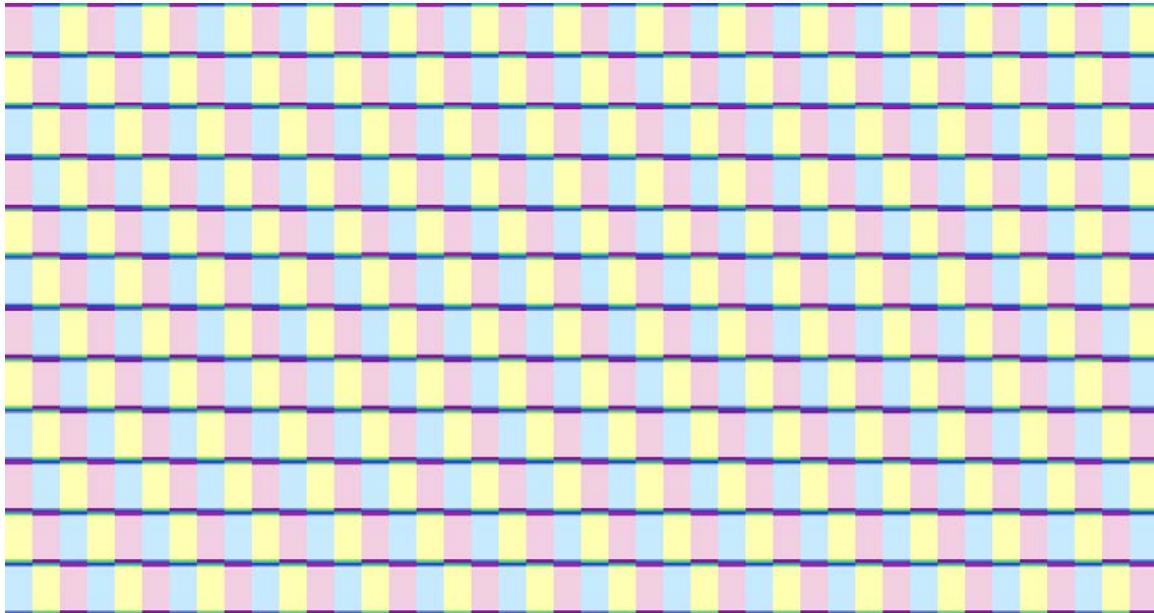
Figure 5.21 Final design file for Scales
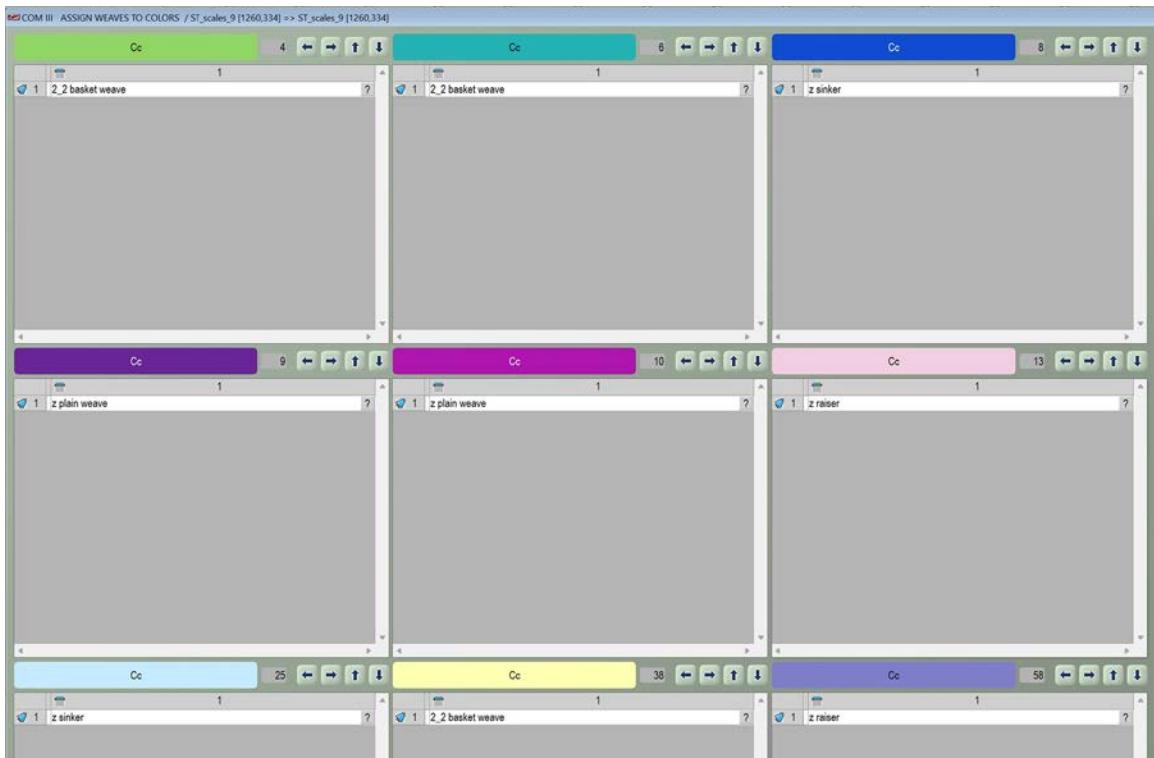
Figure 5.22 Screenshot of final Scales' assign weaves from EAT Design Scope victor (64)

Scales was wrapped around a dress form, low on its hips, to create the image of a floor-length skirt that hugged the body. *Siren* was then placed on the front of the torsos, and the edges were pinned with T-pins, holding it to the hour-glass figure. The center and top of *Siren* remained flat and straight against the body, and the bottom extended over the top of the skirt, allowing the two to sit on top of each other and exaggerating the negative space of *Siren* and the density of *Scales*. A rendering of the final vision for *the Enchanter's* dress was presented along with the textiles and concept board.

Figure 5.23 Photo of Siren

Figure 5.24 Photo of Siren
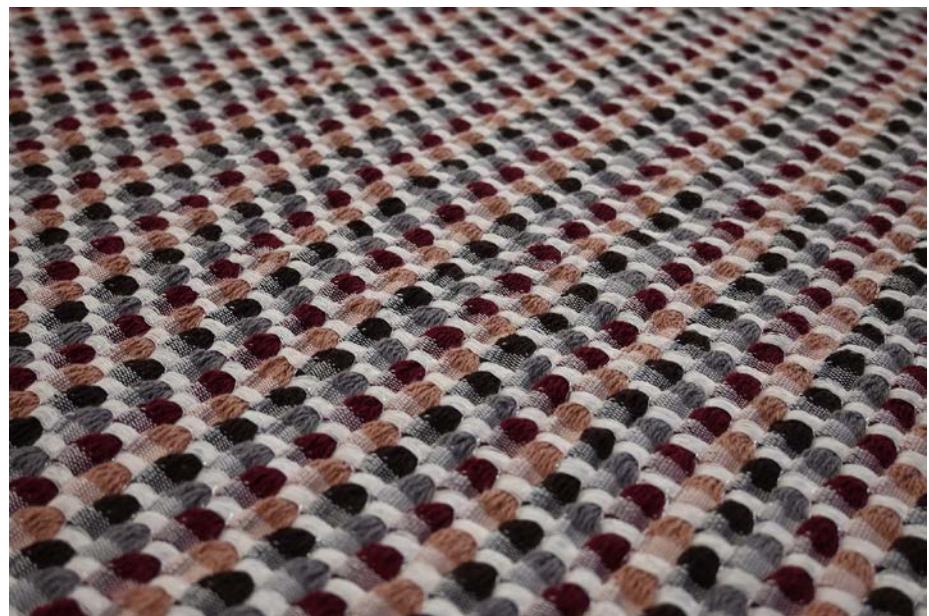
Figure 5.25 Photo of Scales

Figure 5.26 Photo of Scales

Figure 5.27 Photo of Siren and Scales

Conclusion

The unfamiliar and sexual significance of mermaids in medieval and Renaissance art informed the design of *the Enchanter*. Like the seashell, mermaids can conjure up fantastical ideas rooted in their underwater origins. Through the human distortion of their own fears about themselves, mermaids became interpretations of sin, personified specifically as female. *Siren* plays on this idea through the controversial, contemporary trend of the naked dress and its unconventional materials. The cage-like appearance of the corset is a metaphor for the religious and social framework that restricted mermaids, i.e., women, and the stigmas placed upon them. The wire material, strong, sharp, and cutting, indicates the dangers and fears surrounding mermaids, and the negative space represents the understanding of them as seductive temptresses. *The Enchanter* interprets the fantasy surrounding mermaids in Medieval and Renaissance Europe, where they were often alienated, sexualized, and demonized. Whereas this chapter explores the imagination surrounding mermaids, the next chapter, *the Builder*, takes a more practical look at the ways seashells have influenced the physical world.

CHAPTER SIX: THE BUILDER

Overview

As the shell is symbolic of the protective womb, it is also representative of protective structures and the concept of home. Seashells function the same as architecture "by virtue of their ability to regulate porosity to light, water, and air, or to protect the animal from harsh environmental elements" (Lim 18). Their makers, mollusks, can be considered "human-like" architects due to their natural capacity to design and build their own homes with such detail and mathematical perfection (*Arts and Ocean Objects* 68). In the same way that shells influence human understanding of architecture, architecture also influences human understanding of shells. *The Builder* archetype of the *She Shells* is representative of the architectural inspiration that people derive directly from seashells for the purpose of creating protective enclosures that are necessary and suitable for life and the needs of humanity.

Shells and Architecture

Seashells have been used to inspire architecture for thousands of years, whether it's the scroll in Ionic and Corinthian columns or scallop-headed niches. Shell enthusiast, engineer, and ceramic artist of the Renaissance, Bernard Palissy saw the architectural genius in shells when he said, "Do you think that the little concavities and ribs of these shells were made only for ornament and beauty? No, not at all. These are designed to advantage, to augment the strength of these fortresses, as do flying buttresses positioned against a wall as reinforcement" (quoted in Bass 95). The variety of shapes and marvelous patterns found within shells, along with people's need to seek a greater understanding of the world, creates an opportunity for mathematics and aesthetics to merge.

The spiral can be found in many natural formations; however, the seashell is
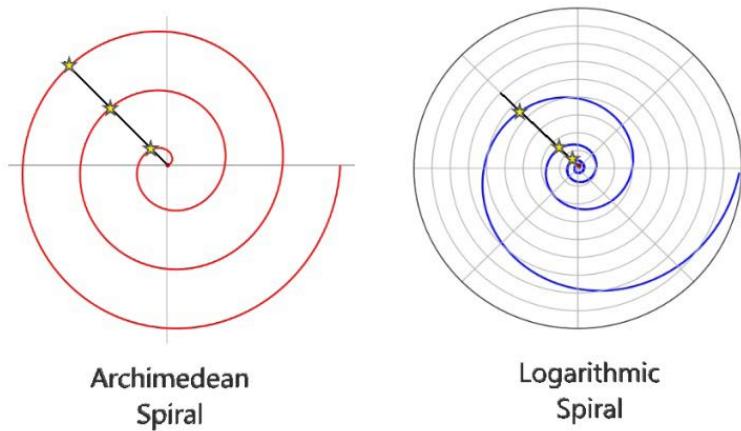
Figure 6.1 Archimedean Spiral vs. Logarithmic Spiral, Tom Rocks Math

perhaps the most notable example. There are two major types of spirals, the Archimedean and the Logarithmic. The Archimedean spiral rotates from the center point in equal distances, whereas the Logarithmic spiral turns at a constant increasing distance with each whorl (Jianpong 10). It is the Logarithmic spiral that appears in the seashell, specifically the nautilus, and was first mathematically defined by Descartes in 1638; the same time period in which there is seen an increase in shell interest (Jianpong 10). The Golden Section or Golden Ratio, 1.61803, is the ratio by which the nautilus shell's spiral increases (Kuberski 87). This ratio determined proportional perfection, which dictated the sixteenth- and seventeenth-century Western standards of beauty (Cattaneo-Vietti 24). The spirals of seashells appear to influence many artists, designers, and architects for their geometric and visual perfection.

Spiral staircases were a favorite architectural feature of the sixteenth and seventeenth centuries and were directly inspired by seashells. Although univalve seashells grow in size from the center axis, the traditional spiral staircase spirals in a cylindrical form, maintaining the same distance from the center axis throughout. This aspect, however, does not affect the seashell's importance to the staircase's

design. The common terminology for a single spiral staircase in Medieval and Renaissance architecture was *scala a lumaca*, meaning snail staircase (Jianpong 12). An example of how architecture has influenced the study of shells is found in the scientific name for the extremely rare and highly prized wentletrap shell, *epitonium scalaris*, which translates to "spiral staircase" (Grootenboer 120-21). Wentletraps appear to be architectural masterpieces of their own, with their perfectly aligned, intricate ridges that accentuate the shell's elegant spire. Leonardo da Vinci was fascinated by the spiral, sketching fossils, seashells, coiling plants, and other instances of spiraling forms (Annesley 932). He designed a double helix staircase, naming it *lumaca doppia*, meaning "double snail" (Jianpong 11).
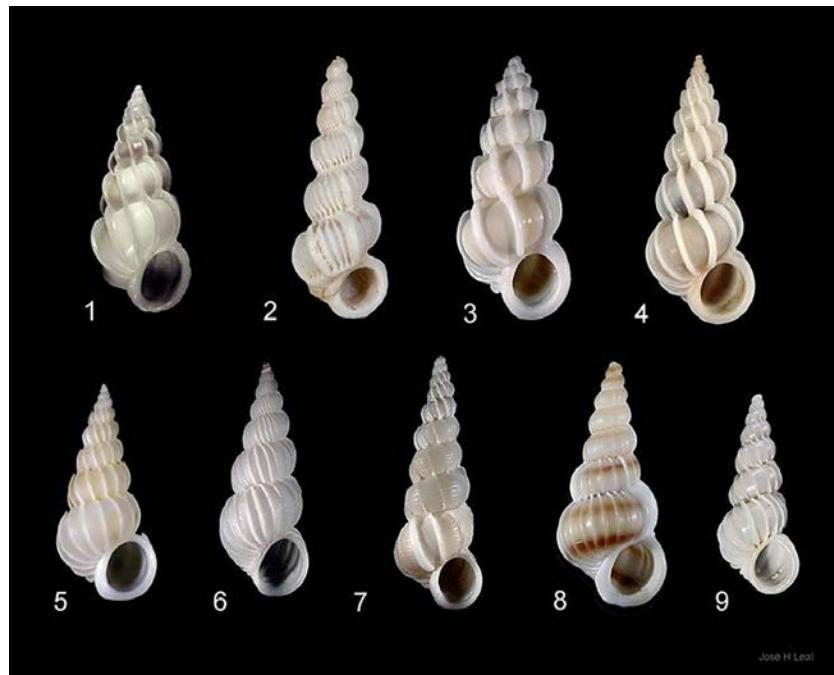
Figure 6.2 Wentletraps of Southwest Florida, National Shell Museum and Aquarium, Sanibel, Florida

Thomas M. Annesley argues that Leonardo da Vinci, himself, designed the Château de Blois staircase, in the Loire Valley of France, though the staircase was started in 1519, the year of da Vinci's death (931). Annesley's evidence includes that Leonardo lived in France between 1516 and 1519, eighteen miles from the

Château. Additionally, French architecture at the time was highly influenced by the Italian Renaissance style. Moreover, Leonardo was left-handed and sketched all his spirals as left-turning, including his shell drawings (Annesley 932). Nine out of ten seashells are dextral, or right turning, but the bat volute shell (*cymbiola vespertilio*) is one species of gastropod in which sinistral, left turning, spirals are not so rare (Scales 63; Annesley 933). These mollusks are native to northern Italy, where da Vinci was from, and the central post of the Blois staircase distinctly resembles the center of the bat volute (Annesley 932-33). The central post of the Blois staircase is similar to the central post of the double helix spiral staircase at the Château de Chambord, located in the Loire Valley, approximately ten miles away from the Château de Blois. This similarity demonstrates the influence of the bat volute shell on spiral staircases in the Loire Valley during that period.

Figure 6.3 Chateau de Blois, unknown photographer, built 1515-24, Blois, France
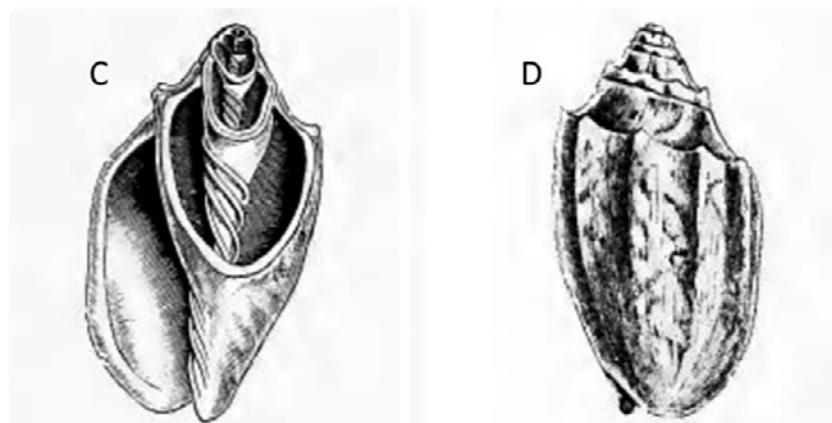
Figure 6.4 *Internal structure of the sinistral (left-handed) form of Cymbiola vespertilio, "Da Vinci's Spirals", Thomas M. Annesley*

Figure 6.5 *The Château de Chambord, the biggest château of the Loire Valley, Road trips around the world, Pinterest*
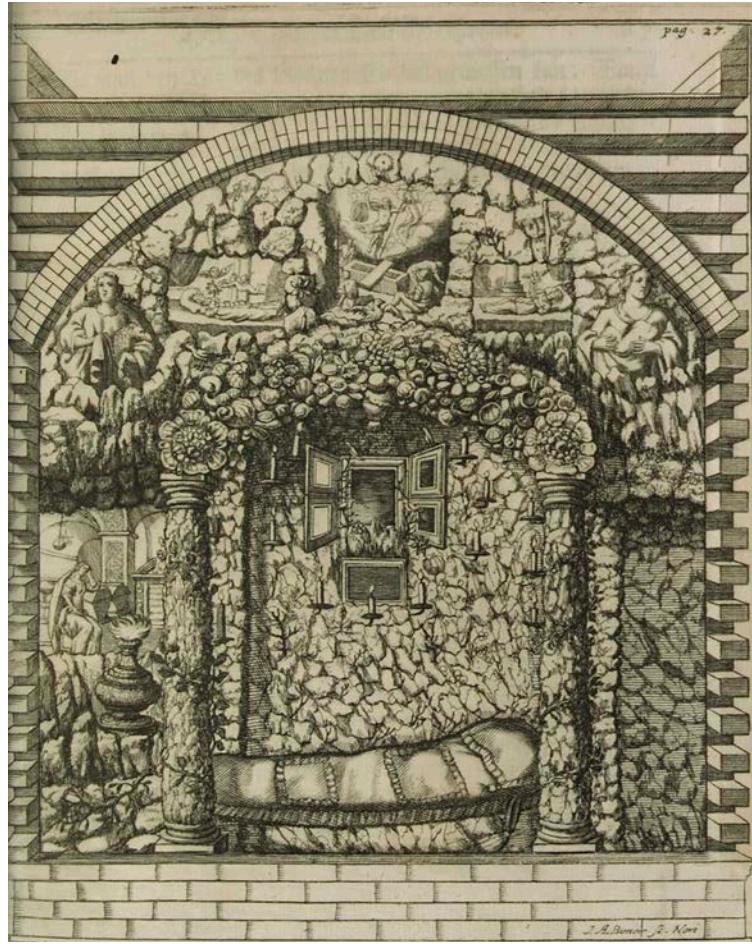
Figure 6.6 Interior of Magdalena Sibylla von
Württemberg's grotto, Johann Alexander Böner, 1680,
Staatsund Universitätsbibliothek, Dresden, Conchophilia

Shells and as Ornamentation: Grottoes

Grottoes became a common feature in both buildings and gardens during the
Renaissance and continued into the eighteenth century, with many using real shells
to cover the walls and ceilings in mesmerizing designs. The widow, Magdalena
Sibylla, had a shell grotto built in 1680 to mourn her late husband, Duke Wilhelm
von Wütemberg, creating a space where she could sit alone, pray, and contemplate
her own eventual death (Watson 128). The shells and other natural materials that
covered the walls depicted Christ's Passion and other family members at their
deathbeds. Others built shell grottoes to show off their wealth and enchant their
guests during social gatherings. English poet John Scott of Amwell had a passion

for gardening and landscaping, which he practiced on his estate. The gardens feature a famous shell grotto, completed in 1773 and rumored to have taken fifteen years or more to build (Stewart 25). Like shells, grottoes can serve many purposes, offering intimate spaces in a larger setting where people could hold parties, hide away to privately socialize, contemplate in solitude, or engage in religious prayer.
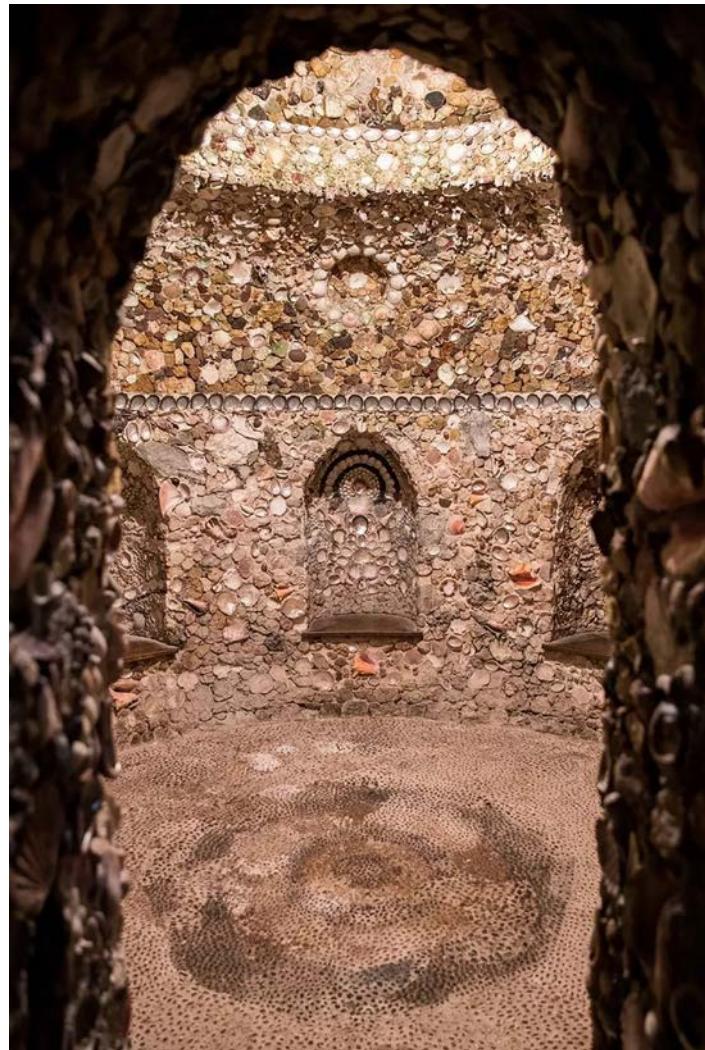
Figure 6.7 Inside Scott's Grotto, Alison Jenkins, 2018

The seashell also had a significant influence on the Rococo design of the eighteenth century. The term Rococo, having a few different theories of origin, seems to ultimately be a hybrid of the French word *rocaille*, meaning rock or shell encrusted specifically in reference to grotto walls, and of the Portuguese word

barocco, meaning irregular pearls (Newman 131). In *Sun, Shell, Mirror: Hiding Spaces in the Court of France*, Edward Houle details how the shell dictated the visual style of Rococo:

> *The shell is ultimately a shelter; in Meissonier and Lajoue's engravings, see how the centres of the shell forms are empty compared to their surroundings, as though they are meant for the occupation of the viewer's mind and body; rocaille composition is most interested in the shell's concavity, in its sensual, feminine embrace where one can recline in bliss, barely conscious and untroubled as the shell's original mollusc inhabitant (49).*

Figure 6.8 Plate from Book of Vases, Jacques de La Joue the Younger, 18th century, The Metropolitan Museum of Art, New York

Sensuality exists in every inch of Rococo, where even furniture was designed for a woman's posture to form the "C" and "S" shapes found in shells, which were so critical to Rococo's aesthetic. The design style was born out of nobility's interest in materialism and sensual pleasures, which was brought on by the rise of Libertinism in the eighteenth century, rejecting the rigidity and sensibility of Restoration culture (Houle 54).

Figure 6.9 The Shell Cottage, Yann Audino, CMN

To accommodate the new interest in sensual pleasure during the Rococo period, private quarters began to show up in residences. These interior rooms provided spaces for aristocrats to escape ennui and indulge in the escapism of luxury and beauty, as did gardens and grottoes. French royals went so far as to build *petite maisons* (little houses) or garden pavilions, meant to create intimate, contained environments centered around freedom and expression (Houle 56). Marie Antoinette's well-known *Hameau* is an example of a *petite maison* built on the grounds of Versailles to sensorially and physically mimic a pastoral setting (Houle

118). The Princess de Lamballe, a friend of Marie Antoinette, lost her husband at a young age. Her father-in-law, the Duke of Penthièvre, a grandson of Louis XIV, built her a *petite maison* known as the *Chaumière de Coquillages* or Shell Cottage (DeLorme 282). The unremarkable shack houses a surprising interior entirely encrusted in shells, laid out by color to create a wainscoting effect that surely dazzled its visitors, creating an atmosphere of fantasy and visual stimulation. Its excessiveness displays an innovative and sophisticated use of shells as ornamentation in the Rococo style.
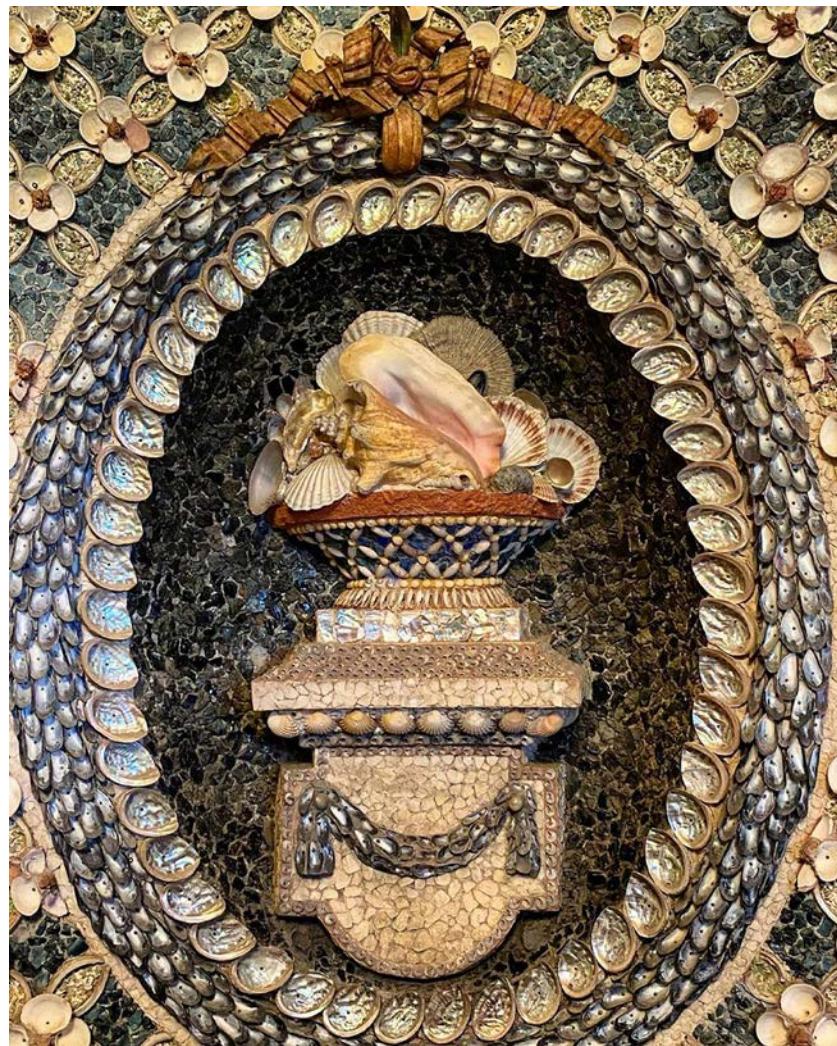
Figure 6.10 Ornate Shell Design Decor from Shell Cottage, World of décor, Pinterest

Figure 6.11 Shell House, Emannuel Delavenne, Pinterest

Seashells provide a home that embraces their mollusk creator and the other organisms that take up residence. This protective embrace is found in the simplest of structures as well as the grandest of buildings. It can be felt in space, furniture, and interior décor. The spiral staircase represents a kind of space unique to a seashell's interior. The Solomon R. Guggenheim Museum in New York (1956-59) represents Frank Lloyd Wrights' interpretation of the logarithmic spiral found in the nautilus shell and "when someone asked him why he had used a shell as model, said: It is the home of a lower order of life, but it has what we lack, an inspired

form" (cited in Cattaneo-Vietti 85). Even as an atheist, Wright held the shell in high esteem, saying, "I do not understand those who see the presence of God in Nature, I only spell it in the shells" (quoted by Cattaneo-Vietti 24). As Frank Lloyd Wright suggests, the human application of the animal formations into their spatial surroundings marks the reverence they hold for the animals' natural abilities.
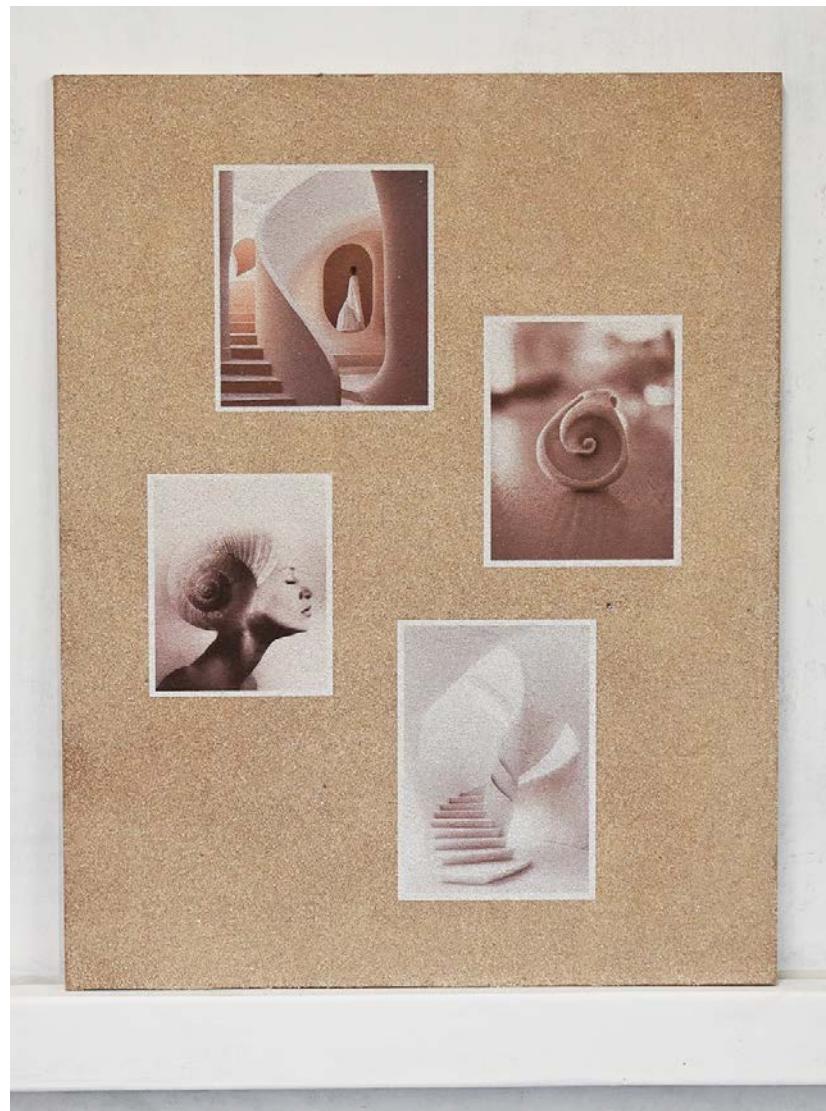
Figure 6.12 Concept board for the Builder

The Builder

The Builder archetype of *She Shells* is the homemaker and architect. She provides a protective enclosure and an intimate setting. She is strong, supportive, and

private. The garment design functions similarly in terms of its shape and function. It includes an oversized opera coat that spirals around the figure, encompassing her in a protective casing. The coat is structured in its material and technique, and follows strong, curving lines that reflect those of the spiral staircase. It provides shelter from the elements with its wool yarn, enveloping the wearer in a warm and soft embrace. The design utilizes Soft Sand and Heavenly Pearl colors, which create a constructive and earthy aesthetic, embodying the functionality and practicality of *the Builder* archetype. The inspiration images for the feeling of the fabrics and design came from A.I. architectural renderings of turning staircases and

Figure 6.13 Fashion design for the Builder

surrealist interpretations of the protective nature of shells. The fashion design inspiration comes from Schiaparelli's Spring 2022 Fall Couture Look Five, 2023 Couture Look Three, and many coats from Ashi Studio's 2024 Fall Couture collection. *The Builder* is comprised of two textiles: the main one, named *Home*, for the opera coat, and a coordinate for an accompanying dress intended to be worn underneath the coat, referred to as *Spiral*.
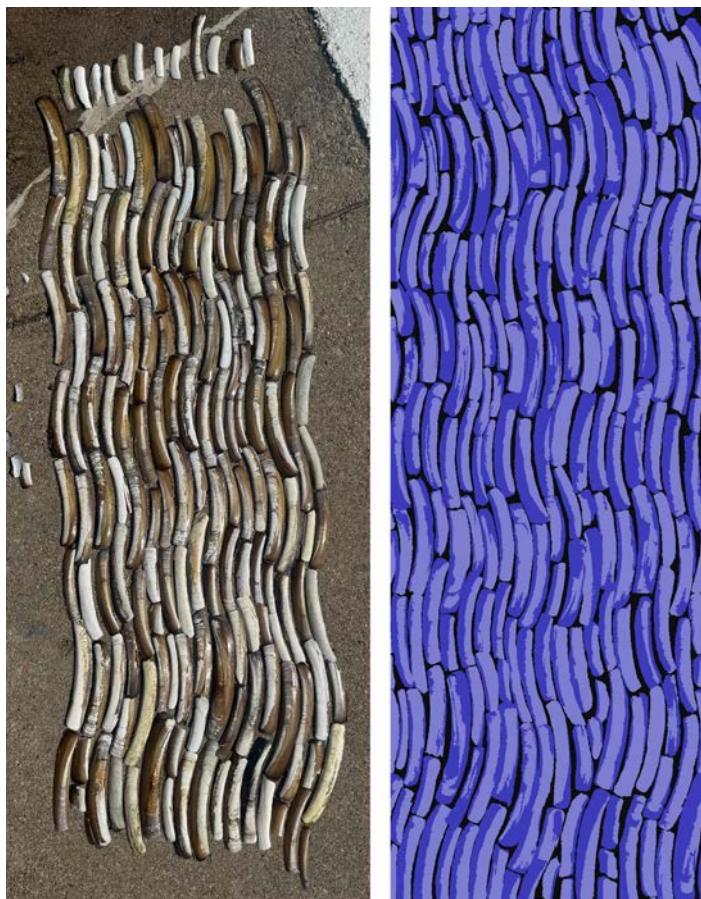
Figure 6.14 Photo of razor clam exploration and design file for Home

Home was inspired by the razor clam shells, named for their resemblance to barber razors. Razor clams are bivalve mollusks that make their homes by burying themselves deep in the mud. A pattern was developed through explorations with roughly 150 individual shells collected on the beach in Connecticut. Their curves were aligned in consecutive wavy rows, building them up as if they were bricks.

Razor shells are particularly inspiring and entertaining to play with because of their uncomplicated and elongated forms, as well as their beautifully slight curve. As the pattern was conceived, a vision of ridges following the curving motion of the shells emerged. The best way to create this ridged surface was with a "draw-in" technique.

Figure 6.15 Photo of yarns used in Home

Draw-in through felting methods seemed to be the most thoughtful way of evoking ideas of a protective structure. Felted wool offers the stiffness and insulation necessary for protection from the elements. As one of the most absorbent natural fibers, it can keep moisture away from the skin. It also forms a dense and solid material reminiscent of the solid, ceramic, or stone-like exterior of a shell. The pattern was transitioned into a 14-by-40-inch repeat to be woven on the jacquard loom, J1, with the white cotton warp. By reducing the razor shell motifs to two colors, the shells could be woven with two shades of 15/1 Nm wool to render their form: Soft Sand (Selector 1) and Heavenly Pearl (Selector 2). The ground behind the shells was left as a third color and served as a tacking area using a natural 2/45

Nec wool (Selector 3).

Figure 6.16 Screenshot of Home's assign weaves from EAT

The weaves assigned to the design were based on a previous trial of felting a double
cloth fabric where the face of the fabric was left with wool running in long floats
and a cotton wove on the back in a small satin structure. The cotton came to
the face in tiny areas to tack to the face, and when the face shrank and the back
remained, creating a dimensional, pillowy texture on the back. The same types of
structures were applied to *Home* during its early trials, except that *Home* had three
weft systems, one for each selector. Satin structures made up the face of the fabric,
allowing more space for the wool picks to felt into one another. Weaving the same
structure on the back, but with different yarns, resulted in the fabric maintaining
its form on the back.

Figure 6.17 Photo of Home's front and back, unwashed

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The warp was split in two. One color of the razor shells was assigned to have the Soft Sand wool weaving on the face and the natural 2/45 wool weaving on the back, while the Heavenly Pearl was floating in the middle. The other color of the razors continued to have the natural 2/45 wool weaving on the back, but the Heavenly Pearl wool was on the face, and Soft Sand floated in the middle. In the ground areas of the design, the warps switched, and the back yarn came to the face, tacking the layers between shell shapes, while one felting yarn wove on the back and the other floated. Because the felting wools were floating in the middle, they shrank and pulled the razor shell shapes inward, creating slight ridges. Meanwhile, the natural wool on the back was not affected, unlike the felting wool, which created a quilted texture, tacking in the pattern's reverse.

Figure 6.18 Photo of Home wash trials

Once the trials were woven, they were processed as felting trials. Washing it with minimal agitation made for optimal results. Trials were conducted with different-sized satins on the face. High agitation and larger satin weave structures caused

more intense shrinking, resulting in an almost cardboard-like stiffness to the material. However, this also caused the two colors to blend so far into each other that the design's imagery was lost. Smaller satins and low agitation, on the other hand, maintained the color effect while still felting into a practical and luxurious material. By keeping its width, the back continued to produce its dimensional, quilt-like texture, making the fabric as interesting on the back as it was on the front, and thus making it reversible.

Figure 6.19 *Studies of water, Leonardo da Vinci, c. 1510-12.*
Royal Collection Trust, UK

Knowing that the coordinate should be a single cloth to keep *Home* the focus of the pair, *Spiral* was designed out of the spiral drawings of Leonardo da Vinci. His studies of the movement of water, which display swirls on top of swirls, were particularly interesting. Removing the paper from crayons, they were laid flat against paper and dragged in spiraling motions. The buildup of wax in layered areas created a natural shading effect. Using the "color range" function in Photoshop, the white areas were removed from the mask. Thus, when the motifs were placed on top of each other to create the repeat, they produced a layered effect, as if they

were all drawn together on the page.

Figure 6.20 Crayon marking and design file for Spiral

The 14-by-28-inch crayon repeat was reduced to a three-color design file. Without any cleaning, most of the repeat consisted of individual pixels, which were perfectly arranged for raisers and sinkers. Raisers were assigned to the darkest areas of crayon, causing the white warp to show, and sinkers were assigned to the lighter areas of crayon, which caused the weft to show. This was because there were more areas of light than dark; therefore, to maximize the color potential of the weft yarn, sinkers needed to make up more of the face than raisers. The individual and limited areas of pixels removed the need for more complex weave structures, hence relying solely on the pixelation to bring forth the imagery.

The ground appeared occasionally, throughout the design as large non-pixelated areas where well-constructed structures needed to be placed. Initially, over-the-top, hand-drawn weave structures were tried in those spots, but they appeared extremely busy in the design. A regular filling faced sating was then chosen. A design file was created where the original images were reduced to four colors:

darkest for raisers, lightest for sinkers, white for ground, and a medium color. A filling faced crowfoot structure was assigned to the medium color when tried. This structure provided secure construction as well as a nice balance of raisers and sinkers to complement a middle ground. After trials were compared, the design file with four colors was preferred.
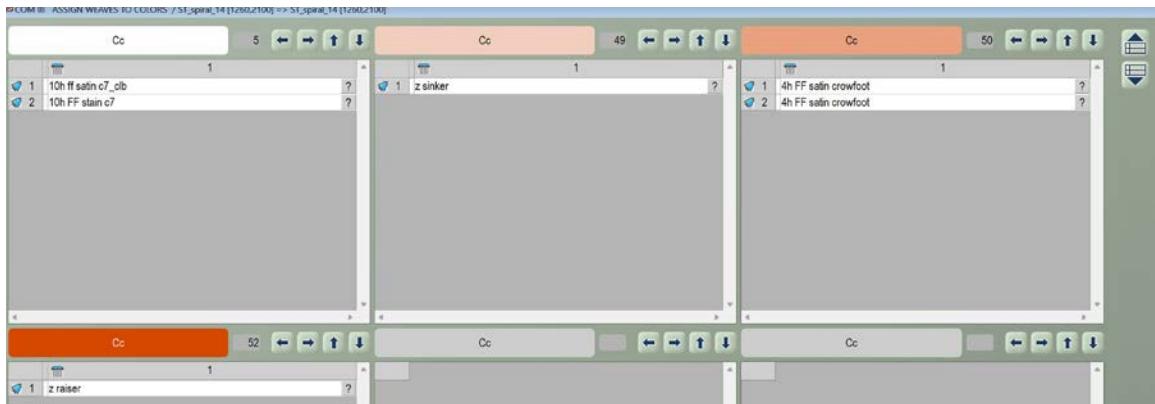
Figure 6.21 Screenshot of Spiral's assign weaves from EAT Design Scope victor (64)

Initially, color trials were conducted using both solid and pick-and-place box motions. It seemed that because *Home* was so high in value, *Spiral* should be a neutral color of lower value, but not dark. Furthermore, the reliance on the weft yarn to make up the visuals of *Spiral* required it to be low enough in value that the images did not disappear into the white warp of the J1 loom. None of the color trials stood out as perfect. Part of the problem was the usual challenge of achieving the proper tone of neutrals through color mixing. As the end-use of the fabric was considered in greater depth, an idea emerged to incorporate some luster and/or sparkle into the design. After several box motions with different proportions of three selectors, a final decision was made to use the 18/1 Nec Soft Sand cotton (Selector One) with a lustrous viscose-polyester Sea Rose 1/34 Nm (Selector Two) and thin purple and black 2/132 Nm metallic (Selector Three), in a weft repeat of 1-1-2-1-3. This combination achieved the desired lower value neutrality while adding a touch of extravagance and magic to the design.

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Display of heald frame pattern

Pattern name: ST_spiral_14
SizeX : 1260
SizeY : 2100
Position X: 697
Position Y: 483

Rhythm Sequ. Colors
1,2,1,1,3
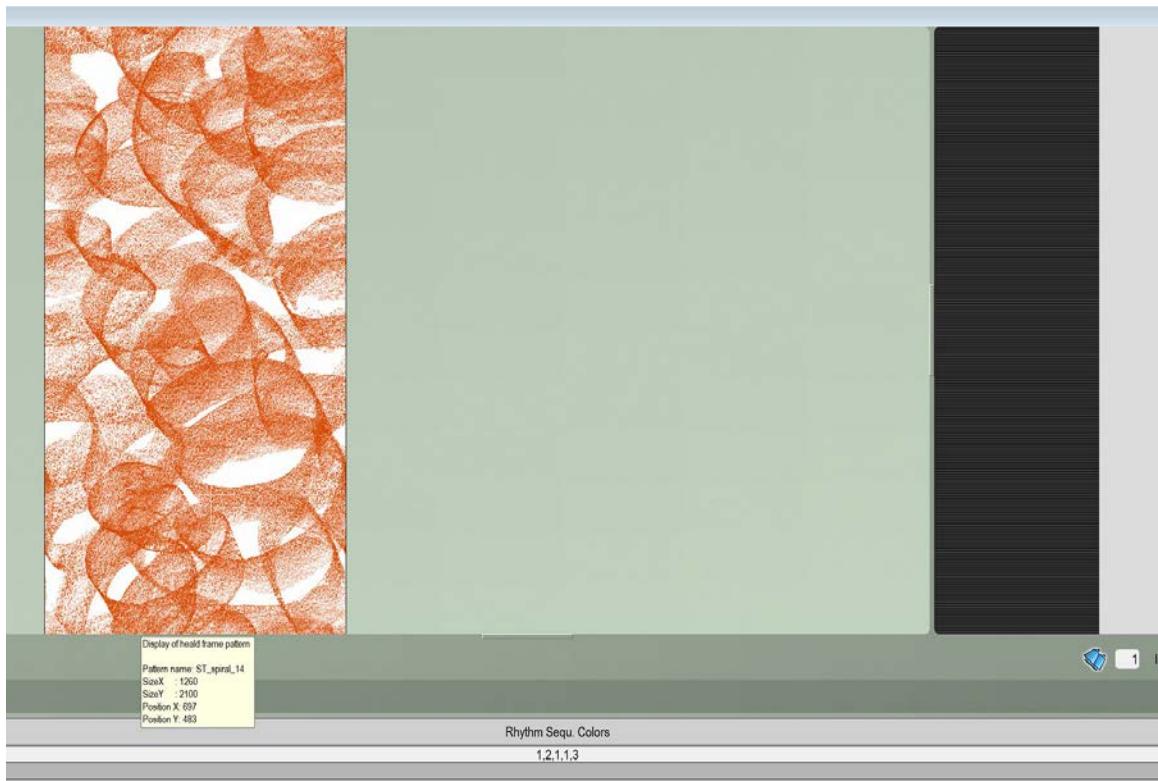
Figure 6.22 Screenshot of Spiral's box motion from EAT Design Scope victor (64)

Figure 6.23 Photo of yarns used in Spiral

Five yards of *Home* were woven for the final design to accommodate the shrinkage. It was washed under the conditions that the trials proved best. Afterward, it was separated into smaller pieces and draped over a dress form, where folds were pinned to give an idea of an oversized and exaggerated coat that encompassed the figure. Underneath this, the final *Spiral* fabric was draped into a floor-length dress. Another drawing of the finished design was made to correspond to the concept board and fabrics featured in the final showcase.

Figure 6.24 Photo of Home and Spiral

Figure 6.25 Photo of Home

Figure 6.26 Photo of Home

Figure 6.27 Photo of Spiral

Figure 6.28 Photo of Spiral

Figure 6.29 Photo of the back of Home

Conclusion

Throughout many periods in history, shells have been used as architectural references. They are believed to be created by the mollusk to provide it shelter and protection from external threats. Their thick, hard layers are built over the life span of the mollusk as it grows, adding to their homes to make room for their expanding life. The hermit crab does something similar, by renovating the interior chambers to fit their bodies more comfortably, until it's time for them to move out. The incredible ability of animals to adjust their homes to suit their own needs is something humans are all too familiar with. This includes building their home

from the ground up, like the mollusk, to making changes to a temporary home, as renters might do. *The Builder* takes from this incredibly human habit and the universal need for safety and privacy. She draws inspiration from the shells' spiral feature, which has had a profound impact on architectural history, influencing renowned thinkers and makers such as Leonardo da Vinci and Frank Lloyd Wright. The seashell's application in architectural design can be found over the course of thousands of years. Still, it should not be forgotten that every shell carries a story of death with it, a topic that will be explored in the next chapter, *the Reaper*.

CHAPTER SEVEN: THE REAPER

Overview

According to Ancient Greek and Roman beliefs as well as Christian beliefs, the sea is the realm of the dead, the netherworld, or the underworld (Lee 7). Its depth and darkness, incredible power, and mysteries, spark fear, as well as curiosity in humankind. The danger and fear manifested into dark sea myths and stories of sea monsters. In *The Tradition of Christian Sea Symbolism in Medieval English Poetry and Milton*, Insung Lee discusses the interchangeability of the words hell and *tehom* (Hebrew for abyss), "in the New Testament, the Greek word *abussos*, which is a translation of *tehom*, is used to mean the region of the dead, in particular the abode of evil spirits" or hell (7). In his poem *Lycidas* (1637), Milton uses death by drowning as a symbol of damnation, describing the sea as "remorseless" (cited in Lee 91). The dangerous sea, the bodies it claims, and the morbid nature of the shell are interpreted into *the Reaper* of *She Shells*, the bringer of death.

Shells and Death

Shells, like skeletons, exist far longer than the life that once occupied them. The passing of a mollusk leaves behind its exoskeleton, which can be categorized along with other animal or human remains as signifiers of death. The shell's skeletal nature and emptiness represent a life no longer attached to the form. Many factors can contribute to the death of mollusks. Fishing and the consumption of seafood are vital elements to all coastal people around the world, which in turn leaves behind countless numbers of empty shells. The excess of material resulting from human eating habits can suggest one reason why they became common tools and forms of ornamentation throughout human history. Work associated with the sea has always been surrounded by danger and fear, as seen in stories like *The Odyssey*, and this sentiment holds true in modern times. The collecting mania of the Renaissance period brought more ocean objects into Europe, increasing consumer

demand for these items, which drove men towards more dangerous missions, often leading to death.

Figure 7.1 Fish Market, Frans Snyders, c. 1618, Kunsthistorisches Museum Wien, Vienna

The enjoyment of aphrodisiac oysters increased in the seventeenth and eighteenth centuries, as evident in the numerous tablescape paintings by artists such as Jan Davidsz de Heem, Osias Beert the Elder, Frans van Mieris, and Jan Steen (Cattaneo-Vietti 81). Paintings of fish markets also displayed vast scenes of dead sea creatures, such as one painted by Frans Snyders (fig. 7.1), displaying a vast array of seafood, their bodies lying limp across the table and ground in a somewhat tragic and horrific way. *Still Life with Fish and Oysters* (c. 1670-80) by Giovanni Battista Recco (fig. 7.2) portrays an especially dark and slimy depiction of fish and shellfish remains on a table. Marisa Anne Bass describes the painting in all its gory detail in *Conchophilia*, remarking on the idea of a foul odor radiating off the bodies, the color and sheen of the fish carcasses, the cavities of the pair of shells which appear like the eye sockets of a skull, and the "vacant eyes" of the fish that

"seem to mourn the loss of their underwater realm" (90). William Shakespeare also used this type of dramatic language about the bottom of the sea in *Richard III* (1592-94), describing the reflection of gems occupying the eye sockets of skulls lying with bodies devoured by fish at the bottom of the sea (cited in Bass 89).

Figure 7.2 Still Life with Fish and Oysters, Giovanni Battista Recco, 1670-80, Uffizi, Florence

An example of shells being used as deadly images that help tell a story is found in the painting *Perseus and Andromeda* by Joachim Wtewael (fig. 7.3). Wtewael uses these shells to symbolize desire, danger, and death. Andromeda's pale nude form takes center stage in the painting. Her beauty and sensuality are reflected in the brilliant pink conch underneath her foot. However, upon closer examination, a "carpet of shells" and bones lies masked in darkness (Bass 89). They tell of the dangerous sea monster who keeps Andromeda captive, and who Perseus must face to save her. Bass points out, "the analogy between exoskeleton and corpse is

condensed in the juxtaposition of the Strombus gigas [conch] with the glistening skull beside Andromeda's right ankle, the deep cavities of its nose and eyes parallel to the conch's seductive interior" (Bass 89). Like in the *Still Life with Fish and Oysters*, the images of the shell's interior chamber and orifices of the skull are reflective of one another in their abandoned, lifeless forms.
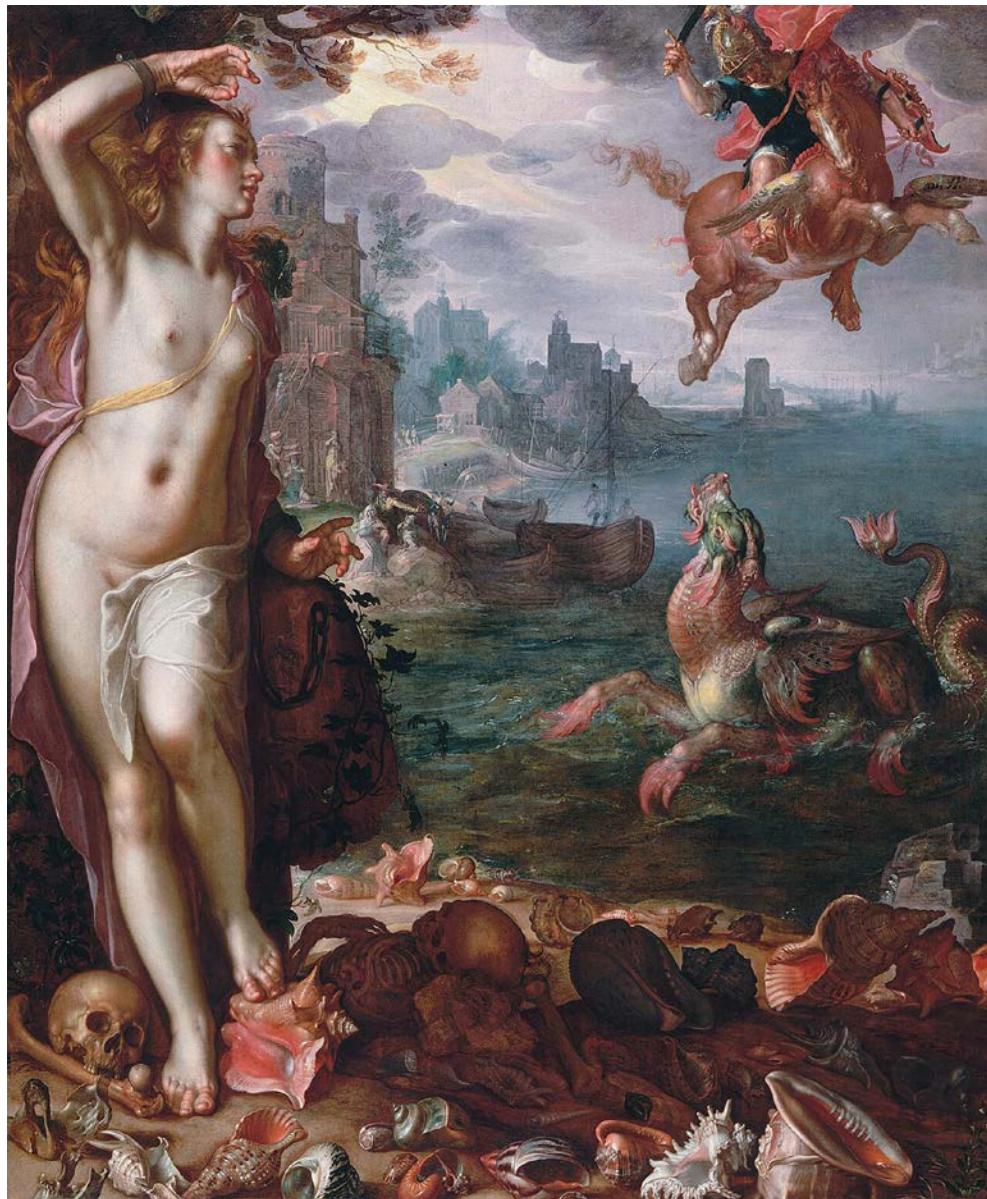
Figure 7.3 Perseus and Andromeda, Joachim Wtewael, 1611, Musée du Louvre, Paris

The dangers that Perseus must face when battling the sea monster "are to some extent comparable to the dangers Dutch seafarers had to overcome to acquire foreign commodities like the shells at Andromeda's feet" (Art and Ocean Object 114). The hunt for exotic marine treasures coaxed men out to sea, where they must face sea monsters, drowning, and death. The search for exotic shells, pearl-bearing mussels, and flamboyant corals was no small feat. In *Naturalis Historia*, Pliny the Elder (79AD) describes rocks, sharks, and hand-severing shells as the dangers that

Figure 7.4 Coral Fishers (Amphitrites' Kingdom), Jacopo Zucchi, c. 1585, Galleria Borghese, Florence

men could face in the retrieval of pearls, and yet despite these dangers, "women will not banish these gems from their ears!" (9.55). Jacopo Zucchi's painting *The Coral Fishers* (c. 1585) (fig. 7.4) and Alessandro Allori's *Pearl Fishers* (1570-72) (fig. 7.5) both show beautiful women basking in the luxury of pearls, coral, and shells, while in contrast, the background depicts the difficult task taken on by men to hunt them.

Figure 7.5 Pearl Fishers, Alessandro Allori, 1570-72, Palazzo Vecchio, Florence

The understanding of coral during antiquity and medieval Europe was that it was "a brilliant, vermillion-colored sea shrub or branching tree that transforms into a precious stone upon exposure to air" (Kelley 116). Coral's blood red color, shape resembling arteries, and resistance to decomposition made it an appropriate symbol of the Passion of Christ (Kelley 123). It was also for this reason that coral often appeared in portraits of Jesus and Mary, symbolizing their divinity, protection,

immortality, and imperishable bodies which ultimately ascended into heaven at their deaths (Kelley 116). As seen in many portraits of the Middle Ages and Renaissance, coral was worn for its protection of life and healing of injuries (Kelley 124). It's "infinite capacity for skeletal endurance contrasts with the vulnerability of the human body" (Kelley 134-5). Coral represents the transformative powers of the sea, claiming lives but also a receptacle that delivers the dead at Resurrection, as declared in Revelations "And the sea gave up the dead that were in it, and death and hell gave their dead that were in them" (quoted in Lee 8).

William Shakespeare uses coral and pearl imagery in his final play, *The Tempest* (1610-11), Act 1, Scene 2, when Ariel sings about the shipwreck in which Ferdinand's father, Alonso, drowns:

> *Full fathom five thy father lies.*
>
> *Of his bones are coral made.*
>
> *Those are pearls that were his eyes.*
>
> *Nothing of him that doth fade*
>
> *But doth suffer a sea change*
>
> *Into something rich and strange. (397-402)*

Shakespeare describes Alonso's bones turning to coral and eyes becoming pearls. This "sea change" works to preserve his remains in wait of his subsequent reanimation after his spiritual transformation. The petrification of Alonso, as well as the other tragedies in *The Tempest*, are suspended in time, where the characters can revisit the past and seek repentance, forgiveness, and restitution (Kelley 116). As coral represents the resurrection of Christ, Shakespeare uses it to describe the resurrection of Alonso.

Figure 7.6 Madonna Di Senigallia, Piero della Francesca, 1472-75, Palazzo Ducale, Urbino

Giorgio Vasari's interpretation of *Perseus and Andromeda* (c. 1570) (fig. 7.7) differs slightly from Joachim Wtewael's version. In Vasari's, Perseus has already slain the sea monster with the head of Medusa. In *Metamorphoses* (8 AD), Ovid writes that afterwards Perseus places the head on the ground on top of seaweed and plants, which turn to coral (Ovid 128). Vasari depicts this in his painting, where red coral sprouts from around the head of Medusa. The color and form of the coral blends into blood dripping from her severed head, drawing a link between branches of coral and the interior of the human body. In *Metamorphoses*, once the sea nymphs see this, they take it upon themselves to scatter "the seeds from the plants through

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the waves. Even now corals have the same nature, hardening at a touch of air, and what was alive, under the water, above water is turned to stone" (Ovid 128). Coral displays transformative power, whether from life to death, death to rebirth, or suspended in death.

Figure 7.7 Perseus and Andromeda, Giorgio Vasari, c. 1570, Palazzo Vecchio, Florence

From skeletal shells, dangerous pearls, and transformative coral, these fantastic underwater materials were used in the Middle Ages and Renaissance to symbolize different aspects of death. The shell easily fits in among human and animal bones as images of remains. Mollusks like fish are harvested for culinary purposes, bringing about another faction of death, more practical than terrifying, but death, nonetheless. The desire for shells, pearls, and coral coaxed men to risk their lives to hunt them. Finally, coral was believed to prevent decomposition and sickness in the human body, as seen in the protection and resurrection of Alonso in *The Tempest* and Jesus.
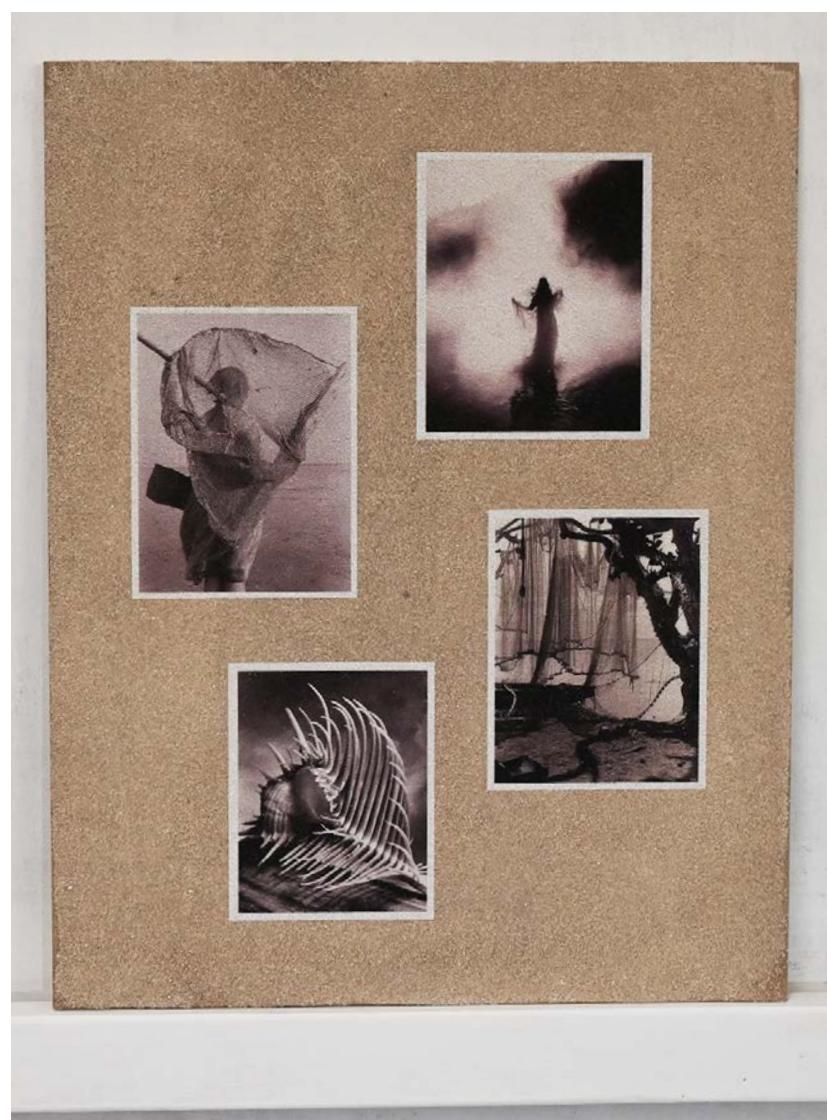
Figure 7.8 Concept board for the Reaper

The Reaper

The *She Shell's* archetype representing death is the collector and harvester of souls, known as *the Reaper*. She is perilous, dreadful, and inevitable. The design holds a sense of mourning with a funerary veil and danger with the jagged spikes protruding from the surface of its skirt. The look is skeletal in its material, ominous in its shrouded veil, dreadful in its deep, rich color, and dangerous in its netting and piercing texture. Its Tidal Red and Bone Grey colors evoke the bodily features that inspired *the Reaper*, as well as associations with toxic red tides, coral mythology, and exoskeletons. Sea Star Violet complements these colors, tying them
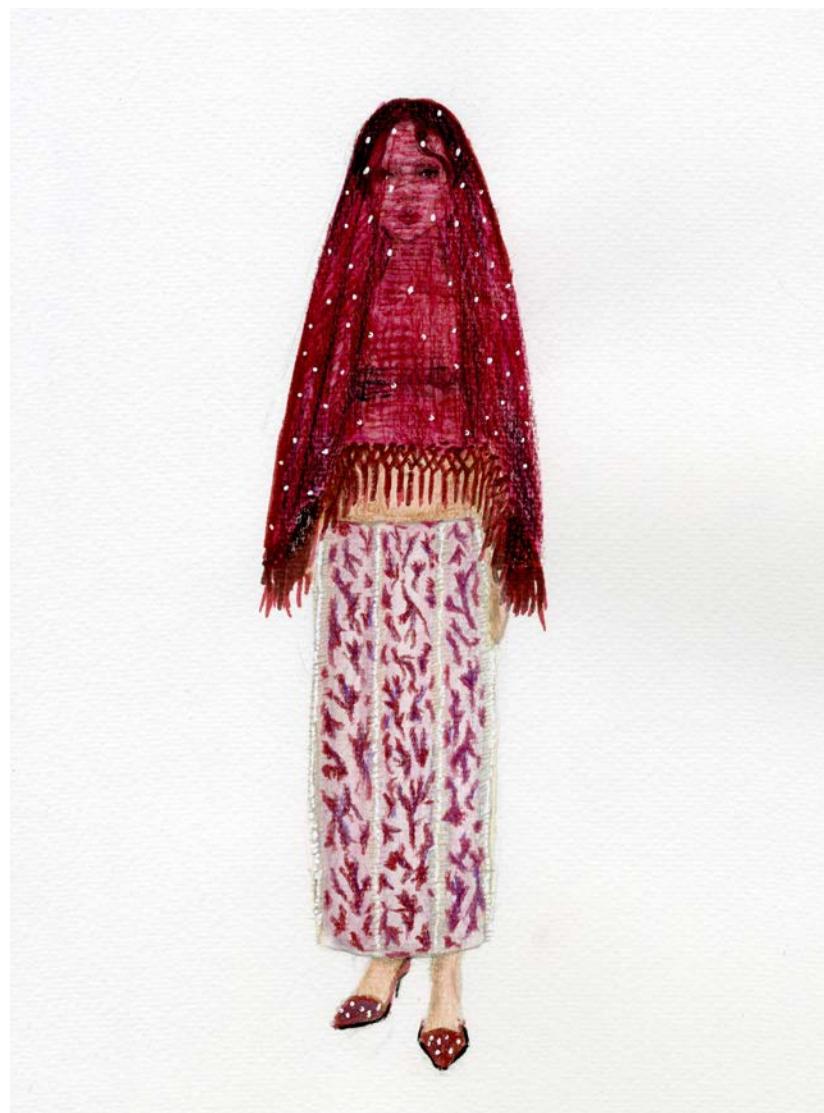
Figure 7.9 Fashion design for the Reaper

into the collection and incorporating softness into the otherwise treacherous concept, which speaks to the soothing aspect of death's inevitability. Inspiration from fishing nets, ominous fog, and the paragon of skeletal seashells, the murex (a shell consisting of long, thin spikes protruding from the surface), contributed to the design of *the Reaper's* fabrics. The design of the skirt takes reference from Andrea Damo's Spring 2023 ready-to-wear runway show. Meanwhile, Jean Paul Gaultier's Spring Couture 2025 Looks 12 and 23 and Schiaparelli's Look 29 from the same season, influenced the design of the veil. *The Reaper* consists of two textile designs: *Skeleton* and *Fishing*. *Skeleton* makes up the skirt and top, while *Fishing* serves as the veil.

Figure 7.10 Photo of PVC melting trial for Skeleton

Through various explorations of weaving with PVC, one design stood out as an excellent interpretation of the backbone or the murex shell. The concept involved reserving a space in a jacquard design where PVC weft floats for roughly three to four inches. Once it is off-loom, the PVC is crudely cut up the center of the floats,

and the fabric is folded so that the two rows of clipped PVC weft stick outward. The woven area behind the floats is then folded inwards between the main body of the fabric. After being pinned in place, a heat gun is directed along the clipped PVC fold. The idea is to melt the PVC together into spikes. The melting does not completely disintegrate the PVC, but brings it to its glass-melting point, where the plastic begins to soften and transform. When the fabric is then unfolded, the clipped PVC wefts cling together in protruding spikes.

Figure 7.11 Photo of seaweed pattern and design file for Skeleton

This technique was applied to the design of *Skeleton*, while its main body used a pattern inspired by coral. A pattern was developed on the beach in Connecticut using dried seaweed found there, laying out pieces with even spacing in the sand. This image was put into a 14-by-20-inch repeat and color reduced so the seaweed florets were three colors and the ground was one color. A vertical area was designated along the center of the repeat where the PVC floated. The color of the PVC chosen was Bone Grey because it was the most reminiscent of skeletons and death. It was light enough to capture the idea, but the color was also very dull and

diminished, reflective of death. The jacquard was woven on the J1 loom with white 60/2 Nec cotton at 90 ends per inch.

Figure 7.12 Photo of yarns used in Skeleton

Early trials were woven with two weft systems, one for the PVC (Selector One) and a second for a yarn (Selector Two). Through color trials, a variegated Sea Star Violet 6/101 Nm (or 6/60 Nec) cotton was preferred for Selector Two. However, the entire design still lacked the depth and darkness that were vital to the theme; therefore, another weft system was added for a Tidal Red 40/2 Nec mercerized cotton (Selector Three). This yarn was so thin that its color did not hold up in the design.
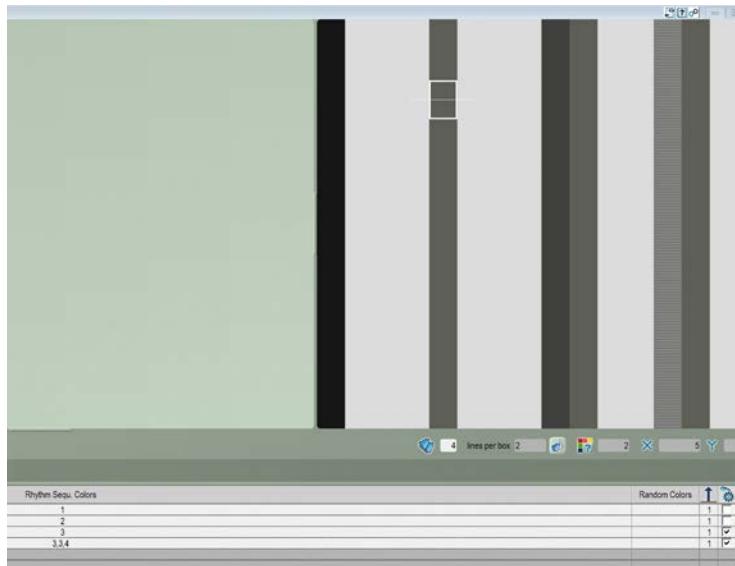
Figure 7.13 Screenshot of Skeleton's box motion from
EAT Design Scope victor (64)

To increase the impact of this dark color, a fourth weft system was added, which also ran Selector Three. The regulator was turned on for both Weft Systems Three and Four, which stops the let-off and take-up speed when those picks were thrown, essentially weaving them as one and increasing the picks per inch without altering the design dimensions. A few variations of weft systems and regulators were tried before landing on the four weft systems and two regulators.

Figure 7.14 Photo of Skeleton, before cutting and melting PVC
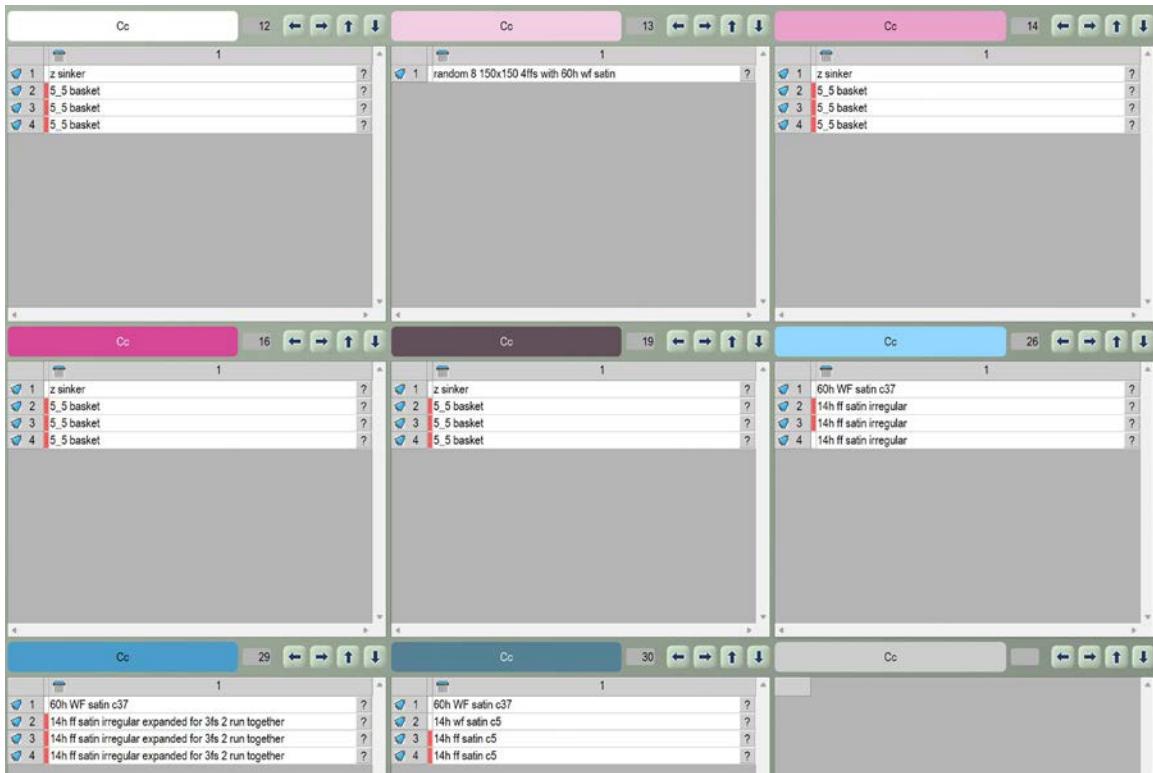
Figure 7.15 Screenshot of Skeleton's assign weaves from EAT Design Scope victor (64)

Because this design still needed to have darkness, the PVC was pushed to the back in the areas of the seaweed motifs, so that only the Sea Star Violet and Tidal Red cotton yarns were woven on the face in those areas, within the three colors of the seaweed different combinations of Sea Star Violet and Tidal Red yarn woven together in filling faced satin structures. The color effect of this didn't necessarily follow the shading of the seaweed motifs, but added visual interest to the otherwise solid silhouettes. The PVC now floated on the face in the central areas and on the back in the coral areas; therefore, it was necessary to weave the PVC with the cotton yarns in the ground. The ground of the main body of Skeleton tended to build up faster than the central float area due to the difference in the number of picks weaving and the coarseness of the PVC. To accommodate these differences, the area behind the PVC required a tighter structure, and a five-five basket weave was assigned to the cotton yarn weft systems. Conversely, a loose original structure was assigned to the ground. Yet there was still too much buildup; therefore, half of

the yarn weaving in the ground was pushed to the back in a large warp-faced satin.

Once the construction and weave structures were established, an analysis of the proportions for the skirt was conducted. By simply holding up a piece around the body, it was decided that the proportions were not flattering enough. The strange distance between PVC areas didn't follow the traditional lines of clothing construction that make the figure flattering. An additional PVC floating area was added between the existing ones. To do this, first, the coral was shifted so that the areas where it appears were the more attractive parts of the pattern. Then the central PVC float area was placed around a third of the way into the repeat design, while another was added in a slightly different shape, halfway between the first and the next repeat of the first. The same weave structures were applied to this design.

Figure 7.16   Design file changes for Skeleton

As trials on melting the PVC were performed, the idea to further melt the tips was brought about. To evoke more backbone resemblances, two pieces of wood were placed on either side of the folded edge so that the PVC tips poked out along the

wood. As before, the heat gun was run along this edge, but at a higher temperature and for an extended period. This caused the tips to melt into each other, forming gnarly nobs. The nonmelted parts of the PVC underneath the wood began to cluster in interesting patterns reminiscent of vertebrae. This process was carried out along all the PVC cut areas.

Fishing, named after its direct reference to fishing nets, drew inspiration from fishing and seashell harvesting, which played an essential role in the development of sea and shell symbolism. Weaving a fishnet with the doup leno technique, as discussed in Chapter Five, was the most effective strategy for this design. Due to the nature of doup leno and restrictions on warps, it had to be woven on a floor loom. The loom was set up with four yards of a 45-inch-wide linen warp at 32 ends per inch, where two ends crossed six ends. The 14/1 Nm Tidal Red linen added a dark and rich aura to the overall design that *Skeleton* was missing, while also coordinating with *Skeleton*. The slight luster of the linen yarn enhanced the luxurious aspect of the veil and accentuated its detail.

Figure 7.17 Photo of Fishing's warp and doups

The loom was set up so that every two ends were woven together. Every leno group crossed in the same direction, and every other group was drawn through different harnesses to avoid having harnesses that were too heavy. The harness draft had the

two crossing ends on helper harnesses eleven and fourteen and on top of the doups through harnesses one and two, and on top of the doups through harnesses three and four, respectively. The six standing ends that worked with crossing ends on harness eleven worked on harnesses twelve and thirteen, two ends through twelve, two through thirteen, and two through twelve. Similarly, the standing ends that worked with the crossing ends on harness four were drawn with two on harness fifteen, two on sixteen, and two on fifteen. This way, all ends could be woven into a plain weave variation with each two ends weaving together. This aided with the fineness of the linen and the weight of harnesses.
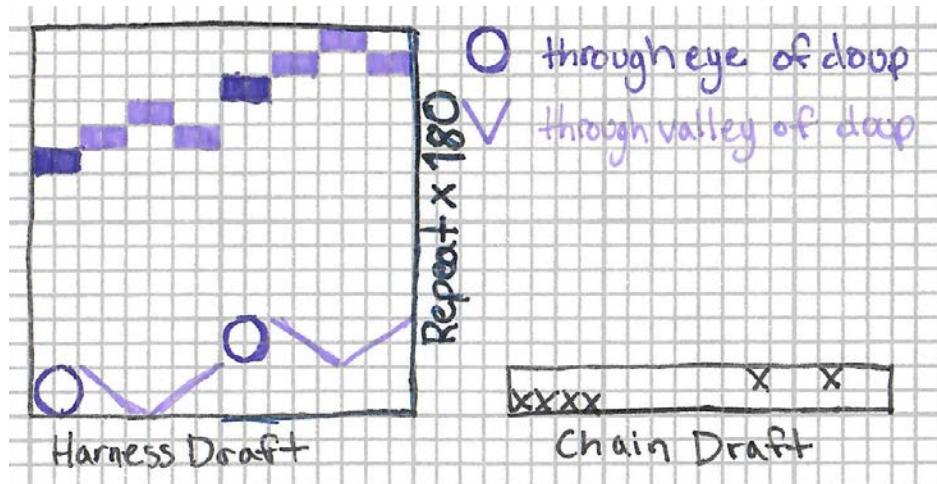
Figure 7.18 Weaving drafts for Fishing

It was decided to keep the weave structure consistent and straightforward because of the visual complexity of *Skeleton*. Therefore, the draft simply repeated crossing and uncrossing ends, forming a medium-sized, gridded mesh. The weft used was a combination of a Tidal Red 8/2 cotton and a Tyrian Purple 8/2 cotton. The two yarns were wound on the same bobbin to enhance weaving efficiency. The darker Tyrian Purple yarn added depth to the surface, while the Tidal Red cotton matched perfectly with the linen warp. Before the yarn was wound, the Tyrian Purple cone was strung with four-millimeter blush pearl beads, symbolic of *the Reaper*

gathering the pearl fishers' souls in her net. The blush color of the beads reduced the brilliance of white pearls while bouncing warm hues off the dark red yarns. The pearls were spaced out randomly and sparsely as the piece was woven to ensure a natural and elegant appearance.

Figure 7.19 Photo of yarns and pearls used in Fishing

When two yards were woven, the design was taken off the loom. Groups of warp ends on each side of the piece used macrame knot techniques to lock in the weft, and the selvedges were finished with crochet chains using the same weft yarns. This fabric was draped over the head of a mannequin with the warp direction reaching from shoulder to shoulder. Skeleton was pinned around the lower hips of the form to form the skirt design. Extra PVC pieces and selvedges from the jacquard weaving were melted together in a thin strip to be worn as a micro top. A rendering of the Reaper was drawn for the presentation at the showcase as a visual representation of the finished vision.

Figure 7.20 Photo of Skeleton

Figure 7.21 Photo of Skeleton
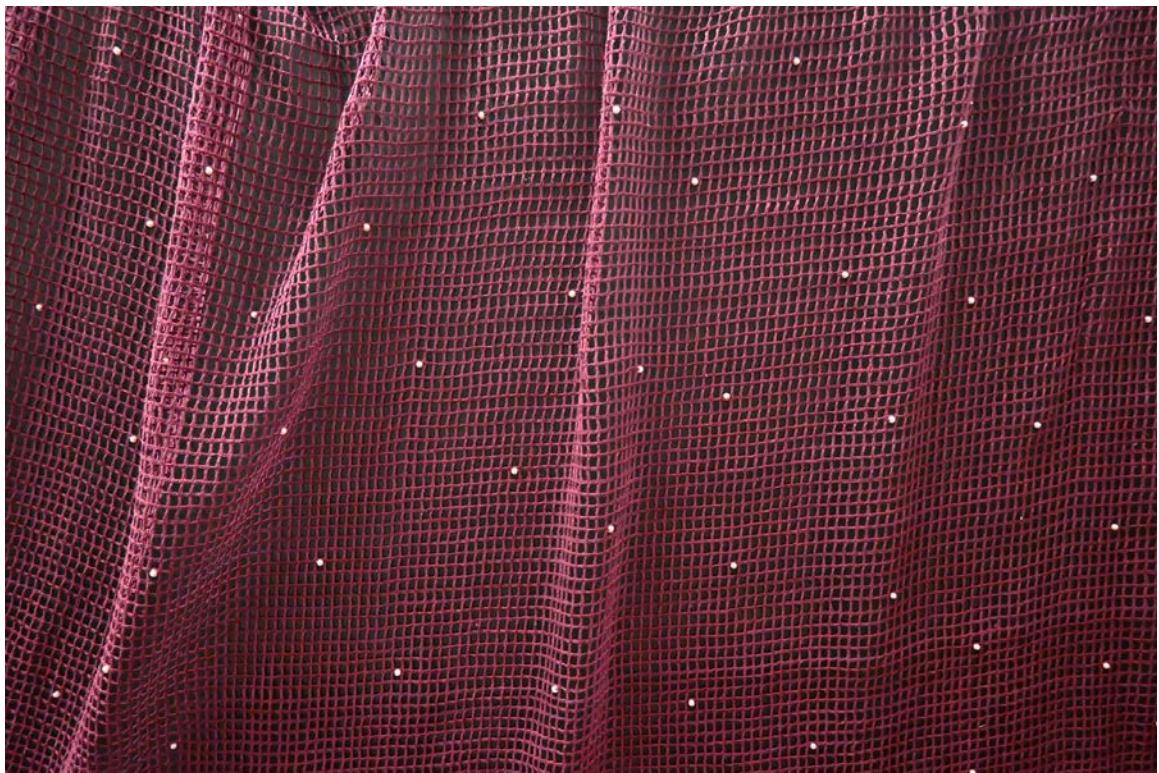
Figure 7.22 Photo of Fishing
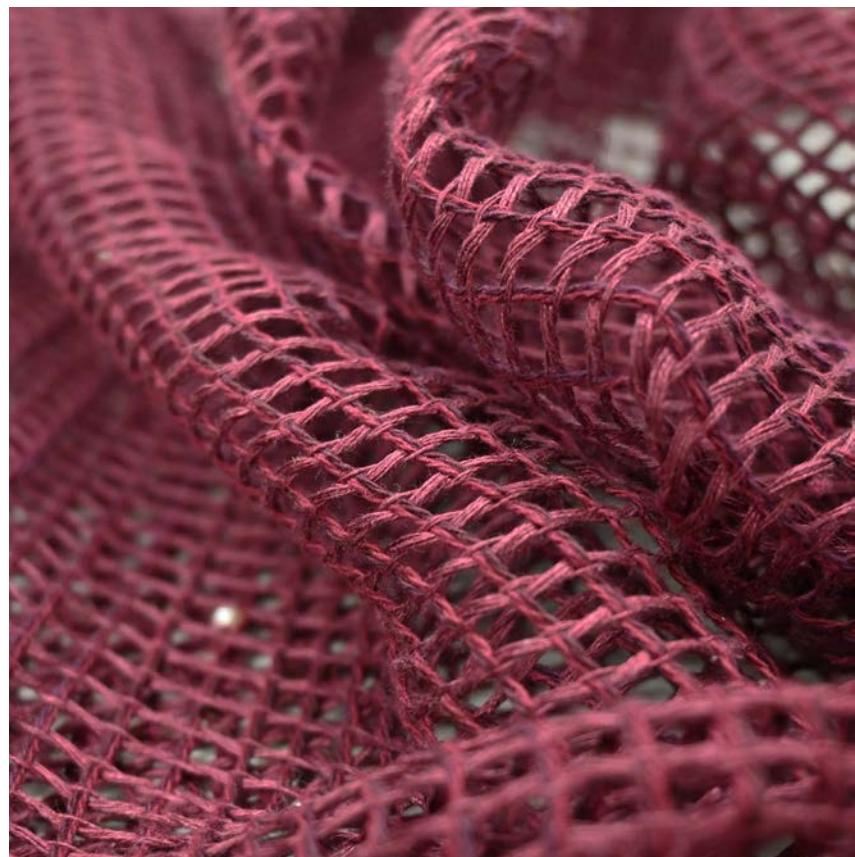
Figure 7.23 Photo of Fishing
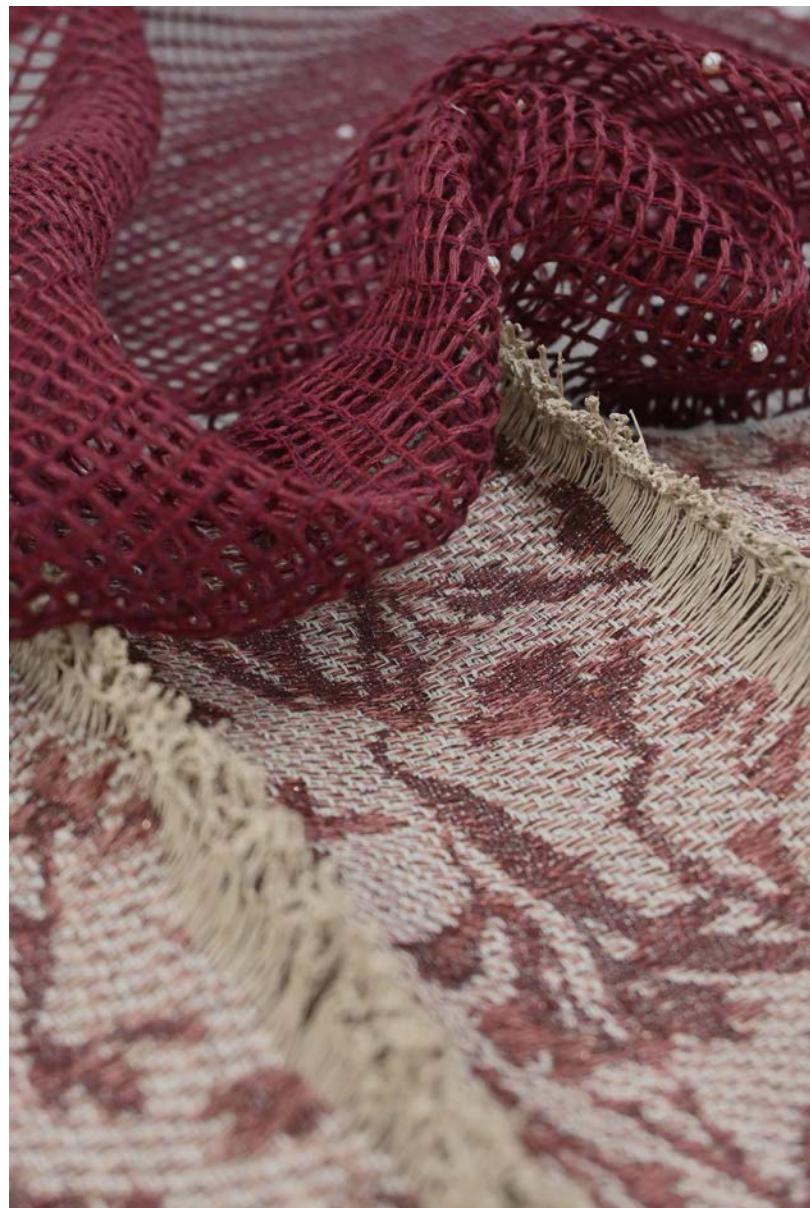
Figure 7.24 Photo of Skeleton and Fishing

Conclusion

Seashells are the bones left behind by mollusks upon their death. They can die for several reasons, but the human connection to their death mainly revolves around harvesting for food, the procurement of species, and the cultivation of pearls. These tasks are bound to lead to the end of the mollusk's life, but they also put the life of the humans at risk. *The Reaper* of *She Shells* is not the victim of death, as people and mollusks are, but she is the cultivator of death, collecting souls as

they come. She represents the darkness that surrounds the remains of the living with her skeletal skirt and pearl-adorned veil. She uses imagery of bones, fishing nets, and coral to tie her to the themes of death found in early modern uses of ocean objects. As the sea that takes lives and then gives them up for ascension, *the Transcender* covers how shells and pearls serve as symbols of ascension, faith, and the afterlife.

CHAPTER EIGHT: THE TRANSCENDER

Overview

Ships were used by Medieval Christians as symbols for the journey of life and the faith in divine guidance through the perilous sea of the world, destined for the harbor of heaven (Lee 15). Similarly, the abandoned shell suggests that after death, another journey awaits. Once the mollusk dies, its exoskeleton is abandoned, but the shell's journey does not end there. It could travel hundreds or thousands of miles underwater. A hermit crab could move in and make it their temporary home, along with other organisms. The shell could be found by a human, who may carry it across continents, up mountains, or fly in the sky. The shell metaphor for humanity's faith that something is awaiting them after death is used in many forms of spirituality and religion. *The Transcender* of the *She Shells* collection appears as a traveler or angel, a figure more of the heavens, who represents transformation and the enduring faith that humans have in the afterlife.

Shells and Spirituality

Figure 8.1 Pilgrim's Badge, 15th century, The Metropolitan Museum of Art, New York

Seashells, in some ways, are "immortal". Renaissance theorist Erasmus compared the human body and soul to a snail and its shell (Grootenboer 120). Whether the shell is the body abandoned by the soul or the soul abandoned by the body does not matter. Ultimately, the empty seashell signifies a transition and transformation that occurs after death. Further empty shells are reminiscent of the cave where Christ was buried and subsequently left empty after his ascension (Cattaneo-Vietti 44). Shells and related images, such as spirals, coral, and pearls, have been used in Christianity as symbols of the conscious mind, transcendence, faith in God, and the separation of body and soul.

Figure 8.2 Saint James the Greater, after Georges de La Tour, 17th century, Musée Toulouse-Lautrec, Albi

The scallop shell motif in the Middle Ages became the emblem for the Apostle James the Great, as well as for the Christians devoted to him. The symbol marked the way to his tomb in Santiago de Compostella, Spain, and to this day can still be found to direct contemporary travelers (Cattaneo-Vietti 49). The pilgrims who made the journey wore it as a badge, taking shelter along the way in homes also marked with the symbol (Waldron 646). In Medieval and Renaissance depictions of St. James and his followers, shells can be spotted on hats, cloaks, or hanging from their baldricks or belts. Poor travelers were able to buy souvenir scallops in Compostella, which served as proof that they had been successful in their journey (Starkie 70). The myth as to how the scallop became the emblem of St. James tells of seven disciples who collected his martyred body and accompanied it to Galicia, Spain. After seven days on a ship steered by an angel, they reached Iria Flavia in Galicia, where a wedding was taking place. The groom's horse became startled and jumped into the sea along with the groom, who then emerged covered in scallops. On the ship, one of the disciples reached into the sea and baptized the man (Starkie 70-1). From here, the scallop became the official emblem of the Church in Compostella, and pilgrims cherished their souvenirs, passing them down through generations (Starkie 71).

The baptism of the shell-encrusted horse rider from the tale is reminiscent of the shell often purported to have been used by John the Baptist to baptize Jesus. The shell represents purification and the Glory of God. In "The Sign of the Scallop Shell," Waldron describes the pilgrimage as "a sort of death" (646). He writes that pilgrims make the journey together, working toward a common destination, but once they arrive, they are alone in God's presence (Waldron 646). Each pilgrim makes the journey for a personal reason, and its ultimate end is one of solitude, as is death. Then, upon their arrival, the pilgrims find joy in completing their journey, "for the place of pilgrimage is a place of promise, the promise that kenosis

[self-emptying] ensures entry, acceptance, communion, and new life" (Waldron 647). Christians believe the church to be the kingdom of God or an extension of heaven. The destination is then a sort of afterlife. The purification that pilgrims find at the end of their journey is a reward for their devotion and a new opportunity to walk in the light of God, symbolic of what is required to be accepted into heaven.

Figure 8.3 Baptism of Christ, Alessandro Algardi, 1650-55, The Cleveland Museum of Art, Cleveland

The pearl appears in the Bible several times in reference to heaven. Revelation uses the image of pearls to describe the gates of heaven, "the twelve gates were twelve

pearls: each individual gate was of one pearl" (21:21). This imagery evokes grandeur, wealth, purity, and rebirth. An allegorical link between heaven and pearls is made in Matthew, "the kingdom of heaven is like a merchant seeking beautiful pearls, who, when he had found one pearl of great price, went and sold all that he had and bought it" (13:45-46). He purchases it, and this is used as a metaphor of the faithful choosing Christianity above all because heaven is worth that much. David Teniers used the pearl in his painting *Allegory of Faith* 1651-90) (fig. 8.5).

Figure 8.4 *Parable of the Pearl, Domenico Fetti, 1612-22, Kunsthistorische Museum Wien, Vienna*

The woman in the painting holds the pearl on her ear and looks up to the heavens, as if to say she is receiving "holy Faith" through her ear. (Jongh 78). The globe she rests her foot on is a symbol of vanity, the skull she leans her elbow on is a sign of death, and the cupids nestled on the floor represent lust (Jongh 78). The positioning of her feet and hands indicates that Wisdom and Knowledge conquer Vanity and Death, and the cupids that fly above are Chastity triumphing over Lust (Jongh 78). The pearl used in these Christian contexts teaches that faith is priceless and choosing it will grant salvation after death.

Figure 8.5 Allegory of Faith, David Teniers, 1651-90, State Hermitage Museum, Saint Petersburg

Figure 8.6 The dreamer pointing to the Pearl Maiden across a stream, Pearl-Gawain Manuscript, c. 1400, British Library, London

The anonymous medieval poet who wrote *Pearl* (late 14th century) uses the pearl as a metaphor for the soul. Similar to how the snail and shell are metaphors for the body and soul according to Erasmus, the pearl takes the place of the soul, more fitting due to its heavenly glow. The poem tells the dream of a grief-stricken man whose young daughter presumably died. The man returns to the place where he lost his pearl and falls into a dream. He is in a strange place where he sees across the river, his pearl, now a little girl dressed in pearls, possibly named Pearl. He is overwhelmed with happiness and dives into the river to reunite with her, but the Prince who rules this place will not allow it and throws the man out of the dream as punishment. In the introduction of Sarah Stanbury's edition of *Pearl*, she writes that the pearl "is a gem, is a two-year-old child, is a beautiful young woman, is the

immortal soul, is the heavenly city" (Livingstone). The poem centers around the idea of the pearl as a treasure and a symbol of the soul, and its divine connection to the kingdom of heaven and God Himself.
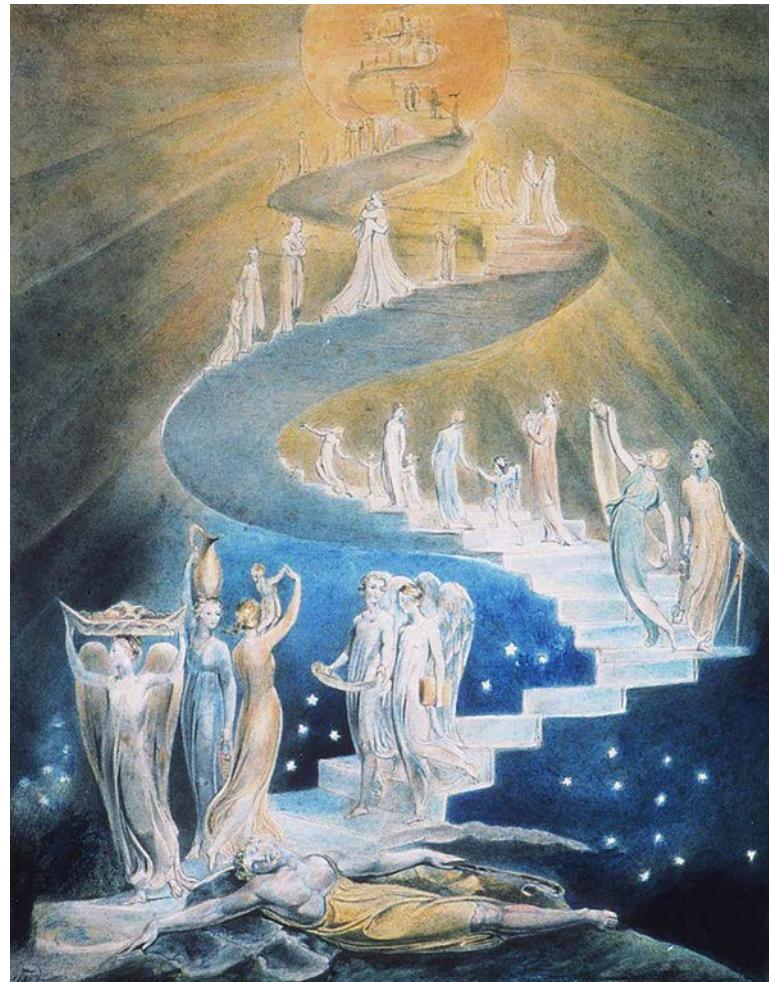
Figure 8.7 Jacob's Ladder, William Blake, 1800

Painted in 1800, William Blake's *Jacob's Ladder* displays a massive and celestial spiral staircase where ghostly figures appear to ascend and descend. Spirals are symbolic of a portal, vortex, or whirlpool, a vehicle of passage, where things can come and go (Kuberski 79). Like the "dreamer" in *Pearl*, Jacob lies at the base of the staircase, unconscious and dreaming. This painting "is a figurative map of the human psyche" (Corrigan 1). Ghostly figures climb the stairs, representing souls of angels and humans passing one another on their way to and from heaven (Corrigan

1). This painting is a demonstration of the unseen and imperceptible human mind and its connection to another universe, i.e. heaven. The ladder or stairs serve as a portal between the material and spiritual worlds, where humans, like the "dreamer" in *Pearl*, can encounter souls, such as the little girl.
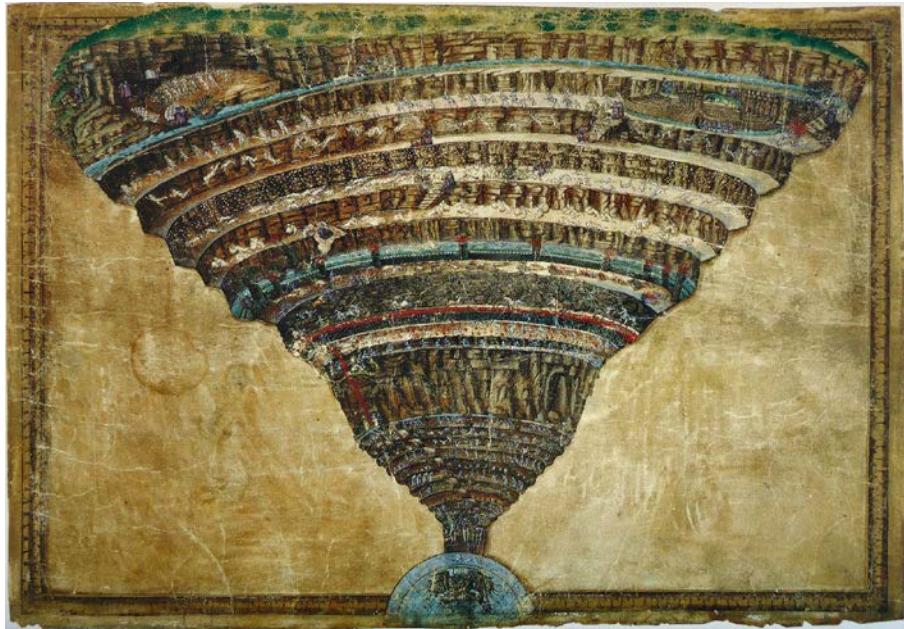
Figure 8.8 Chart of Hell, Sandro Botticelli, 1480-90, Vatican Library, Vatican

John Freccero writes in "Dante's Pilgrim in a Gyre" of how Dante Alighieri uses the spiral motion to describe the path of the mind in his famous *Divine Comedy* (1321). When the pilgrim's mind turns left, "*a sinistra*", it descends into hell, but when it turns right, "*a destra*", it ascends to the Mount of Purgatory (Freccero 168). As the pilgrim's mind turns toward the celestial representation of God and harmony, it's now taking the path of a solar spiral in harmony with God and the cosmos. *The Woman's Dictionary of Symbols and Sacred Objects* describes "the universe begins with roundness" and circular images and motions are all "symbols that try to express a human sense of the wholeness of things" (Walker 2). Freccero similarly points out that "only with perfection in supernatural order… contrary motions cease to exist and spiral harmony gives way to circular unity,"

again suggesting the right turning moves toward God and ascension, as "contrary motions" lead to hell (180). Many artistic interpretations of Dante's *Divine Comedy* by artists such as Sandro Botticelli (1480s) (fig. 8.8) and Gustave Doré (1868) (fig. 8.9) demonstrate these spiral movements and circular wholeness that have come to be associated with the spiritual mind, just as William Blake does with *Jacob's Ladder*.

Figure 8.9 Paradiso, Canto 34, Gustave Doré, 1868

The spiral is symbolic of the universe, time, or life itself. The spiral is found in the movement of the solar system and in the building blocks of life, DNA. It's found when water runs down the drain and in the curls of someone's hair. The spiral exists everywhere, as if it all has a predestined path. As it appears in the shell, it signals to the greater workings of the world. The seashell and the pearl

have been used in numerous instances to symbolize a divine awakening of the mind, representing the soul and body, and in association with God and heaven. The spirituality that surrounds them is portrayed in the angel of *She Shells, the Transcender*.
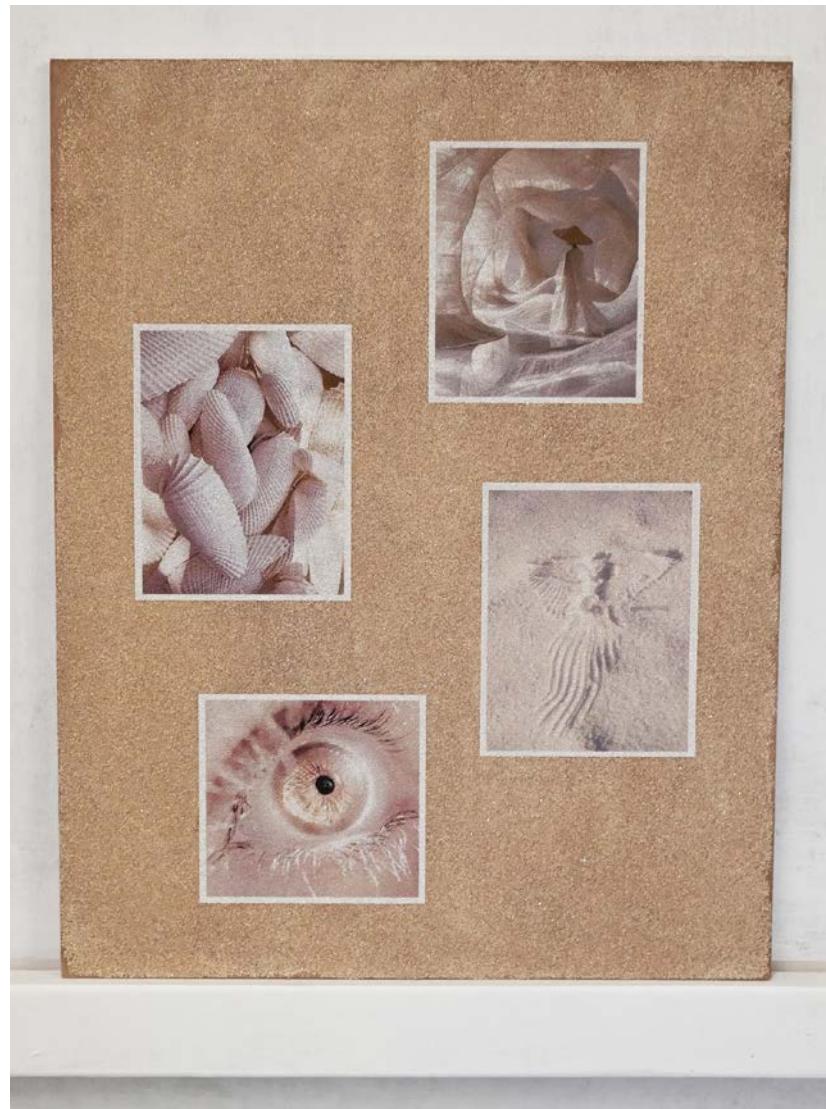
Figure 8.10 Concept board for the Transcender

The Transcender

The archetype, *the Transcender*, is the spirit that connects the human world to the next. She is an angel, representing transition, light, and the metaphysical. The dress design is a full-length sheath with a ruffle that travels down the side seams

on each side, from under the arms to the hem, and around the back. The ruffle resembles the fins of a cuttlefish, which extend all the way around the back of its body, creating an angelic wing- and halo-like effect. The dress is light in its color, transitional in its fluidity, luminous in its luster, and undefined in its misty layering. The design features Heavenly Pearl as the primary color, evoking purity and light, while also incorporating hints of Cosmic Cream and Slipper Shell Pink. Inspiration for this design comes from angel wing seashells, sand angels, and gauzy spaces and Khaite's Spring Couture 2025 Looks 33 and 41. There is only one textile that makes up the dress of *the Transcender* archetype of *She Shells*, and it's referred to as *Angel*.

Figure 8.11 Fashion design for the Transcender

The imagery used in *Angel* comes from clay in which a scallop was pressed to make thumb-sized impressions of the shell's ridges, spreading with a slight fanning shape. The 14-by-14-inch repeat created from the motifs was reduced to two colors: one representing the ridge impressions and the other representing the ground. The overall visual effect of *Angel* sought to use a double cloth construction where one layer ran with less density than the other. The sheerness of the less dense layer gave a slight glimpse of the more substantial layer underneath. Using highly lustrous yarns in the back layer added a luminosity to the glimpse seen through the top. In the areas where the shell ridges were, the lustrous yarns emerged to the face of the fabric. This transition between face and back layers, with different densities and surface textures, represents both the transitional form and layers of a shell that, when worn away, reveal the nacre or mother-of-pearl underneath.

Figure 8.12 Clay scallop presses and design file for Angel

Angel was woven on the J1 loom with the white cotton warp. To achieve the differences in densities, the warp was split into five layers, requiring the design to have 18 epi. Four of these warps were woven together with Weft System Two as the back layer, and the remaining warp made up the sheer face layer along with Weft System One. The designer introduced the term "gauze top" to describe this type of

construction. The top layer was woven as a simple plain weave with an incredibly fine, Heavenly Pearl 80/1 Nm superfine merino wool making up all of Weft System One. The yarn is so thin that it's nearly invisible, which is ideal for the gauze's transparency. Weft System Two was made up of a striae that consisted of 82% fine white 1/19 Nm polyester-viscose (Selector Two), 10% highly lustrous white viscose yarn (Selector Three), and 8% a 36/2 Nec Slipper Shell Pink cotton (Selector Four). The differences in yarns created more visual interest when they emerged on the face of the fabric.

Figure 8.13 Photo of yarns used in Angel

Figure 8.14 Screenshot of Angel's assign weaves from EAT Design Scope victor (64)

The back layer of the fabric initially featured a loose basket weave, imparting fluid and slippery properties reminiscent of *the Transcender's* ability to transition between worlds. Yet, at times, the structure seemed to be too loose and unconstructed. A new basket variation was drafted where two warps and two picks ran in between and opposite the larger floating basket areas adjacent. This held the weave structure, but the fluidity was lost, and at the end of the design process, the original basket was brought back into use. Over several trials, different yarn combinations in the back layer were tested. More pink was not favored, as it would detract from the piece's purity. Additionally, too much of the lustrous viscose yarn would add weight and stiffness to the fabric, which needed to be on the lighter side. Eventually, the striae proportions (82:10:8) were established for the final design. At one point in the process, the idea to change the scale of the motifs to
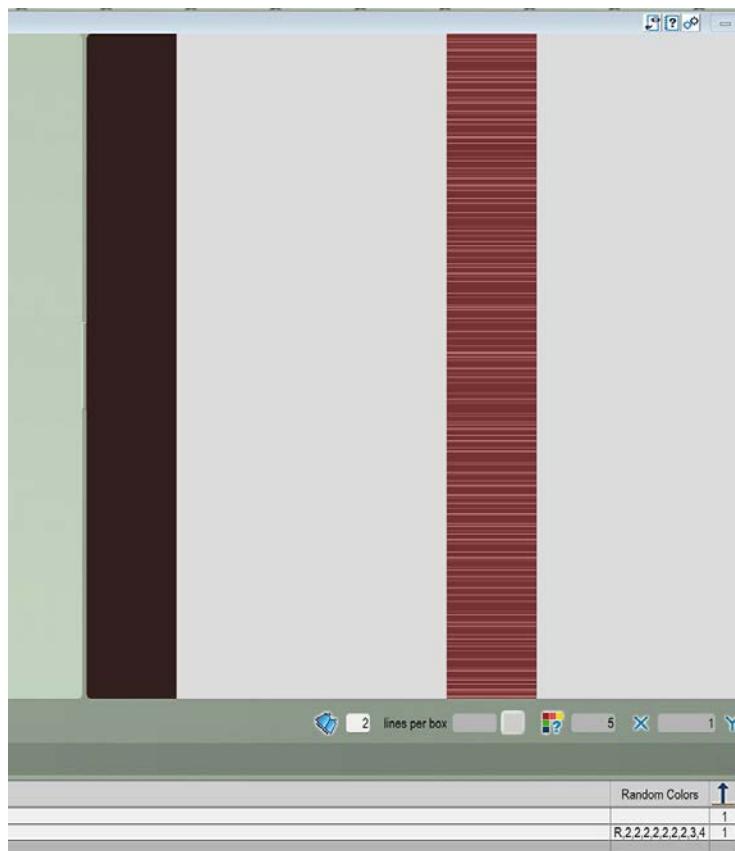
Figure 8.15 Screenshot of Angel's box motion from EAT Design Scope victor (64)

make them more irregular arose. The overall regularity of the initial design seemed contradictory to the concept of the collection.
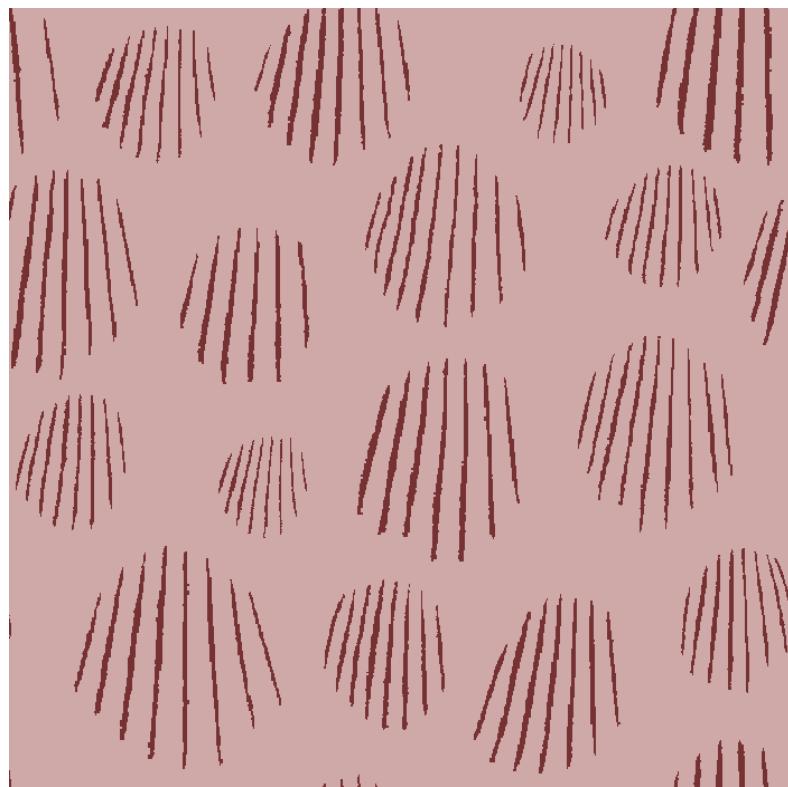
Figure 8.16 Final design file for Angel

Throughout the trials, wash tests were conducted to determine the optimal conditions for washing. A cold wash followed by air drying perfectly loosened the basket, adding to the overall fabric's slippery tendencies. Heavier washing and drying tended to cause the edges to unravel quickly. Another interesting effect of the cold wash/air dry was the puckering that occurred on the back layer. Wherever the two layers ran separately, the basket weave shifted into wave-like peaks across the fabric serendipitously mimicking the surface texture of angel wing shells. The design of *the Transcender's* dress celebrated both the back and front of the textile, featuring vertical running pieces at the side seams. Here, the dress can be constructed to showcase both sides of the fabric, highlighting the dress and fabric's wing-like characteristics.

Figure 8.17 Photo of the back of Angel

For the final exhibit, two long pieces of Angel were draped on either side of a form, with the edges meeting on either side in a caftan-like construction. They were pinned in this manner to suggest the end-use dress design illustrated for the exhibition.

Figure 8.18 Photo of Angel

Figure 8.19 Photo of Angel

Figure 8.20 Photo of Angel

Figure 8.21 Photo of the back of Angel

Conclusion

Humans' search for significant meaning in life has prompted them to look for signs in various aspects of the natural world. The appearance of the spiral form in nature is one of those. Spirals can be symbols of a portal to another dimension, or they could represent life itself, both in the working of the cosmos down to the DNA in living things. The pearl and its purity are symbols of both Jesus Christ and the kingdom of heaven. The seashell was a symbol of rebirth, particularly in the context of baptisms and pilgrimages in medieval and early modern Europe. Although not prevalent symbols in today's culture, particular groups of people, such as those in Santiago de Compostella, Spain, continue to find significance as historical emblems. *The Transcender* captures the essence of spirituality surrounding seashells through its connection to both the physical and metaphysical realms. The

use of lustrous and luminous surfaces evokes the layers of mother-of-pearl found in a worn-down shell, as well as the luminescent light associated with heaven. Its fluid and slippery structure represents the angel's ability to slip between worlds, as does the seashell. The angel imagery of *the Transcender* dress and the angel wing shell texture speaks to the *She Shell's* character as a representation of the soul and spirit.

CHAPTER NINE: CONCLUSION

The *She Shells* textile collection explores moments in the human experience where people have found seashells to be symbolic. The seashells' resemblance to genitalia has made them timeless symbols for fertility, sexuality, and temptation as seen in *the Creator*, *the Lover*, and *the Enchanter*. Their function as protective containers makes them effective metaphors for the womb, shelters, and the psyche, as demonstrated by *the Creator*, *the Builder*, and *the Transcender*. The history of seashells, particularly in relation to human pursuits of power and knowledge, has played a significant role in shaping the modern world. *The Seeker* embodies the profound impact that shell collecting has had on humanity. *The Creator*, *the Reaper*, and *the Transcender* display the shell's nature as both a remnant of life and death, which prompts its associations with life, death, rebirth, or the afterlife. Above all, the tremendous beauty and geometric perfection of seashells drove a narrative around their divine origins, representative of a greater order, and represented in *She Shells'* designs. The *She Shells* archetypes each individually capture these ideas in their characters and attire.

The purpose of designing this textile collection was, firstly, to explore the relationships between humans and shells, as well as the symbolic meanings of shells, inspired by the designer's personal connection to the ocean and seashells. Secondly, the collection demonstrates the use of multiple weaving techniques that manipulate the fabrics into shapes that lend themselves to the construction of the fashions they are intended for, thereby reducing the need for extra steps in the cut-and-sew process. Currently, the fabrics are not entirely set up for garment construction. The opportunity to do so would be the next phase of this thesis collection. To continue, the operations of assembling the fashion designs rendered for each archetype should be conducted to gain a better understanding of the garment's needs and how the textiles would perform under these conditions.

Currently, the designs and constructions of textiles lend themselves to being incorporated into the conceptual phase of fashion, but lack the practicality of clothing construction. The high-fashion end-uses of these fashions are not necessarily meant to be worn sensibly, but they have the potential to be part of the next phase of the project. This presents another opportunity for the collection to be reworked into manufacturable and marketable designs through alterations to some of the textiles' constructions, as well as the use of alternative materials.

The designer hopes that the *She Shells* collection will demonstrate the wealth of knowledge and understanding of weaving that she has acquired over a short two-year period. Never having woven before, she pushed herself during this time to learn as many techniques as possible and experiment with a great deal of materials. This designer plans to continue exploring weaving and its possibilities, with the hope of incorporating this into her textile career. During her two-year period of study, she found herself constantly working against the perpendicularity of the warp and weft yarns in the attempt to create organic and natural patterns, textures, and forms. She also found herself pushing away from the "flatness" of fabrics to create more depth and interest in her designs. The tendency to push the boundaries of traditional weaving provides more areas for experimentation for the designer to explore.

Another opportunity for the future of this textile collection lies in its materiality. In many of the designs, the materials are essential to the story of the archetype and theme; yet in others, they are not so crucial. One way this could be achieved is with the exploration of dyes and materials derived from shells, mollusks, and other sea materials. During her studies of shell history, the designer came across the ancient practice of byssus weaving, which is practiced today by a woman on a small island in Southern Sardinia, Italy. Also known as sea-silk, byssus are

silk-like filament protein fibers, which noble pen shells use to attach themselves to rocks. This, however, is a dying art due to the government's protection of the pen shells, and rightfully so. Yet there remains only a handful of weavers left capable of spinning, dyeing, and weaving the fibers into yarn, and each fiber is itself a precious good. As a weaver, the designer finds a great deal of potential in this area of cultural history and practice in relation to the concept of *She Shells*.

The method of character development for this collection helped create individual personalities and identities that could be effectively worked with. This process created a deeper and more meaningful perspective within each textile design, adding to the overall narrative of the storytelling carried by the *She Shells*. Although this process may not be suitable for all designers or concepts, it is a type of workflow that can be applied again in appropriate circumstances. Inspiration from a variety of different sources adds to their diversity and well-roundedness. These sources appear in various forms, including shells, painting, photography, fashion design, architecture, sculpture, literature, A.I. renderings, materials, marine biology, philosophy, and theology. Ultimately, the efforts to explore a personal subject in an impersonal format allowed a purposeful product to emerge that feels significant to others, yet remains unencumbered by the weight of intimate emotions.

APPENDIX

The following figures show the final exhibition of the *She Shells* collection at The

Design Center at Thomas Jefferson University on December 5th, 2025.

SHE SHELLS Colors

tidal red — bone grey

tyrian purple — heavenly pearl

sea star violet — cosmic cream

slipper shell pink — soft sand

sea rose — driftwood

abalone silver — ammonite brown
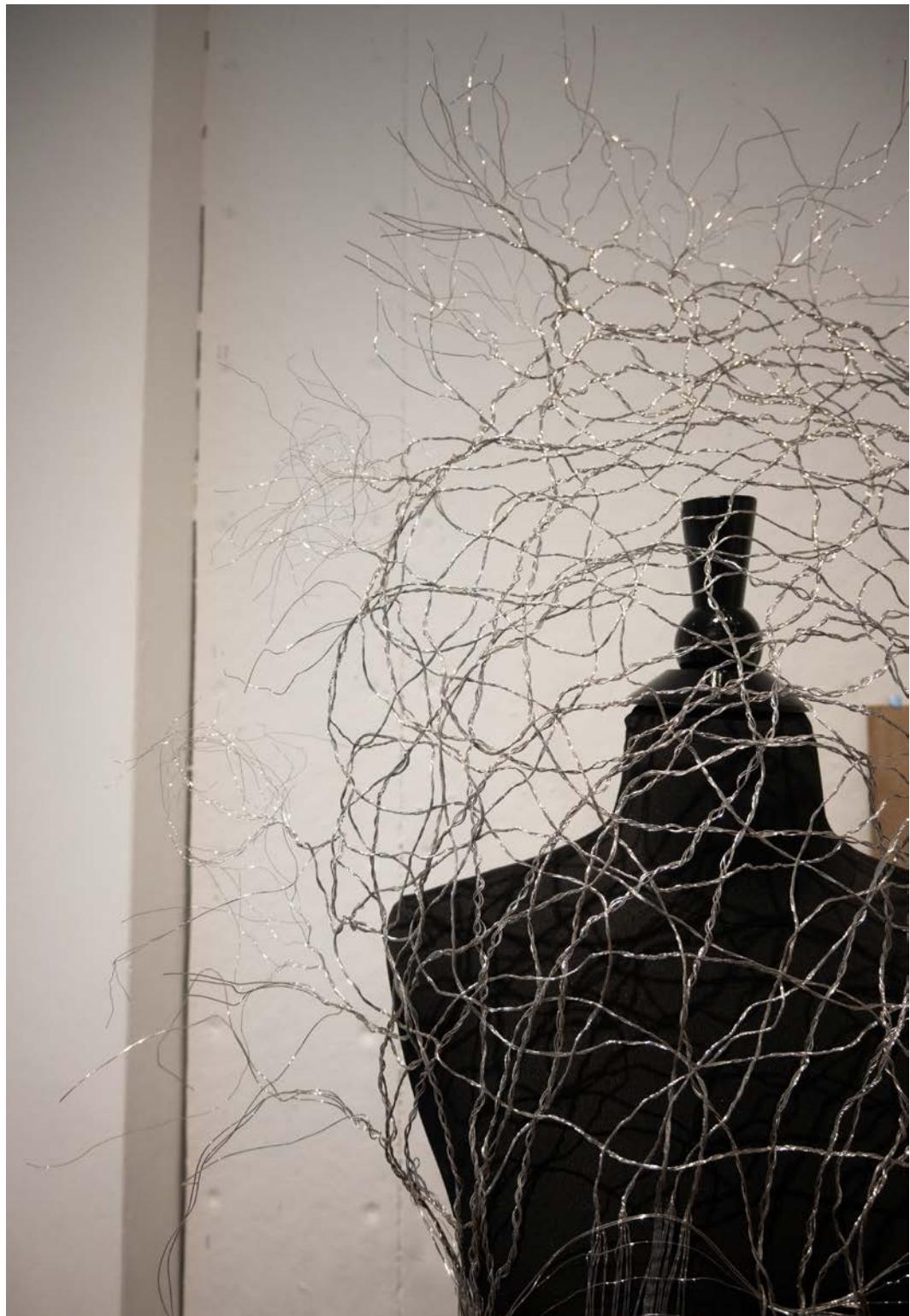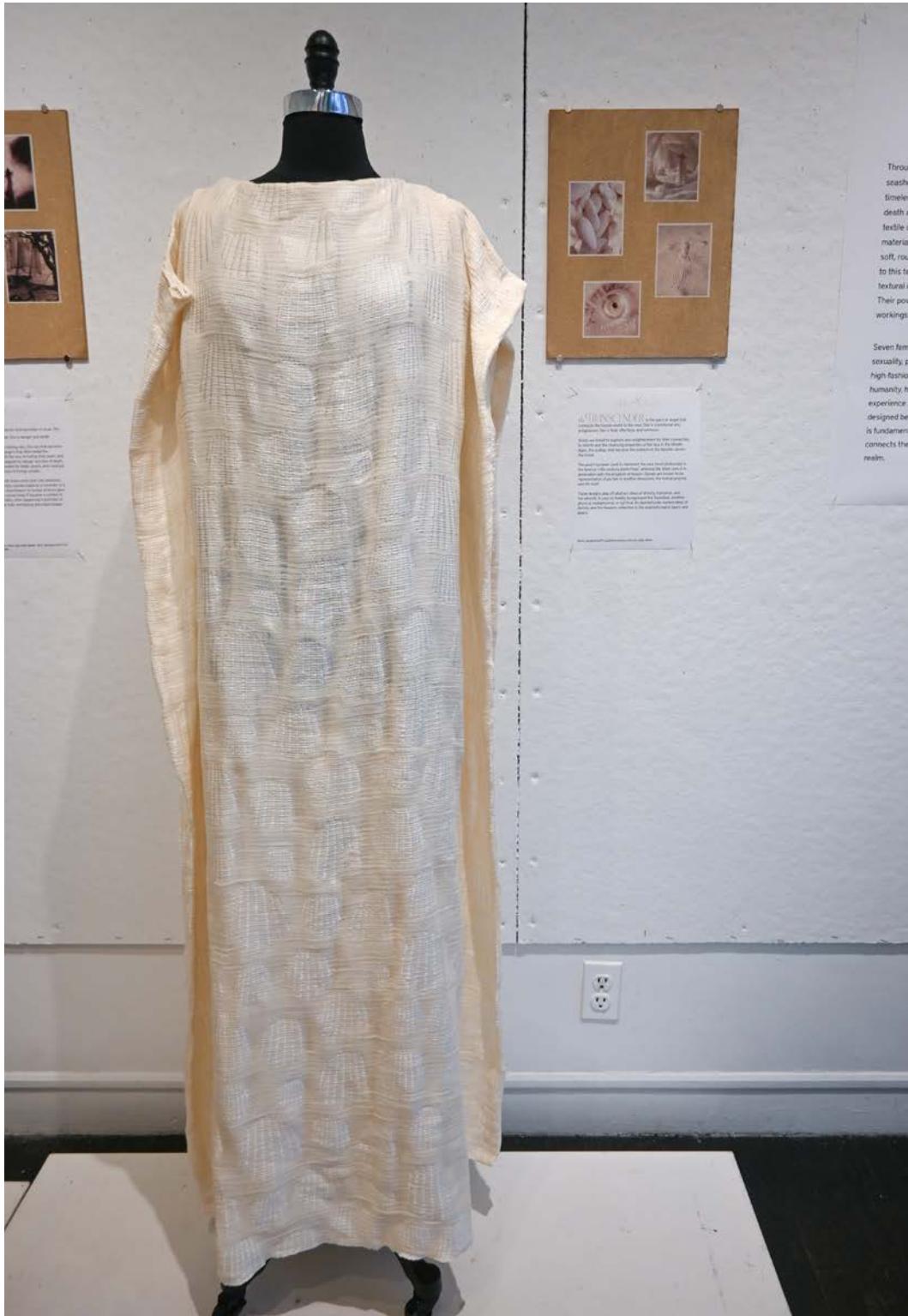
SHE SHELLS

by Stephanie Tomey

Throughout human history, people have identified themselves in seashells, establishing the curious objects with value, mystery, and timelessness. Seashells are liminal objects, existing between life and death and originating from both the earth and the heavens. This woven textile collection celebrates the majestic forms of seashells, their materiality, and natural origins. The design's juxtapositions of hard and soft, rough and smooth, matte and iridescent, and dense and airy speak to this terrestrial and celestial threshold. This collection uses visual and textural qualities to demonstrate the fluidity and versatility of seashells. Their power reaches inside the soul and outside the mind, influencing the workings of both the physical world and the metaphysical realm.

Seven female archetypes were conceived to represent themes of fertility, sexuality, pursuit, imagination, architecture, death, and the afterlife. The high-fashion designs explore the relationship between seashells and humanity, highlighting the characteristics of shells that echo the human experience and impact the human world. These seven silhouettes were designed beforehand to inform each textile's three-dimensionality, which is fundamental to capturing the essence of seashells. The color palette connects the designs to humanity, the natural world, and the intangible realm.
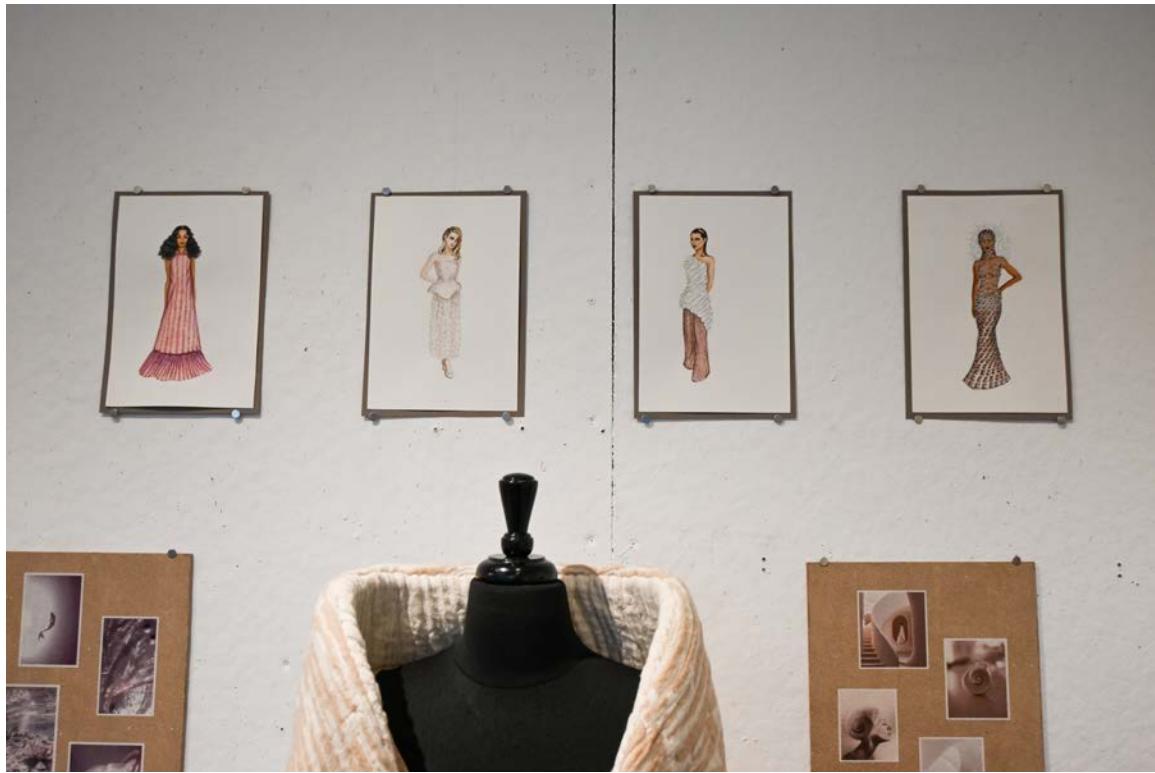
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