Synesthetic Perception: Exploring the Senses of a Synesthete Through Theatrical Art-Wear

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Synesthetic Perception: Exploring the Senses of a Synesthete Through Theatrical Art-Wear

An Honors Thesis submitted in partial fulfillment of the requirements for Honors in School of Human Ecology

By
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Under the mentorship of
Dr. Addie Martindale

ABSTRACT

The neurological condition known as Synesthesia is a condition that changes the way that the world is perceived for the affected individual. Altering the brain’s interpretations of sensory input means that when one sense is triggered, it can create a neuro-domino effect and trigger an otherwise completely unrelated sense. It comes in many forms, and no two are exactly alike. While there is a possibility of two Synesthetes having the same trigger and response senses, Synesthesia is so unpredictable that it is nearly impossible for two synesthetes to have the exact same experience. In this work, the researcher possesses a form of Synesthesia that connects emotions to color, meaning that each emotion has a corresponding visual color. The goal of this theatrical artwear collection is to take this abstract form of color and emotion and use them to share this perception of the world in a more tangible way. Each design is digitally rendered using Adobe Photoshop as well as physically created in the form of ⅓ scale dolls using design elements of color, material, texture, accessories, and details to best convey Synesthesia.

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Vulnerability

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INTRODUCTION

Synesthesia is a neurological condition that affects the neural pathways in the brain. Aptly named by George Sachs in 1812, it is a translation of the Greek meaning “to perceive together” (Jewanski et al., 2020), Synesthesia affects the brain’s interpretations of sensory input. Often, the triggering of one sense will create a neuro-domino effect and trigger an unrelated sense. As someone who possesses this condition, I aim to use my background in design and psychology to create physical garments that translate my abstract experiences into tangible and visible objects. I hope that introducing my experiences within the condition will help others better understand the way that I experience and interact with the world around me.

Referred to by many names over the years, the condition of Synesthesia can be traced throughout history. From Ancient Greek philosophers, to John Locke’s essays, to potentially even Isaac Newton observing Synesthesia in another person (Jewanski, 2020). In 1812, George Sachs described his own form of Synesthesia. In this essay, colors take on a form of their own through letters, numbers, and ideas. It was made as an offhand comment in regards to his albinism, but was much more impactful in retrospect. (Jewanski, 2009) While this condition may seem strange and fantastical to some, it is daily reality to many others. In fact, very few people realize they possess traits that make them a synesthete. Often, they go their whole lives assuming others perceive the world the same way they do. When describing their atypical experience, many are bullied into silence as children. Despite the elusiveness that Synesthesia presents, research suggests at least 4% of the population possesses some form of it. (Carpenter, 2001)
Inspiration and Personal Background

Realizing the differences in my perception of the world to those around me was groundbreaking. For as long as I can remember, the way I experience the world has always been linked to colors. Just as surely as I felt emotion, I felt the color that was tied to it. The experience was so engrained, so natural, that I genuinely had to focus and pay attention to put words to them. If I felt joy, it was a bubblegum pink with pale yellow bursts. Anger was a deep maroon, purple undertones and dark edges. Sadness was a deep blue-green with endless depths and flecks of purples and reds. For me, having colors and emotions mean the same thing wasn’t a strange occurrence, and it didn’t seem like it was strange in the outside world either. Everywhere I looked colors had meaning, even if they didn’t match up with my own. Television, advertising, and societal expectations all had their own colors. The phrase “green with envy” was one that I always thought was silly because envy wasn’t green- it was burnt orange and bruise purple. Fear wasn’t black, and happiness wasn’t red or yellow (Frank & Gilovich, 1988). But for others, it seemed to be. This asynchronous color association made me feel like my colors were somehow strange and wrong. So, just as other children do, I didn’t tell anybody about how my colors were different. Just in case.

It was not until high school did I find the term “Synesthesia.” By this point, I had mentioned my colors to a few close people and discovered it was not, in fact, something that everyone else experienced. Finding the word “synesthesia” in a story to describe how the character could see math in the space around them was when my curiosity was piqued. I began to research the term and it was fascinating to me to see the true complexities and differences in people’s perceptions of the world. At first, I did not recognize myself in the term. Descriptions
showed it only being linked to the five senses, and that wasn’t how mine worked. Deeper research, however, revealed that was not the case. Not only did I have one form of Synesthesia, but two distinct types that meshed together to create one magnificent experience of a sensation of color. My two forms of Synesthesia are emotion-color and personality-color, and I was not the only person in the world who experienced what I did.

This project is dedicated to sharing my own experienced Synesthesia with those around me. Using my own perception as a reference point, I hope to bring some portion of my experiences to the real world. For this project, I’ve chosen to use apparel design as my medium, theatrical art-wear as the final product, and my emotion-color Synesthesia as my tools. A collection of garments was designed and three of them were brought to life as tangible art pieces.
Synesthesia

Understanding Synesthesia (despite its relatively simple textbook definition) is not an easy task. As George Sach’s coined phrase has lasted through the years, our knowledge of the condition has grown immeasurably. There are at least 73 recorded forms of Synesthesia known today (Day, 2019). For the purpose of this paper, I will refer to types of Synesthesia as a system. This translates to their combined efforts to create the experience of the synesthete.

For both the scientific world and the synesthete community, the most accepted definition of Synesthesia is: “A perceptual condition causing unusual sensations, which are triggered by the stimulation of otherwise unrelated modalities,” (Jewanski, 2020). When one sensation in the system is triggered, the other part is triggered involuntarily. There are two general categories of responses: projector and associative. Projector synesthetes are people whose system includes the trigger projecting their response into the world around them. (Dixon et. al, 2004) These include both multi-sense systems as well as single-sense systems. Multi-sense systems include more than one type of sense with any number of combinations between hearing, sight, taste, sound, and touch. An example of this kind is a chromasthete that, upon hearing music, experiences a response in their field of vision that usually is based in color. A single-sense system possesses a form that creates almost a feedback loop. Grapheme-color is one such type of system. Synesthetes with this system experience numbers, letters, dates, or any other grapheme based information in certain colors. A projector with a Grapheme-color system will physically see the color in their external view, with their senses unable to see it in any other form. Associative
Synesthesia is different from projective in the fact that the experience is found “in the mind’s eye.” These interactions with the synesthetic triggering is internal, rather than being perceived externally. An example from Dixon’s (2005) paper on projector versus associative Synesthesia is that when most people see a black and white photo of a stop-sign, they know instinctively that it is red. The mind supplies information that is not otherwise available, and they accept this information as fact. In the same example of Grapheme-Color, the major difference for associative types of systems is that when faced with a digit, rather than having the digit change color for them externally, they experience an internal supply of information that tells them the color of the digit.

Important to note--even if two people have the same type of Synesthesia, no two synesthetes experience them the same way. Asking two synesthetes with Grapheme-color systems to identify the colors that are associated with the digits may find a similarity in one or two answers, but for the most part it is found that they do not overlap. Synesthesia is also measurable in intensity and severity. Some people experience Synesthesia with very little impact in their day to day life, and it is usually these people with milder intensity or severity that go without diagnosis. If the months on a calendar have a color or numbers have a faint smell, those are systems that can be easily worked around or dismissed. Those who experience high levels of intensity and severity, however, can be severely limited by their experiences. Sound-color Synesthesia does not sound like a dangerous limitation, and for some it isn’t. But when the level of sound influences the brightness, loud and sudden noises like horns of other cars can cause temporary blindness as the visual interference takes over their whole vision (Underwood, 1983). While it is true that synesthetes sometimes have to plan their lives around these difficulties,
others embrace their Synesthesia wholeheartedly. A large portion of synesthetes tend to gravitate to artistic expression, finding their Synesthesia useful in the creation of their work. For example, there are many celebrities that embrace and share their synesthesia with the world. They use their unique experiences to create experiences, art pieces, and music in a way that is perhaps more intimate than those without Synesthesia.

As for why Synesthesia occurs, there are only speculations and theories. The two main proposals are the concepts of the connections between senses being altered versus the function of the brain being altered. Major arguments for the function difference between synesthetes and non-synesthetes tend to point towards the trend of associations and long-term experience. They claim it is likely a mutation of the neural passageways and cortical connectivity that causes over-activity, and thus the experiences. These are usually based on the fact that Synesthesia tends to be unilateral. This means that the experience goes one way only, sense A to sense B but not sense B to sense A. For example, in a unilateral association, sound will always produce a color, but color will not produce sound. Bilateral associations do exist, but it is extremely rare of the triggers to work both ways. In this type, the person may experience sense A triggering sense B and sense B triggering sense A but in a different way. For example an E flat may produce a shade of yellow, but that same shade of yellow when observed visually may produce a C natural.

Most commonly reported types of Synesthesia are from senses that are located adjacently within the neural network as well, supporting the possibility that the connections already exist and are just dis-inhibited by those with synesthetic properties. (Simner, J. & Hubbard, E., 2013) A recent study supports the existence of altered structure within the brain itself, finding greater structural integrity within white matter tracts in the temporal, parietal, and frontal regions when
compared to non-synesthetes. These existences very strongly suggest a secondary creation of the pathways, lack of removal of previously existing ones during synapse pruning, or the activation of normally dormant pathways within a synesthete. All of these suggestions give the “how” to synesthete perception, but not the “why”. Despite the fact that Synesthesia seems to be heritable, the fact that multiple different kinds of synesthesia can exist in a family shows that synesthetic type is not defined by a single phenotype that is passed down from parent to child, but rather that the heritable trait is just the trigger to open the possibilities to having Synesthesia. (Bargary & Mitchell, 2008)

**Color And Wearable Art**

Color holds an important part in most people’s lives. It has been proposed for many years that the reactions people hold to color is both physical and a learned association. These associations are said to have an “influence on affective, cognitive, and behavioral responding” (Citation Needed). These color effects are thought to be a direct result of constant pairing of colors with triggers such as concepts, messages, or experiences. This means that, rather than the brain having its own associations with the color, they are learned from their experiences of the world around them. These learned associations are culturally bound, as well, but there are a few color associations that tend to span across multiple cultures.

The way that the eye sees color is an important biological component that human beings have used for survival for centuries. In fact, seeing shades of color is one of the most important biological advantages humans have over other animals. Without the ability to tell shades of colors from one another, the ability to perceive depth is completely skewed. Human beings are
amazing in their cognitive understanding and creation of colors within the mind. With only three color receptors, human beings are able to mix and match the wavelengths perceived into thousands of shades of colors. Seeing colors, shapes, and form is a constant struggle for attention. In order to avoid being overwhelmed, the brain has taught itself to understand and take in the world around us instinctively instead of making conscious choices of what to pay attention to. (DeLong & Martinson, 2014)

There are many layers to colors and how they are interacted with. DeLong and Martinson (2014) give insight to the importance of colors and the way they are used to interact with the world around them. Categorical perception gives basic spatial and temporal structure to the environment around the perceiver. Direct experiences are spontaneous visual experiences that happen in the surrounding world, tying colors to memories and experiences. Even removed from the situation, these color associations still persist. Indirect (or cultural) experiences create associations between color and tradition, knowledge, meanings, and values. All of these types of color perception work together to create the experiences of color.
COLLECTION DEVELOPMENT

Inspiration

The collection as a whole originally held seven designs, but three were chosen to focus on. The concept behind the inspiration was to name and identify the colors of each chosen emotion, as well as the general interaction of the colors during the experience. As each experience is changed by my surroundings and current situation, no two experiences of an emotion will ever be exactly the same. To mitigate these issues, I analyzed the emotions individually and tried to pick the colors apart from outside influences. These experiences were then compared to societal parallels, as well as parallels within nature. I did this in order to create a connection between an already existing piece of information most people know of and the colors of the emotion that was being portrayed.
Design 1: Fury

Figure 1. Fury Synesthetic Representation (Trujillo, 2021)
Fury Phase 1. Design Concept

Definition: intense, disordered, and often destructive rage (Merriam-Webster, 2021)

Description of Synesthetic Experience: Maroon swirling around, golden undertones peeking through, and scarlet sparks and jolts skittering across the edges.

Pantone Colors:

- High Risk Red: 18-1763 TCX
- Bumblebee (Yellow): 14-0958 TCX
- Unexplored (Grey): 19-5005 TCX

![Pantone Colors](image)

Figure 2. Pantone Colors of Bumblebee, High Risk Red, and Unexplored (Trujillo, 2021)

A natural association with the colors red and gold tends to be fire. While fire itself was close to the emotion described, it was too explosive and intense for the feeling that was being evoked. The next association was lava, which fit the image perfectly. Lava is slow, festering, and unassuming. However, it is one of the most dangerous forces on earth and so very destructive. Comparing photos of lava with the emotional description, this defined the list of design details.

These details are scattered throughout the look. Even the fabric itself was designed to evoke visual cues. Red velvet covers a majority of the body, leaving very little of the body
exposed, and only those places tend to include more vulnerable areas such as above the chest and the abdomen. Studs were placed to warn others of a type of danger, protecting the wearer with it’s spiky exterior. Jewels were used throughout the look as a nod to the color change that lava goes through. From the bright gold of magma erupting, to the fast moving red of lava, to the deep grey of cooling rock, these jewels created the movement that the lava follows down the chaps and arms of the bolero. Channels were created by jewels and black stone, leaving the space between for ElectroLuminescent wire to glow through. This is the shimmering of rage even once the rock has appeared to be cooled, threatening to rise up and spill over once more.

Fury Phase 2. Techniques and Execution

The garment patterns were drafted through draping directly on the figure, both due to odd proportions and material type. It was stitched using wooly nylon thread, giving it the stretch it needed to be compatible with the fabric. Due to the nature of stretch material, each piece was carefully hand stitched before being removed to keep the shape necessary. The still-stitched pieces were traced onto pattern paper, trued, and walked. These steps ensured that the edges of the seams would match up and fixed any discrepancies. A secondary mockup was then cut, stitched, and tried on the doll. This process was repeated twice more before achieving the desired look. Once this was finished, the pieces were cut out of the fashion fabric and lining, these being a four-way stretch red velvet and thin four-way stretch lining. The garments were assembled and top stitched. The two garments requiring a closure were the sleeveless top and the bolero collar. The top was closed via velcro, and the bolero was closed using a small clasp.
The accessories and finishings were done in increments. The cap was constructed from a straw cowboy hat, deconstructed and reused, before being covered with the same stretch velvet material using glue and hand stitching. The chaps, bolero, shoes, and cap were all stoned and spiked by hand using E-6000 and a syringe, while the black detailing was painted using fabric paint. The shoe base was taken from another doll shoe I had on hand, deconstructed, painted, and recovered to create matching shoes. EL wire was threaded through and hand stitched using fishing line.

*Fury Phase 3. Final Design*

This look includes several pieces in layers. The base outfit is a sleeveless, cropped top paired with high waisted shorts that have been cuffed. On top of the sleeveless top is a bolero with a small buckle closure at the neck. Layered over the shorts is a belted pair of flare chaps. The chaps and bolero have black stone shapes at their edges, gold and red lines detailed along them, and are accented with studs. They are also heavily stoned using glass gems and Swarovski crystals. The hat is an oversized flat-backed captains hat with studs and jewel detailing. There is also a pair of platform shoes with an ankle strap that has also been studded and stoned.
Fury Design

Figure 3. Rendering of Fury Design (Trujillo, 2021)
Figure 4. Digital Rendering of Fury’s Flats (Trujillo, 2021)
Fury Process Photos

Figure 5. Cutting out muslin pants for Fury (Trujillo, 2021)

Figure 6. Fury Muslin Mockup (Trujillo, 2021)
Figure 7. Lining Fury bolero (Trujillo, 2021)

Figure 8. Turning Fury Bolero
Figure 9. Fury full outfit sans top, Fully lined (Trujillo, 2021)
Fury Final Photos

Figure 10. Fury Full Ensemble Final Photo (Johnathon Chick, 2021)
Figure 11. Fury Cap Final Photo (Johnathon Chick, 2021)

Figure 12. Fury Final Photo detail shot (Trujillo, 2021)
Design 2: Confidence

Figure 13. Confidence Synesthetic Representation
Confidence Phase 1. Design Concept

Definition: having or showing assurance and self-reliance (Marrium-Webster, 2021)

Description of Synesthetic Experience: Strong teal with green undertones and an indigo overlay

Pantone Colors:

- Rolling Hills (green): 18-6028 TCX
- Mosaic Blue: 18-4528 TCX
- Mazarine Blue: 19-3864 TCX

![Pantone Colors of Rolling Hills, Mosaic Blue, and Mazarine Blue](Pantone, 2021)

The type of confidence being analyzed and created is not that of someone who believes themself to be the best. It is, rather, the kind of confidence born of years of experience and trust in one’s self. This type of confidence allows one to command a room with nothing more than their stance and body language. The base colors include shades of blue, purple, and green. There were several associations that could be made with these colors, but the visage and inspiration chosen was that of a peacock and it’s plumage. This leant itself well to the concept as it was something society already tended to associate with more showy styles.
There were many details chosen to convey the emotion of confidence, all displayed in several different ways. The jumpsuit design and shape were meant to accentuate the figure of the model using a draped bodice and fitted waist and thighs. The flare of the pants was meant to take up far more room than one should reasonably do with a pair of pants, leading to a wide circle flare that was stiffened to push the boundaries of the design. The material chosen for the base was a color shift sequin. Not only did the colors for the shifting match somewhat closely to my Synesthetic colors, but it also conveys two separate ideas. The first idea is the fact that the colors shift depending on the light source and angle of the viewer. This imitates the fact that when it comes to self confidence, most people tend to shine differently depending on the situation. Where someone may be one shade in one situation, stepping into a different light or changing one's perception can create and reveal a whole new experience. The second idea is that no matter what the wearer is doing or where they are going, even the most mundane action will draw the eyes of others.

A cape was created to mimic the plumage of a peacock. Designed in the style of stained glass, this cape was to represent the fragile beauty of someone’s self confidence. Stunning as light plays across the surface, but so easily shattered by an errant disturbance. A headpiece curls around the eyes of the wearer, branching off above the head into a pointed and jeweled peak. Peacock feathers rest at the back of the head, wrapped in shining vinyl. Resting on the neck is a golden collar, inset with the same design as the belt accent and headpiece. These intricate designs draw from the deep and true understanding one has to have of themself to grasp true confidence. On the feet are platform shoes that shine with the same tones as the jumpsuit drawing the eyes to the outfit from the head to the feet.
Confidence Phase 2. Technique and Execution

The pattern for the doll was created by first draping the body with muslin. A combination of stretch and non-stretch material meant the original pattern needed to be non-stretch before being altered to account for the stretching of the other material. The process of draping the design went through three separate attempts before being satisfied enough to create the first mockup. Two separate mockups were created before the final pattern was approved. The lining of the jumpsuit being the non-stretch meant it was assembled first. The outer shell of the jumpsuit included the tedious process of hand stitching it to flatter the form, flipping it to check the outer seams, and removing excess fabric. This was repeated many times to achieve the correct fit. Once this was done, the jumpsuit lining was attached at the bottom of the flares and secured inside. Draping the front of the bodice was not something that could be done in the muslin stage, so this is where that step comes in. Working with small scale and large sequins posed the difficulty of avoiding bulk, and this ended up changing the design slightly to keep a similar look while still being flattering. After the draping was secured, the edges were all rolled and hand stitched to create a seamless finish and prevent the loss of sequins.

Shoes were crafted from the base of a scavenged set of doll shoes that had been stripped, sanded, and painted to match. The boots themselves were drafted out of muslin before being cut and assembled from a colorshift vinyl in the same color scheme as the jumpsuit fabric. A zipper was installed in the back of the shoe and painted to match. A belt was cut from the same fabric as the jumpsuit and a decorative belt buckle was added. This piece matched both the metal detailing
in the headpiece and the sculpted collar, all painted gold with the original turquoise stones left exposed. The headpiece was sculpted out of two part apoxie sculpt directly on the doll to ensure a snug fit. It was then sanded, painted, and bejeweled. The original headpiece was damaged and was remade to include more curved details, a metal accent piece, and different colored jewels. Peacock feathers were gathered into a fan and placed at the back of the head, balancing out the bulk of the tail cape.

The tail-cape features stained glass styled peacock feathers in a size gradient from the waist of the doll down to the floor. Twenty seven total feathers were used, ranging from eight inches tall to one and a half inches tall. The design was drafted in paper, then in muslin, and then turned into a paper pattern. There were six different sizes of feathers, with separate pattern pieces for each shape within the feather. These shapes were cut out of different materials and adhered with double sided interfacing. Once the amount of feathers and the layout of the cape was confirmed, each featherhead was hand painted with fabric paint and lined with black satin bias tape to create the lines to mimic stained glass edging. They were stitched to a black base that was cut down to size and mounted on the back of the waist using hooks.

*Confidence Phase 3. Final Design*

The final design of Confidence was relatively simple. The base includes a full body jumpsuit with an asymmetrically draped bodice and enormous flared bell bottoms. The fabric used was a color-shift sequin using the colors green, blue, and purple. A belt with a golden metal piece was accented by a golden collar holding a similar metal piece. A headpiece curled around the sides of the face, using curls and peaks to draw the eyes upwards to the fan of feathers on the
back of the head. Peacock feathers in the form of stained glass designs fan down from the waist in a show of power, framing the legs and emphasizing the flares.
Confidence Design

Figure 15. Rendering of Confidence Design (Trujillo, 2021)
Confidence Fashion Flats

Figure 16. Digital Rendering of Confidence Flats
Confidence Process Photos

Figure 17. Confidence Muslin Draping

Figure 18. Confidence Muslin Mockup (Trujillo, 2021)
Figure 19. Stitching Confidence Lining (Trujillo, 2021)

Figure 20. Confidence Lining and Final Fit (Trujillo, 2021)
Figure 21. First Version of Confidence Headpiece

Figure 22. First Full Confidence Ensemble Try on (Trujillo, 2021)
Figure 23. Confidence Stained Glass Cape (Trujillo, 2021)

Figure 24. Confidence Hair Detail Shot, Styling done by Gennevieve Wright (Trujillo, 2021)
Confidence Final Photos

Figure 25. Confidence Final Outfit (Trujillo, 2021)
Figure 26. Confidence Final Outfit, Back shot (Johnathon Crick, 2021)
Figure 27. Confidence Shoe Detail Shot (Trujillo, 2021)

Figure 28. Confidence Head Detail Shot (Johnathon Crick, 2021)
Design 3: Vulnerability

**Figure 29. Vulnerability Synesthetic Representation**

*Vulnerability Phase 1. Design Concept*

**Definition:** Capable of being physically or emotionally wounded (Marrium-Webster, 2021)

**Description of Synesthetic Experience:** A pale yellow with soft golden tones crawling across it. Bright spots dance around, drawing attention to different bits and pieces across it.
Pantone Colors:

-Primrose Yellow: 13-0755 TCX
-Cloud Dancer: 11-4201 TPG
-Elfin Yellow: 11-0620 TCX

Figure 30. Pantone Colors of Primrose Yellow, Cloud Dancer, and Elfin Yellow
(Pantone, 2021)

The emotion explored here is one that combines the delicate nature of baring oneself to the outside world and the strength it takes to allow others to see us at our weakest. Vulnerability is the willingness to let others in, to show ourselves at our barest and open ourselves up to the possibility of being hurt. The inspiration chosen for this was a bit different from the other two, as it was a bit of a combination of two meanings merged into one. The first comes from a yellow rose and its delicate flowers. Beautiful and tempting to touch, but so very easy to break apart and destroy by accident. The second inspiration was the use of bones as a type of armor. The fragile nature of the flower combined with the desperation of using bared bones to protect oneself shows the dichotomy that exists in this emotion.

Design details that were used to convey this emotion include pale yellow chiffon. The flowing nature of the fabric lends itself well to that of a flower petal. The very fabric itself is
fragile, fraying at the edges as it desperately holds itself together in a show of strength. The corset is french seamed and in theory would have been boned, but with it’s small size the french seam gave it the structure it needed. None of the pieces are attached to one another, giving a sense of detachment and being pieced together to create the full picture. Sleeves that puff out and take up space are so transparent they hide nothing from view. Small flowers made of organza wind themselves around the skirt of the outfit, weighing it down but drawing light to themselves. Pearls were used as an accent alongside the gemstones, as it goes to show that sometimes the most sparkly parts are not the most important. The headpiece spirals out in rays, drawing the eye up to the face that is masked in protection by the sculpted skull. A dainty and glittering rib cage surrounds the chest as it makes a show of attempting to protect itself.

_Vulnerability Phase 2. Technique and Execution_

The corset was drafted onto the body using the same chiffon that would be used as the final fabric. This was to ensure that there would be no extra bulk to make up for as there would have been if a standard muslin had been used. Each piece was carefully hand stitched, seam lines drawn, snipped apart, and transferred to paper. The chiffon was cut with newly sharpened scissors to avoid shredding and was each piece was french seamed to contain the fraying edges. The skirt was hand gathered to a waistband, but purposefully frayed with a seam ripper. The sleeves were french seamed and gathered with a very thin elastic cord. The bottoms were created out of flesh toned stretch material.

The flowers were gathered via machine and hand before pearls were placed into them. They were pinned to the skirt before being stitched down. The ribcage and skull mask were
sculpted from Apoxie sculpt directly onto the figure to ensure proper fit. They were both heavily referenced off of medical diagrams to ensure accuracy. After drying, they were sanded and painted. The ribcage was attached with fishing line, while the skull mask was adhered with double sided tape. The headpiece was created with wire, zip ties, and glue. The wire was cut the desired size and shaped before adding the zip ties. After gluing the zip ties into place, the headpiece was painted and hand stoned. Stones were also placed along the skirt and sleeves, glued only to the top layer to allow continued movement. Glittering ribbon was added to the waistband, sleeves, and created the straps for the top. A pearl necklace and anklet were strung and tied in place.

*Vulnerability Phase 3. Final Design*

The design for Vulnerability seems simple, but is brought to life with the details and accessories added. The base outfit includes a golden chiffon skirt with a slit at the front right side that cinches around the waist with a glittering ribbon via velcro. The skirt is littered with yellow organza flowers with pearl centers and yellow stones. One pearl anklet peeks out from the slit in the skirt. A french seamed corset top closes in the back, held up by glittering yellow straps. Billowing sleeves poof out from the arms of the doll, trailing gemstones up as they go before being topped with that glittering yellow ribbon. On top of the chest rests a delicate and glittering ribcage and dainty pearl necklace. The bottom half of the face is covered by a glittering and smiling skull mask. A white headpiece radiates out from the dolls head, glittering white with yellow stones spiraling out.
Vulnerability Design

Figure 31. Rendering of Vulnerability Design (Trujillo, 2021)
Vulnerability Fashion Flats

Figure 32. Digital Rendering of Confidence Flats
Vulnerability Process Photos

Figure 33. Pieces of Muslin Drape of Vulnerability Bodice (Trujillo, 2021)

Figure 34. Vulnerability Pieces Sculpting (Trujillo, 2021)
Figure 35. Vulnerability Headpiece In Progress Photo

Figure 36. Vulnerability Finished Face Mask (Trujillo, 2021)
Figure 37. Vulnerability Finished Ribcage (Trujillo, 2021)
Figure 38. Detail Shot of Vulnerability Hair, Styling done by Gennevieve Wright (Trujillo, 2021)

Figure 39. First Full Ensemble Tryon (Trujillo, 2021)
Vulnerability Final Photos

Figure 40. Confidence Final Ensemble (Johnathon Crick, 2021)
Figure 41. Confidence Final Photo Detail Head Shot
Figure 42. Vulnerability Final Photo Skirt Detail Shot (Trujillo, 2021)
Full Look Lineup

Figure 43. Complete Look Lineup of Design Renderings of Vulnerability, Fury, and Confidence (Trujillo, 2021)
Final Look Lineup Photos

Figure 44. Complete Look Final Lineup of Dolls of Vulnerability, Fury, and Confidence
Design Contribution

This thesis will hopefully help Synesthetes and artists alike bridge the gap between themself and the world around them. By taking an intangible and abstract experience and translating it into a visual medium, it brings awareness to the fact that while these experiences may be individual it does not make them any less valid. Sharing my Synesthesia with the world has also helped me better understand the nuances of my condition and the way it has shaped the way I view the world around me. It is my hope that others will see these creations not simply as designs centered around colors, but as entire experiences themselves. I want them to put themselves in the position of these characters I have created and find it within themselves to discover these emotions in a new and unique way.

It is also my hope to bring awareness to expressing psychological differences through art forms. Where words fail to express emotion, art has always come through. I want to remove the limits people see upon themselves, their skill level, and the mediums they choose to use to explain and express themselves. Pushing their boundaries, trying new experiences, and truly getting in touch with themselves in order to share their thoughts, emotions, and experiences with others.

Reflective Critique

This thesis started as an ambitious dream with many grand plans that never saw the light of day. Being developed in the time as the COVID-19 pandemic hit, this thesis was not the only one that lost precious time and resources in its development. An entire semester of work and an entire summer was lost to quarantine and mask making. The return to school brought new
challenges: social distancing, online classes, and my own mysteriously failing health. Most of my semester was spent trying to juggle my schoolwork, finding the root of my health issues, and my suddenly failing hands.

With these obstacles in mind, something had to change. My thesis stayed the same, but the execution changed dramatically. Combining the need for social distancing with the concept of better control brought the idea of switching from human models to ⅓ scale models. Dolls have been used in fashion for centuries and more and more fashion brands were making the switch to save fabric and avoid the need for social distancing, so it seemed like a good move for me.

Design difficulties were everywhere I turned. As great of an idea as it was to move to the dolls, this ended up creating a whole new set of problems. Drafting for smaller bodies is a completely different skill set than drafting for standard human proportions. I had to relearn even some of the most basic skills, learning how to sew with the smallest seam allowances and pin pieces smaller than my fingers together. Patterns were harder to develop and the margin of error was impossibly small. Adding my newly fumbling fingers and shaking hands to the situation most certainly did not help. Individually, each design presented its own problems that had to be overcome.

For Confidence, the fabric I chose was nearly impossible to cut through with standard scissors. I went through three pairs of scissors during this project, and I found sequins in odd places for months after cutting into it. Draping pleats on a small scale was far more difficult than large scale and required far more fiddling than expected. The size of the sequins added extra difficulty as I struggled to reduce bulk in as many places as possible. A stretch sequin fashion fabric did not mesh well with a non-stretch lining fabric, and trying to remove an incorrectly
sewn lining from the sequin fabric without damaging the sequin pattern was tedious at best. Finding a closure that worked on this scale without sacrificing the design was difficult, and eventually led to velcro. That led to the issue of being difficult to sew in due to the thick nature of the plastic sequins. I broke a needle. The shoes went through 3 iterations before fitting on the doll, and the original headpiece was broken by the curious fingers of two year old twin toddlers. Authentic peacock feathers were gifted to me to use, but they broke far too easily and had to be replaced several times. The detail work required to create the cape would be difficult on a standard scale, but on a small scale seemed nearly impossible. Without double sided fusible interfacing, it would have been nearly impossible.

Fury was a beast in and of herself. Working with stretch is always an interesting experience, but doing it on such a small scale made any and every mistake visible. Velvet being such a thick fabric wouldn’t have made much of a difference on standard scale, but was frustrating to work around on such a small scale. Wooly nylon thread became my best friend, and the seam ripper was my worst enemy. The one piece in this entire thesis that defeated me, though, were the shorts. For some reason, lining these pants was impossible for me and took me 3 hours of pinning, stitching, ripping, flipping, and researching before finally getting them together. Of course, it was only after all of this work that I discovered I had, in fact, done it correctly the first time. With nearly one thousand jewels individually glued to this doll, I have several television shows and movies I can no longer unassociate with time spent on this project. Using the wrong size needle for the glue meant that every drop was a struggle to place. The hat brought the opportunity for me to learn millinery after I discovered that not only did a doll size pattern for that hat type not exist, it did not exist in full size either. Three hours were spent
drafting this hat, only to be scrapped. I decided to use the material from a commercially bought doll cowfolk hat as the base, and spent just as much time figuring out how to piece it together like a strange three dimensional puzzle to create the captain’s hat. The Electroluminescent wire originally chosen to create channels of lava through the outfit was too big and bulky for the tiny outfit, creating odd shapes when added to the velvet and was ultimately left off.

Vulnerability’s fabric, while pretty, was in fact very vulnerable. Cutting large pieces of chiffon is already difficult to avoid fraying and warping, but pieces this small could not be burned or serged. The entire outfit had to be french seamed to protect the edges of the fabric from fraying. The bodice pieces were so small and light that breathing in their direction made them flutter away. Thankfully, I had a large amount of masks on hand to help with that issue. My attempt at using a ruffling foot for the skirt was for naught, as the fabric was simply too fragile to handle the rough treatment that my home machine gave it. I also fit the skirt to the wrong doll, making the skirt slit a smidgen too wide for the one it was meant for, but out of fabric to fix it. The tiny flowers were tedious and constantly risked being eaten by the machine. Out of all of the flowers I cut and made, only half of them survived the trip through the industrial machine. The first headpiece was originally made of Apoxie sculpt, only to refuse to fit over the wig without awkward bulk. The ribs and face mask were sculpted directly to the dolls body, presenting two separate problems. The ribs were fragile and threatened to break (which happened later on after it fell off of a table) and the face mask had such intricate details I had to try three separate times before my hands would stop shaking long enough for me to paint it.

Overall, my biggest issue with my thesis was time. Not that I didn’t invest enough of it, but that everything took me at least twice as long to do. From typing, to drawing, to sewing, to
crafting, my hands struggled to keep pace with what my mind said I should have been able to do. The continuing (and mysterious) deterioration of my hands was a huge hurdle in creating this thesis, but it also almost made the end result even more inspiring to me. Even through all of these difficulties, I managed to somehow finish. Of course I have many things I would change if I could go back and do so. I also do not feel as if this project is complete, and actually plan on continuing my work on it outside of this project to further develop my other concepts into fully realized designs and creations.
References


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Vulnerability. (0AD). *Merriam-Webster*.