



**Zippering Through Time:
*Extending the Life of Children's Wear with Transformable Design***

Michelle Park¹, Ja Young Hwang², Haviyet Huong³, Shalia Johnson⁴, Yahan Qing⁵
Kent State University, USA

Key Words: Transformable, Expansion, Sustainability, Children

Introduction. Raising children is expensive, and according to research described in the American Sociological Review, 87 % of women and 81% of men will become parents at some point in their working lives (Waldfogel, 1997). Parents of 73.6 million children in the United States currently purchase children's wear every year knowing that in a few months it will be too small (Census, 2017). Because this causes much frustration for many parents and also requires expenditure of both money and shopping time, many parents are trying different approaches to saving money by purchasing clothes from second-hand stores or purchasing larger clothes that can be worn for longer times. To deal with this issue, this project is focused on seeking to address the problem of children outgrowing their garments too quickly by designing transformable garments to be used for multiple purposes, in particular a transformable waterproof baby carrier cover/ children's poncho, a size-changing dress, and leggings to complete the outfit. The designed garment was based on client needs, and longevity was approached by transforming both size and function. Size was addressed by using zippers, panels, and buttons, and function was approached by selection of two items in the same category of use, i.e., as the child changes, so does the garment through implementation of strategic expansion points to effectively extend the range of use from infancy to six years old.

Method. The design process began interviewing a client. A qualitative approach of one-on-one, in depth, semi-structured interviews took place at the client's place for approximately an hour. During the interview, client was asked about insight on children's wear. She discussed kid's rapidly changing size and expressed concern over the environmental impact of children's wear. A specific struggle she identified was that of transporting infants in the rain while carrying all of their supplies. While another client had requested something that could easily be thrown over a baby carrier when running out the door in a downpour that represented another use. Illustrations were drawn by one of the designer, addressing this need for garment longevity approached in two ways. The first focus is on transforming function and the second on transforming size. Both designs were presented to the client and altered until all parties were finally satisfied with both function and aesthetic appeal. Three fittings were necessary during the process, one with a baby carrier and two with a toddler.

Results. Function transformation can be approached by selection of two items used as rain protectants. In this case, the two combined items are a rain cover for a baby carrier and a waterproof poncho. The garment has 5 inserts similar to a godet, but instead of sewing a point, they are sewn into the neckline with two-way zippers that allow the inserts to be expansion panels that when unzipped reach a diameter large enough to cover infant carriers. The shell and inserts are created out of Eco-Pul™, a waterproof, breathable, machine-washable and CPSIA

compliant material. The lining is made from fleece with a lady bug motif designed by one of the designers and digitally printed for this project. The hood can fold forward, closing the gap between infant and rain. When the child begins walking and no longer needs a baby carrier, the godets may either be zipped up for a better fit or left unzipped for styling purposes. The implementation of strategic expansion points in this garment effectively extends the life from infancy to six years. To address size, an expandable dress was constructed with a button attached on the left corner and another on the right corner at the inside of the dress's bib. Three buttonholes were placed on the end of each front strap and the buttons and buttonholes allow for adjustments to be made as the child's size increases vertically. To address the child's horizontal change in size, two expansion panels were added each side of the dress, both attached with two-way zippers. When zipped, the panels are contracted, and when they are unzipped, the dress increases in width. The dress is made from GOTS-certified 100% organic cotton peplum dyed both with red cabbage and a synthetic dye, achieving a playful tie-dyed appearance. To complete the look, leggings were subtle and made with the same print as the carrier cover/poncho's lining, and digitally-printed on Lycra Spandex.

Conclusion. The purpose of this project was to design garments seeking to address the problem of children quickly out-growing garments by designing a transformable garment that could be used for multiple purposes, in this case a transformable waterproof baby carrier cover/ children's poncho, a size-changing dress, and leggings to complete the outfit. The challenge presented by children quickly outgrowing their garments was effectively addressed by enabling the garments to grow with the child. This solution benefits parents by reducing accumulating costs up through the first 6 years of their children's lives. Sustainability is another benefit, because the increased garment value and longevity helps reduce the rate of landfill waste.



Front View Back View Side View Detail

References

Jane Waldfogel, "The Effect of Children on Women's Wages," *American Sociological Review* 62 (1997): 209.

United States Census Bureau. (2017, October 25). U.S. and World Population Clock, US Department of Commerce. Retrieved from <https://www.census.gov/popclock/>