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SHIFT | MFA Thesis, Metal  
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My interest lies in the adaptability and persistence of the living world, particularly in the face of adverse conditions—like a young fern that unfurls through a small crack in the sidewalk. Patiently, the forces of nature endure and divergent forms arise. When I translate these synchronous moments into jewelry, hybrid shapes emerge, protrude, and proliferate to mimic the vigor of nature. While developing these structures, coupled with my affinity toward evaluation, process and patterning, I allow myself to make intuitively.

In this body of wearable jewelry, each material choice, mechanism, and color decision communicates intimately with one another; their relationship as necessary as the one that forms between the jewelry and the wearer. This further illustrates the idea of nature's resolve.

### **A shift in thinking**

For millions of years, shapes, patterns, and systems in the living world have successfully developed, adapted and evolved. This exemplifies persistence. While researching this natural phenomenon, I discovered the study and practice of Biomimicry, an innovative approach to problem solving, which replicates existing forms and systems in nature, providing solutions to human challenges in industries such as energy, agriculture, communications, architecture and medicine, to name a few.<sup>1</sup> Jane Benyus, author of *Biomimicry: Innovation Inspired by Nature* and co-founder of the Biomimicry

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<sup>1</sup> Benyus, Jane. "What Is Biomimicry? – Biomimicry Institute." *Biomimicry Institute*, 2018, [biomimicry.org/what-is-biomimicry/](http://biomimicry.org/what-is-biomimicry/).

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Institute said, “Learning *about* the natural world is one thing. Learning *from* the natural world—that’s the switch. That’s the profound switch.”

There are a number of examples to illustrate this profound shift in thinking. The protruding surface elements on the lotus leaf cause water to bead and roll off, taking with it dirt and particles, leaving the leaf clean. When these self-cleaning properties were identified and replicated in paint and coated surfaces, the same effect was achieved.<sup>2</sup> The structure of termite mounds warmed by the sun promotes ventilation throughout the nest, including the below-ground areas. Architect Mick Pearce mimicked the structure of the termite mound when designing the Eastgate Centre in Harare, Zimbabwe, which resulted in a building with similar ventilation properties.<sup>3</sup> A kingfisher bird travels through the air and then dives into the water with smooth efficiency, seemingly unimpaired by the abrupt change in pressure or substance. By mimicking the shape of the kingfisher’s beak, the noise problems inherent in Japan’s Shinkansen Bullet Train—due to abrupt air pressure changes when travelling out of tunnels—were solved, and allowed it to travel 10% faster and use 15% less energy.<sup>4</sup> It seems clear that we should look to nature more often as an endless library of lessons, answers and ideas.

Perhaps one of the most inspiring outcomes from the practice of Biomimicry is the merging of minds across industries and the realization that answers can come from the most unexpected sources. Through this practice, the living world has given us the confidence to fundamentally shift the way we think. This research has inspired me to

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<sup>2</sup> Benyus, Jane. “What Is Biomimicry? – Biomimicry Institute.” *Biomimicry Institute*, 2018, [biomimicry.org/what-is-biomimicry/](http://biomimicry.org/what-is-biomimicry/).

<sup>3</sup> Doan, Abigail. “BIOMIMETIC ARCHITECTURE: Green Building in Zimbabwe Modeled After Termite Mounds.” *Inhabitat Green Design Innovation Architecture Green Building*, Inhabitat, 29 Nov. 2012, [www.inhabitat.com/building-modelled-on-termites-eastgate-centre-in-zimbabwe/](http://www.inhabitat.com/building-modelled-on-termites-eastgate-centre-in-zimbabwe/).

<sup>4</sup> Benyus, Jane. “What Is Biomimicry? – Biomimicry Institute.” *Biomimicry Institute*, 2018, [biomimicry.org/what-is-biomimicry/](http://biomimicry.org/what-is-biomimicry/).

reconsider my own methods of problem solving, particularly when faced with challenges while making. If I am in need of a unique tool, or a material that has specific qualities, or a method to engineer a new style of link, I look far beyond the field of jewelry and metalsmithing for answers. Sometimes the most simple of solutions are uncovered by allowing the slightest shift in thinking.

### **Nature's forms and human response**

When architect Francesco Gaudí was commissioned to build La Sagrada Família in Barcelona, everyone questioned his methods and ideas.<sup>5</sup> “It looks like it was built out of bones, or sand, or like it just twirled out of the sea, like a fractal...” said Katie Mingle, producer and host of NPR podcast, *99% Invisible, Episode 281*.<sup>6</sup> Mingle goes on to mention how Gaudí was enamored with nature and, as a result, built-in several fractals and other patterns found in nature throughout the cathedral, during his time as architect. “He seemed to absorb essential lessons from the patterns and shapes he saw in nature. A dried out snake’s skeleton, a snail, a honeycomb—these were nature’s perfect constructions,”<sup>7</sup> said Mingle.

But, why are patterns found in nature so appealing?

Richard Taylor, professor of physics, psychology and art at the University of Oregon claims that value judgements which typically define beauty are not the only reason why looking at patterns in the natural world is pleasing. While developing a retinal lens to restore sight, he discovered a significant difference between current retinal

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<sup>5</sup> Mingle, Katie. “99percentinvisible.Org.” *99percentinvisible.Org*, NPR, 24 Oct. 2017, [99percentinvisible.org/episode/la-sagrada-familia/](https://www.99percentinvisible.org/episode/la-sagrada-familia/).

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

lenses based on digital camera technology and the human eye: the ability of a subject to achieve stress-relief through sight.<sup>8</sup> The human eye sees most clearly what is directly in front of it, and less so information in the periphery, whereas a camera-based retinal implant captures detail in an overall, uniform manner.<sup>9</sup> Unlike camera-based lenses, the human eye must continue to move, making use of fractal patterning, to ensure that the area of interest is positioned in a central location. It is this eye movement that can actually change how a person feels.

With an understanding of the connection between this type of eye movement and the resultant feelings of peacefulness and relief, one can also realize why looking at forms and patterns similar to those found in nature can induce positive and calming effects. Through the use of patterns and forms which have close associations to those found in the living world, I attempt to induce the same calm, soothing effect for those who view my work (*fig. 1, 2*).

### **How form and material communicate**

As my research progressed, I began to explore ways in which juxtaposition of form and material choices could communicate within a piece of wearable jewelry, and I looked at the work of others in the field in a more comprehensive manner. Much of Lucy Sarneel's work is closely tied to the perilous conditions facing the landscape of her hometown, Marken, Netherlands. Through jewelry, she investigates the ways in which the surrounding landscape—including the traditions of the people—have changed over

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<sup>8</sup> Taylor, Richard. "In May's Issue of Physics World: There's More to Implants than Meets the Eye." *Physics World*, May 2011, [www.iop.org/news/11/april/page\\_50684.html?xid=PS\\_smithsonian](http://www.iop.org/news/11/april/page_50684.html?xid=PS_smithsonian).

<sup>9</sup> *Ibid.*

time and “rarely exist in [their] original, unspoiled form.”<sup>10</sup> In an article written by Barbara Mass in the April 2004 issue of *Schmuck Magazin*, Mass describes the work of Lucy Sarneel as, “...hybrid forms that seem to grow wild.” Mass continues to define the quality of her forms by likening them to both flowers and truncated twigs, and industrial products and machine parts.<sup>11</sup> To the same end, Liesbeth Den Besten mentions, “This blend of mechanical and organic, manmade and natural, is typical of Lucy Sarneel’s power of imagination...”<sup>12</sup>

Sarneel uses the format of jewelry to communicate ideas. The hybrid forms that she develops call attention to existing paradigms regarding the authenticity and artificiality of nature. She does this by creating bold, abstract forms that have associations with both the plant world and industrial intervention. In addition, she includes both artificial and natural versions of the same material, which are intentionally indistinguishable from one another, to subvert the expectation of the viewer. In both instances—through her material choices and formal decisions—she is able to communicate her area of interest metaphorically. The investigation into Sarneel’s work led to a deeper understanding of how form and material could be used to communicate an idea. Because of this, I reconsidered my own methods, which led to a deeper resolve between my formal resolutions and my ideas around the persistence and adaptability of the natural world.

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<sup>10</sup> Mass, Barbara “Stille Tage Am Meer.” *Schmuck Magazin*, April, 2004.

<sup>11</sup> Mass, Barbara. “Stille Tage Am Meer.” *Schmuck Magazin*, April, 2004.

<sup>12</sup> Den Besten, Leisbeth. “Lucy Sarneel: Like Found Objects in My Mind.” *Metalsmith* | Vol.30 | No.2.

## Thesis body of work, *SHIFT*

While developing *SHIFT*, it was important for me to create a unique experience for myself as a maker, and for both the wearer and beholder of my jewelry.

The silver clusters began with several singular units that had been cut, folded, and riveted together, resulting in varying sizes and forms. The edge of a second unit was selected and attached by pushing it through the wall of the adjacent piece. Cuts, folds, rivets and tabs are mechanical processes and physical characteristics that leave the viewer with remnants of my making. The thinness of the silver was necessary because it conformed to the site of attachment which strengthened the visual relationship between adjoining units, giving it a living, growing sensibility. As the process continued, larger clusters revealed a proliferating pattern which seemed to have multiplied like a bunch of wild mushrooms (*fig. 3, 4*). The resultant form, though made from mechanical processes, looks like a collection of naturally grown elements.

The faux leather components multiply similarly around the smooth, central silver piece (*fig. 5*) and the indistinguishable color between these elements presented the need to more closely investigate the materials. Many observers at the opening reception had asked if the two materials were the same, but treated differently, and others wondered if the pieces were very heavy or quite light. I enjoyed seeing first hand how aspects of the work undermined their understanding of that which they saw.

The patterning and form development of the enamel linked pieces satisfied my affinity toward engineering and problem solving. I made several paper models to work

out the movement and tolerances between the links. Paper modeling not only enabled me to see how much the links flexed, but it allowed me to test the fluidity of a deep or shallow curve, and to scale the links to a size that appropriately draped over the shoulders.

Enamel was an integral element in the linked necklaces. The use of this rigid, glass surface on a necklace that is folded, linked and articulated doesn't seem quite possible. Because of this, it was important for the linking systems to be hidden, to perpetuate the curiosity toward how it was engineered and assembled.

The relationship that forms between the work and the wearer is also important to note. Many pieces are anchored to the body in a specific manner, but crafted with independently moving parts. Though the steel sphere bundle (*fig.6*) is a simple necklace that rests at the back of the neck, what is most noticeable to the wearer is the barnacle-like cluster that is cradled on the chest. The enamelled link necklaces (*fig.7*,) are designed to sit on the shoulder so that the draping pieces, on both the front and back of the wearer, can flex freely.

Through each small decision that I made while creating this body of work, I sought to capture the toughness of the living world and to illustrate it's unparalleled capacity to persist and adapt in the face of adversity. By creating tension between forms and materials along with the fluid relationship between the jewelry and the wearer, I was able to further emphasize nature's resolve. With a slight shift in approach, as we go on with our daily interactions, perhaps we can learn to manifest some of the admirable characteristics inherent in the natural world.



Image References:



Fig. 1



Fig. 2



Fig. 3



Fig. 4

Image References, continued:



Fig. 5



Fig. 6



Fig. 7



MFA Thesis Exhibition at the Dorsky.

