

Bonded

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Contextual Review

The initial drive for this project came from the research surrounding microfibers, showing that a single garment can shed more than 1900 fibers per wash (Browne, Crump, Niven, Teuten, Tonkin, Galloway, Thompson, 2011). Tiny fibers from synthetic clothing fail to break down and are likened to microscopic sponges, entering the food chain and carrying bacteria to animals and humans (Bruce, Hartline, Karba, Ruff, Sonar, & Holden, 2016). Designers and researchers in the field of Apparel and Textiles are seeking out biodegradable materials to produce garments and accessories, such as creating shoes from Kombucha grown leather or using materials such as burlap in the creation of stunning ensembles (Nam & Lee, 2016; Anderson, 2016). This led me to narrow my use of materials to natural textiles, sewing thread, findings, and closure systems.

Concept

The purpose of *Bonded* was to explore using quilting methods to encapsulate 100% cotton secondhand garments between layers of silk organza. *Bonded* is part of a larger collection that explored my personal history and temporary existence; reflected in garments that are similarly ephemeral and personal. This collection is comprised of fully biodegradable garments, using only natural textiles, thread, and findings. Each piece is displayed on a dress form created from a 3D body scan of myself and made from a biodegradable wood composite.

Process

A small series of samples were made to explore various quilting techniques (see Figure 1). The first sample was created by placing water soluble interfacing between two layers of silk organza and sewing 2" wide channels with an interlocking stitch sewing machine. The textile was then washed to dissolve the interfacing, dried, and the channels stuffed with .5" wide strips of secondhand garments. The overall effect created different sections of tonal value however the textile would have been too heavy and bulking for producing a garment. The second sample was made by placing water soluble interfacing between layers of silk organza and machine sewing 1" channels vertically across the sample, the textile was then washed to dissolve the interfacing and dried. The channels were evenly stuffed with yarns from an unraveled sweater and then the sample was sewn horizontally in 1" sections to produce a checkered effect. The sample was lighter weight, however, the use of water soluble interfacing was becoming less advantageous as information on its chemical composition or environmental effects was not readily available. For sample three, 2" to 4" sized pieces of secondhand textiles were placed between two layers of silk organza, pinned together and perpendicular lines were sewn 2" apart. However, the work was uneven as the silk organza shifted during the sewing process. The fourth sample was quilted by hand, done by sewing a single stitch and then tying the ends in a knot. These hand tied knots quilted 2" to 4" sized pieces of secondhand garments between layers of silk organza but the textile appeared visually heavy and disheveled. For the fifth sample a secondhand black cotton t-shirt was shredded, placed between the layers of silk organza, then hand knotted together with black cotton thread. The resulting textile was lighter weight, encapsulated the fibers, and the silk organza was able to lay flat.

Using the final textile sample as a starting point, a shirtwaist dress was created using flat patterning and draping methods. A double layer of silk organza was laid out, each pattern piece traced, and the layers basted together. Small handfuls of the shredded black cotton t-shirt were placed between the layers and then knotted together with black cotton thread. The entire dress was hand stitched and linen thread buttons made for a closure system.

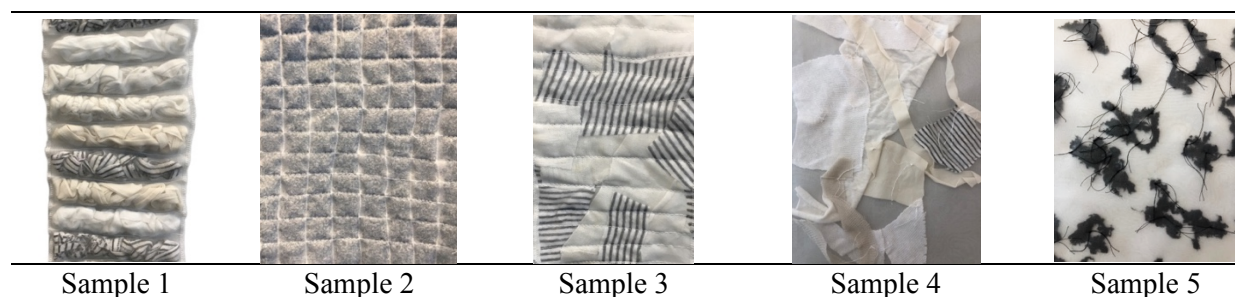


Figure 1. Samples made to explore the use of secondhand garments quilted between layers of silk organza.

Contribution

By exploring the use of natural and secondhand fibers through sampling this garment was able to achieve the objectives of creating a fully biodegradable garment using only natural textiles, threads, and findings and encapsulated the secondhand garments between layers of silk organza using cotton thread. This project provides knowledge about designing with biodegradable textiles and findings, in the hopes of developing garments that are as biodegradable as the bodies that wear them.

References

- Anderson, R. (2016). *If It Isn't Baroque, Don't Fix It*. International Textile and Apparel Association Annual Conference Proceedings. 1. http://lib.dr.iastate.edu/itaa_proceedings/2016/design/1
- Hwang, C. (2013). *Daffodils- Enduring Winter*. International Textile and Apparel Association annual Conference Proceedings. November. Retrieved May 2017 from <http://cdm16001.contentdm.oclc.org/cdm/compoundobject/collection/p16001coll5/id/17279/rec/2>
- Lee, J. (2017). *T-shirt Resurgence*. International Textile and Apparel Association Annual Conference Proceedings. 20. https://lib.dr.iastate.edu/itaa_proceedings/2017/design/20
- Nam, C. and Lee, Y. (2016). *RETHINK II: Kombucha Shoes for Scarlett and Rhett*. International Textile and Apparel Association Annual Conference Proceedings. 68. http://lib.dr.iastate.edu/itaa_proceedings/2016/design/68

