

“THE CUT IS THE SOUL OF CLOTH” A DISCUSSION PAPER ON ZERO WASTE GARMENT

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Abstract

The zero waste garment concepts are a more popular concept that has been utilized by the garment manufacturers of the world. The technique of Kandyan period traditional garment making uses fabric optimally and many variations exist within the different upper body frilled collared jackets. This paper examines zero-waste design, a traditional linear cutting method practiced during the Kandyan period, as geometric pieces were used, leaving no negative space around the patterns: design activity that results in zero-waste garments. The objective of this study is to find the ancient system of zero waste dress practices of Sri Lanka. The survey was based on the actual female two jackets and a collar which are already kept in the treasures of National Museum of Sri Lanka, and visual representations depicted in mural paintings during the Kandyan era. Data collected through personal in-depth observational field studies. It helps to reveal subtle garment construction systems which utilized by an elite female subsequently. This study can be regarded as a successful example of the adoption of zero waste methods in producing garments for Sri Lankan industry. Further, this survey shows zero waste system that can be adopted and also for attitudinal practices as the beginning groundwork of good practices, inspiring rich cultural practices and all show the range of skills and resources that are available to us. The validity of data was much concerned from the beginning of the study and confirmed through cross-checking images with continuous literal data obtained from reliable primary and secondary sources.

Keywords

Zero Waste, Sustainability, Circular Collared Jacket, Traditional.

Introduction

Zero-waste design is a concept that attempts to eliminate waste fabric in the process of garment production. As many scholars identified that by utilizing zero waste concepts can be reduced 85% of fabric waste in production process. The most common method for manufacturing apparel, the average waste of fabric from the cutting process is 15% (Rissanen, 2011; Rosenbloom, 2010; Townsend & Mills, 2013). When utilizing the zero-waste design concept is a collaborative approach and synchronizing the creative thinking of fashion designer and patternmaker bond to a holistic approach to fashioning garments. Furthermore, designer needs to take an innovative approach to make forms and shapes of pattern necessitate innovative sewing, constructions of seam and closures in terms of produce garment with much aesthetics and functionally. To achieve the sustainability in designing garments zero-waste concept tremendously provides a creative pattern making challenge to both parties.

Methodology

The research employs a qualitative approach. The survey was based on the actual female two jackets and a circular collar which are already kept in the treasures of National Museum of Sri Lanka, and some visual representations depicted in mural paintings during the Kandyan era respectively. Historical details about the Kandyan dresses are well documented visually ever than early administrative eras. As well as there are plenty of visual records to study the background of this study setting such as sketches and descriptions made by observer – participants of the period. Mode of collecting data was carried out through personal in-depth observational studies carried out inside the museum. It helps to reveal subtle garment construction systems which utilized by an elite female subsequently. This study can be regarded as a successful example of the adoption of zero waste methods in producing garments for Sri

Lankan industry. Further, this survey shows zero waste system that can be adopted and also for attitudinal practices as the beginning groundwork of good practices, inspiring rich cultural practices and all show the range of skills and resources that are available to us. The validity of data was much concerned from the beginning of the study and confirmed through cross-checking images with continuous literal data obtained from reliable primary and secondary sources.

Traditional Clothing Has for Centuries Employed the Zero-waste Concept

Traditional clothing utilized the zero-waste concept in its design for many centuries.(Carrico, M., & Kim, V. (2014) Indigenous clothing of many cultures of the world has explored an ample of methods to minimizing the fabric and production labor.(Aakko, M., & Koskennurmi-Sivonen, R. 2013). Most examples are form the South Asian and far eastern cultures such as Indian sari, and Sri Lankan lower garment for both male and female known as cloth, a long cloth that is draped and wrapped around the body without being cut or stitched another example a Japanese kimono is also a zero-waste garment, however it is made by using cutting and sewing rectangle pieces of fabric (Lindqvist, R. 2015). These two styles examples have considerable fabric fullness, and neither style provides the tailored fit found in western apparel styles like dress shirts, blazers, and trousers. Thus the challenge for sustainably minded designers is to create styles with the potential for western fashion adoption within the parameters of zero-fabric waste (Gwilt, A. 2012). Reducing the waste generated is important because, as Ericson (2010) estimates, ‘the garment industry is responsible for 7 per cent of world carbon emissions’.

Sustainable Consumption of Clothes

This identifies sustainable fashion consumption as a set of things that are doings and sayings which are routinely performed and shared among consuming people in everyday life (Welch, D., & Warde, A. 2015). This indicates that sustainable fashion consumption does not need to consider isolating it but as a practice that exists in connection with a network of social practices (Spaargaren, G. 2011). Furthermore, sustainable fashion consumption involves various cognitive techniques, embodied knowledge, meanings, and material artifacts (Reckwitz, 2002).

Tradition

The concept of tradition is of utmost importance in every society. Tradition is never static; it is subject to change from time to time with internal and external cultural, economic and political forces. The accepted notion of tradition stresses the idea of handing down of ideas, objects, practices, assumptions, and values from generation to generation and at the same time tradition also implies reception by an active public, alert to both the imperatives of the past as well as the present (Dissanayake 2005). Ranathunga (2018) citing Edward Shills stated that tradition means many things, in its barest, most elementary sense, it means simply a traditum, and it is anything which is transmitted or handed down from the past to the present. As Ranathunga (2018) pointed out human actions are the vehicle by which tradition is transmitted. Shills (1981) stated the transcendence of the transience of physical artefacts such as statues, paintings, medals and books having per se no significant practical uses, are even more obviously constituted by the spirit or mind which resides in them. The relationship to them or their audience of readers and contemplators is not one of use; it is entirely a relationship of interpretation. Tradition allows constructing a narrative of the past, the present, and future on the basis of a certain present dealing with a certain past (Jones, S. 2002). The concept of tradition seeks to enforce certain values and assumptions and modes of behaviour (Schwartz, S. H. 1999). It is also regarded as a transcendental phenomenon and is seen to be endowed with certain timeless qualities. (Dissanayake 2005) Writings of Walter Benjamin (1982, 18) have underlined the importance of understanding tradition not as an ontological question but rather as one of political endeavour. Ranathunga (2018) further stated how culture plays a major role in the

journey of developing a unique tradition of a society. The essentialist attitude to tradition is interconnected with culture.

Historical Context

The Ethnography division at National Museum Colombo in Sri Lanka has accessioned in 1935 and 1933 a two female long sleeved jackets (35-175-190) and (33-20-126) an item of female clothing known as *manthe*, (33-20-126)(A circular collar) from Central province Kandy that demonstrates the variety of possible perspectives from which this dialogue can be explored. Elite young women who lived during early 19th Century at the Central province in Sri Lanka were used to embroider their jackets with traditional designs of blue and red threads as shown in the figure 2 and 3.



Figure 1: Parrots and creeper embroidery design (Coomaraswamy, 1956); Figure 2: Paintings of Medawala temple, Kandy; Figure 3: Paintings of Degaldoruwa temple, Kandy.

The figure 1 shows an embroidered design with flowers and parrots, probably in gold thread depicted in Medieval Sinhalese art by Coomaraswamy (1956). According to Coomaraswamy's description this is a part of a jacket sleeve, copied from one side to have been worn by a queen in the 18th Century; it is of particularly admirable design. He further stated that there were other two similar cotton jackets, each with a collar, the one embroidered with blue and red cotton, the other with red cotton and gold thread in his own collection. The latter has at the back, an embroidered design of Bo-leaf and two birds affronted. Varieties of collared jackets can be seen in temple paintings of the Central province during the 18th Century as shown in figures. According to temple paintings it is shown that white colour collared jacket with red and blue embroidery work, decorated lower body wrapped cloth, and rosette of jewellery was worn by the elite females during 18th Century of Sri Lanka.

Observation (i): Construction and Method of Decoration

Collar jacket Reg. No 33-20-126

All the seams of the jacket (figure 4) are made by hand stitched French seams (Heaton, L., & Baker, M. M. 2014). The front opening has width of 2 inch, blue colour hand stitch decorative effect to equal embroidery. The both front panels are 13 inch width and back view panel is about 9 inches width. The hems of the sleeve edges have decorated with flower and a Bo- leaf pattern. The vertical arm hole is decorated with 3 lines of embroidery. All points of weakness are strengthened (arm hole) by an embroidery design. The perimeter length of circular collar is 52 inches outlines 4 petal simple flower motif composed on geometric squares using blue colour cotton thread for embroidery. The edge of the circular collar has been further decorated by a crochet hand lace using a cotton thread. These motifs are finely sewn. A single piece of muslin is used to make the 7 inch width neckband 52 inches length, being embroidered flower and a Bo- leaf motif on around the collar decorated with hand embroidery, while the edge is hemmed by a crochet lace. The sleeve divided into 4 sections and composed embroidery on the sleeves.

The center front of the back panel of the jacket also decorated by the same embroidery pattern, whereas tiny embroidery pattern created on the lines of darts.

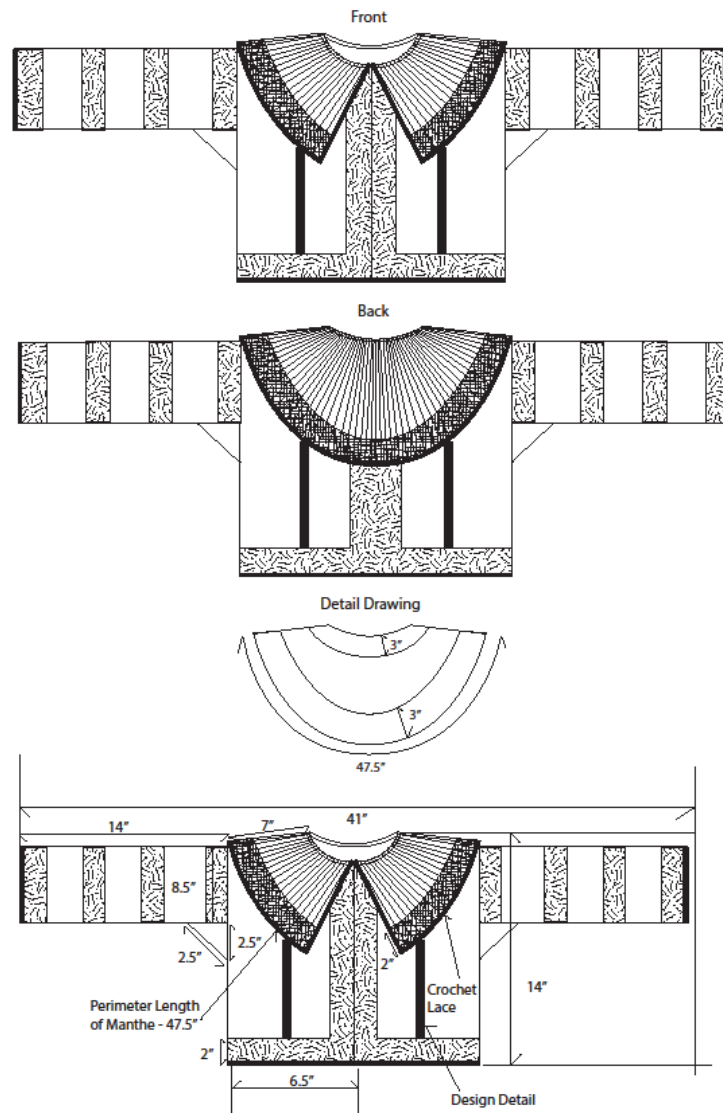


Figure 4: Technical and detailed drawing of jacket Reg. No 33-20-126.

Observation (ii): Shapes and Attachments of Sleeves

The sleeves are rectangle shape and full length from one sleeve hem to the other sleeve's hem is 41 inches. The rectangle sleeve is 14 inches long and attached vertical armhole height is about 8 and half inches. There are two gussets attached to vertical arm holes. An underarm gusset is a square fabric inserted between the body and sleeve of a jacket. Gussets (McCartney, J., Hinds, B. K., & Seow, B. L. 1999) are equal in length 2.5x2.5 inches.



Figures 5a and 5b: Back view with full circular collar.



Figures 6a and 6b: Back view (darts also embroidered); Decorative hand embroidered designs on the sleeve.



Figures 7a and 7b: detailed flower embroidery design of a Bo leaf and flower pattern around the collar.

2nd Jacket: Collar jacket Reg. No 35-175-190

All the seams of the jackets are made by hand stitch known as French seams. The front opening has width of 2 of an inch, blue and red colour hand stitch decorative effect to equal embroidery. The both front panels are 14 inch width and back view panel is about 16 inches width. The hems of the sleeve edges rolled and stitched by designed with embroidery, one-eighth of an inch wide, and hemmed in a continuous process to form a double line of pulled-fabric work, one-sixteenth of an inch wide. Vertical arm hole decorated with 3 lines of embroidery. All points of weakness are strengthened (arm hole) by an embroidery design. At the base of the circular collar outlines a more geometric simple motif, using folded and twisted loops to imitate ornaments on its outer edge. These motifs are finely sewn. The skill to produce an embroidered collar jacket, as perfect inside as out, is epitomized by the securing of the fabric. The gathered areas of circular collar have a vertical depth tightly gathered to form equal tiny pleats which characterize accordion pleats which are seams smocking.

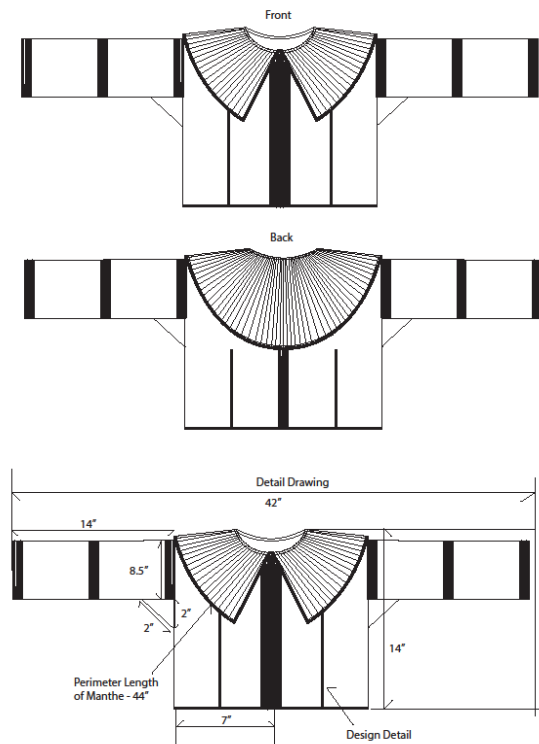


Figure 8: Technical drawing of jacket Reg. No 35-175-190.

A single piece of double lined muslin is used to make the 7 inch width neckband 44 inches long, being embroidered on around the collar

thread in a zigzag chevron, decorated with hand stitched embroidery, while the edge is turned in and hemmed. Given such attention to detail, it seems impossible that the buttonholes visible at the front opening. The embroidery at either end of the collar and the sleeves are marked by two lines of hem stitches, about one inch apart, with scalloped edges and containing another chevron formed by diagonal stitches. It is delicately worked with cotton thread.

Observation (ii): Shapes and Attachments of Sleeves

The sleeves are rectangle shape and full length from one sleeve hem to the other sleeve's hem is 42 inches. The rectangle sleeve is 14 inches long and attached vertical armhole height is about 8 and half inches. There are two gussets attached to vertical arm holes. An underarm gusset is a square fabric inserted between the body and sleeve of a jacket. Gussets are equal in length 2x2 inches, one side of the gusset is sewn to the sleeve, and the other side is sewn to the armhole. Gusset is cut on the bias. The depth of the gusset needs to also be determined- how much is needed to give the movement when raising the arm. The purpose of a gusset is to expand some parts of the clothing items— giving the wearer more space to move.



**Figure 9: inside view of underarm gusset; Figure 10: Designs on the vertical arm hole and edges of collar
Figure 11: outer view of the underarm gusset.**

Detachable circular collar Reg. No 33-20-126

This is a detachable collar which is worn separately to the female upper body jacket. It is 47.5 inches long 9 inches in width consisted of two parts. To achieved the enormous width, it can be assumed that the collar made by using two pieces which is 3 inches piece with attaching 6 inches width of fabric piece by using French seam. The collar finished with tiny accordion pleats by finishing a tiny piping.



Figure 8: Detachable circular collar; Figure 9: Design details.

Decoration

The collar is being embroidered on white muslin with red and blue cotton thread. There is a zigzag chevron pattern which has floral and creeper decoration, its lower edge is neatly hemmed in place.

Evaluating Sustainable Consumption of Fabrics in Designs

The artifacts which kept at the treasury of National museum Colombo show cased aesthetic dimensions in terms of beauty of the out fits are the most significant factors which created by having the geometrical patterns. The principle theory of utilizing fabrics for these jackets and a detachable collar are using the material in its entirety. It gives the strongly affects the style and form of clothing design. It is realized that the design process of these outfits utilized 100 percent of the material contributes to the form of the dresses. Contemporary fashion design and production has faced criticism for the wasteful way in which fabric is cut compared with, for example, the way fabric is used in traditional dress forms (Rissanen 2007). When fiber was scarce and textile processes were time consuming (e.g. hand-spinning and weaving) fabric was appreciated and expensive. Material was cut as little as possible and clothing was designed in order to avoid waste during cutting (Rissanen 2007). In these designs Zero waste method of cutting the fabric is link to an approach to combining fashion design and pattern-making. As Niinimäki and Bergqvist (2013) states that this method invoke designer to realize the body form as a three-dimensional sphere and suggest experiment in a new ways. The designing process of these outfits encompasses pre-consumer zero- waste stage where which shows an initial production eliminates the waste (Abd Elradi, W. 2016). Two general approaches fall under this category. The two jackets and a detachable collar show that it utilized the “geo cut” method with geometrical blocks. Waste Geometric Cutting "Geo Cut": This method based on using geometrical shapes as squares, triangles and circles this method has historical roots in, for example, kimono designs (Miinimaki, 2012). It was observed that the two jackets almost employed only two seams for joining the rectangle bodice piece and the rectangle piece of sleeve. By reducing the number of seams used in the construction of garment leads to eliminates garment manufacturing time and reducing energy consumption and labor. (Rissanen, 2013).

Discussion and Conclusion

The technology of tailoring the female jackets under study reflects the old remnant ideas on the necessity to protect oneself. Edging the collar and the sleeve bottoms with plaits, embroidery in the form of geometric pattern at the bottom hem, at the joint places of arm hole-inserts and sleeves with the body-part, and of sleeve-pieces with each other.

The process of female jacket modeling required special technical skills. Types of seams and stitches were adapted to sewing straight pieces of fabric, where cloths were connected with minimal seam allowance (one or two threads) for the sake of fabric economy and aesthetics. The connecting seams (along with their main function) also served as symbolic and decorative elements. The bodies of the jackets were made mostly of one piece of fabric. The bodies of the jackets were made mostly of one piece of fabric. This conservatism is explained not only by the predominance of manual labor, but also by the special attitude to clothing of the people who lived in the not-so-distant past. Historical materials provide evidence of the long persistence. This study can generate a new appreciation of textile materials in fashion design and create motivation for fashion designers to create textiles themselves. The current consumption and aesthetic preferences of the consumers are on unsustainable ground, and a new ethical consumer culture and radical changes towards sustainability are needed. Green aesthetics offers the possibility to combine environmental values with aesthetic experiences.

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