Wrangled Up: Repurposing level 4 'Intentionally Patterned' size adjustable girls' utility dress

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Key Words: Intentional patternmaking, Size adjustability, Sustainability

It is well documented that the apparel industry generates a large amount of textile waste, both in the production cutting as well as in the post-consumer/discard phase, which predominately end in landfills (EPA, 2019; Kozlowski et al., 2018). Some individuals choose to engage in consumer sustainable fashion practices, such as donating, swapping, mending, repurposing/redesigning, and others, that extend the life of their owned garments (Fletcher, 2016). The focus of this design and abstract aligns with repurposing, which is a process that utilizes discarded textiles to create new/renewed fashion products (Eike, et al., 2020), as it has been suggested as one solution to combat fashion overconsumption, and landfilled textile waste (Fletcher, 2008;Young et al., 2004). Additionally, size adjustable garments have been supported as a way to also reduce fashion waste (McKinney & Wei, 2020), particularly in childrenswear.

Irick's (2013) dissertation outlined an initial process for repurposing that has since been expanded to include four levels of repurposing that build in complexity and skills needed to execute the intended design. These levels include: 1) re-style to repurpose, 2) subtractive repurposing 3) additive repurposing, and 4) intentional patternmaking to repurpose (Eike et al., 2020). For this experimental design, level four, was selected as the design method, where a discarded clothing item was deconstructed and new product patterns were purposefully designed and cut to maximize use of available fabric, working within existing shapes to produce a minimal or zero waste design. Therefore, the purpose of this design was to employ level 4 of the repurposing design process, intentional patternmaking, to create a size adjustable childrenswear outfit, document the practices employed, and suggest ways to improve the process for future design work. The author developed a design protocol that aligned with the steps of the 'Repurposing Design Process' and carried out steps 1-5 while completing *Wrangled Up* (Eike et al., 2020, p. 197). Briefly, these steps included 1) research, 2) sourcing of repurposed materials, 3) deconstruction, 4) design development, and 5) production. *Wrangled Up* builds upon other repurposing design work of the author, (Eike, 2017, 2016, 2015) while also expanding on childrenswear adjustable design scholarship (Eike, 2020). *Wrangled Up* was made from a men's pair of Wrangler® slacks (100% polyester), size 36 waist x 34 leg inseam length, and a discarded men's belt (100% polyester) and was developed into a utility wear-style girls size dress that could fit children sizes 8, 10, and 12, respectively. Figure 1 showcases flat views of the original garment and belt before beginning the repurposing process (red circle indicates damaged area on upper right thigh area of pant).

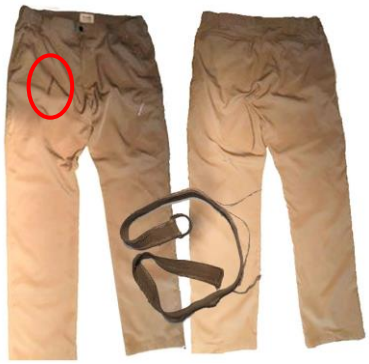
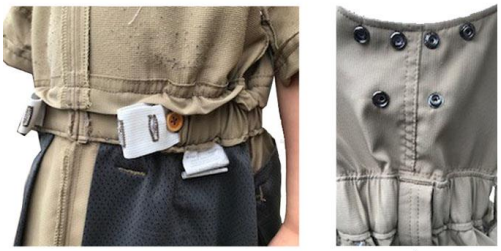


Figure 1. Original slacks and belt prior to repurposing.

In order to address the adjustability component of the childrenswear design, detailed measurements were taken of girls size dresses 6/6X – 12, patterns were drafted, and different methods were employed to execute fit needs. McKinney and Wei (2020) summarized different patternmaking methods for creating size adjustable garments and stated that strategies to increase sizes, particularly in childrenswear, has the potential to increase a garment's lifespan by adjusting and expanding to grow with the child. Gaines' (1916) patent proposed size adjustability at the waist by means of a cord running inside a fabric channel (casing) where the cord could be cinched or released and secured with a fastener to control excess fabric. *Wrangled Up* utilized this approach with elastic applied with a series of buttonholes at 1" increments that could be cinched or released and secured in place with a button (see figure 2a). Likewise, adjustability was included to accommodate fit/excess fabric under the arm by employing approaches similar to what Padernacht (1911) outlined in their adjustable coat patent, however, employing the use of snaps rather than hooks-and-eyes to assist in fit (see figure 2b). In order to combat the issue of bulky underarms, the raglan sleeve was not closed, allowing for underarm/side seam size adjustment without impacting the sleeve. In total, adjustability was addressed along the waistline through adjustable elastic casings (4) and belt, underarm/side seam through snaps, and sleeve width along hem through a belt-like approach.



a b

Figure 2. Sample of adjustability in garment

After completion of the utility dress, a zero waste pattern cutting technique, tessellation (Carrico & Kim, 2014; Saeidi & Wimberley, 2018), was used to cut petite hexagon shapes from the remaining small pieces of textiles to create a honeycomb patch to cover the damaged area on the original pant. To balance the patch on the skirt portion of the dress, a smaller honeycomb patch was created and applied to the upper left sleeve area. Remaining textile waste totaled only a small handful of textile scraps less than 1" in size. *Wrangled Up* utilized neutral color values of tan and brown along with different woven weights of polyester (body of dress and belt) to create a balanced and harmonious ensemble that is size adjustable. *Wrangled Up* met the aims of the design scholarship project by contributing to the body of sustainable design research, particularly repurposing. *Wrangled Up* employed a challenging patternmaking approach in which new product patterns were intentionally designed and cut to utilize available fabric, working within existing shapes while also producing a size adjustable garment.

As recommended when performing intentional design repurposing, a fairly simple design (tubular silhouette with raglan sleeve and mandarin collar) was selected for executing *Wrangled Up*, which reduced time spent in the deconstruction and production phases (Eike, 2019). Sourcing slacks that have smaller back pockets would have allowed for adjustability to fit size 6/6X, as the smallest fit settings led to excessive bulk (caused by pockets) in the rear area of the dress. Alternative solutions for addressing initial garment damages/blemishes should be explored. Replicating this experimental design will most likely yield a faster production time, which will intern reduce overall costs, making repurposed clothing attainable to more consumers and assist in textile waste diversion while advancing design scholarship.

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