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2004

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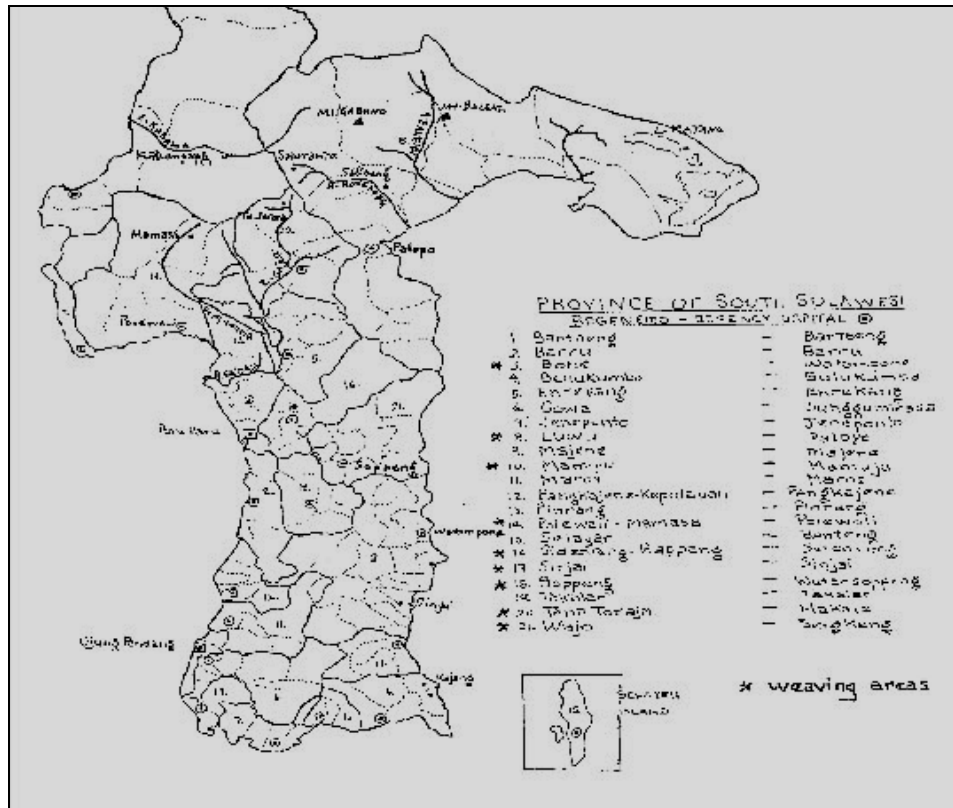
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# An Ethnographic Interpretation of Acculturation and Assimilation of Loom Technology and Weaving Techniques

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My fieldwork took place on the island of Sulawesi in eastern Indonesia, where the coastal and the mountainous regions are occupied by several distinct ethnic groups with diverse languages, customs, beliefs, kinship systems and social organization. This paper describes the weaving techniques and loom technology of one of these ethnic groups, the Sa'dan Toraja. I explored all the weaving locations on the island of Sulawesi and this helped me to locate the village of To'Barana' in Sa'dan Sesean (map).



*Map: South Sulawesi, Indonesia. Christou, 1997.*

Learning to weave in the village of To'Barana' enabled me to become familiar with the loom and the weaving techniques of the Sa'dan Toraja. I learned to weave on a back strap loom with a continuous warp, coil rod, and wove the supplementary weft technique. I observed and documented the technical details of the entire weaving process in the village setting. My knowledge of this topic is based on practical experience as a weaver and dyer, when applied in my fieldwork it greatly strengthened the reliability and validity of the data I collected in the field.

The social and cultural setting of my weaving experience made it possible for me to engage in the everyday life of the To'Barana' weavers. Living with an extended family created a situation that encouraged communication through natural conversation, and at the same time sustained relationships over the period of one year.

My hypothesis, in accordance with Bird (1960, 1963), Bolland (1971, 1979, 1991), Christou (1997), Frame (1982, 1986), and Niessen (1991), are that loom technology and weaving techniques may indicate cultural affiliation and relationships. With "gradual technological innovation different types of looms can sometimes be found within the same area" (Bird, 1960, p. 166). Based on my research on Sulawesi, I hypothesize that this is true from the island of Sulawesi where the variation in the loom types correlates with variation of weaving techniques.

In this paper I describe the Sa'dan Toraja loom as a variant of the body-tension loom with a continuous warp. I compare the Sa'dan Toraja loom to the other looms found on the island of Sulawesi. This is done in order to situate the Sa'dan Toraja loom in a historical time frame. I suggest the loom correlates with the materials and decorative techniques, and to a certain, but lesser extent, with design. This assemblage of material data offers insight into the culture history of Sulawesi.

My research findings support what Maxwell (1990) has shown, viz. that foreign cultural influences have been layered onto the indigenous material culture. They have entered via trade and marriage alliances. In the loom technology and the weaving of South Sulawesi, one can observe four historical layers of influence: (1) The Sa'dan Toraja indigenous culture, c. 4000-8000 years ago, is based on a traditional religion known as the *Aluk to 'dolo*, or the way of the ancestors (Mattulada, 1978; Volkman, 1985). The supplementary weft technique they use to make woven designs are based on stylized representations of human figures. Motifs also depict flora and fauna from the nature that surrounds Sa'dan Toraja. (2) The Dong-son art style of northern Vietnam, c. 2000-4000 years ago, is featured on the Sa'dan Toraja textiles in the form of rhomboid, hook and key motifs and patterns in a supplementary weft based on a variation of twill weave. (3) The Hindu-Buddhist cultural influence, beginning sometime in the 5<sup>th</sup> century AD., is visible in the adaptation of silk yarns and supplementary weft weaving and weft ikat. The final historical influence was the coming of Islam in the 1400's. The weavers that adopted the Islamic faith no longer depicted stylized humans and animals in their supplementary weft weaving.

On the island of Sulawesi there is four types of looms: the Sa'dan Toraja loom, the To'Rongkong and To'Makki looms, the coastal and interior lowland Bugis loom, and the interior lowland Bugis loom.

The Sa'dan Toraja loom is a simple back strap loom with a continuous warp used for plain weave textiles (fig. 1). However, it is altered when the weaver wants to weave continuous and discontinuous supplementary weft designs by the addition of two to four pattern heddles. I learned that the loom structure dictates the warping procedure. The warping methods are crucial to understanding technical details.

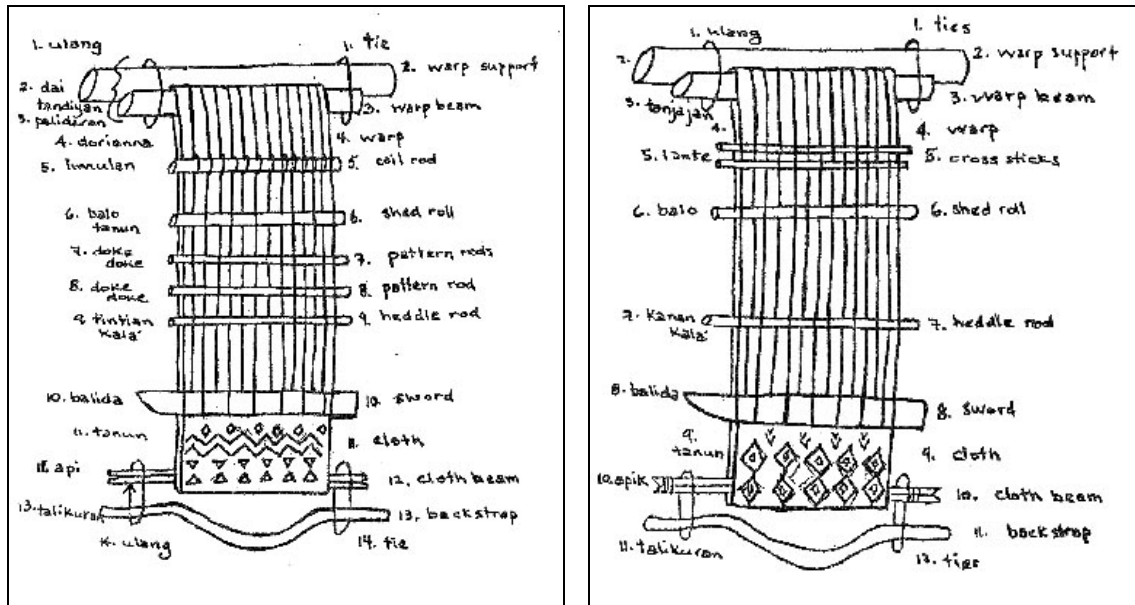


Fig. 1 (left). Sa'dan Toraja loom. Christou, 1997.  
 Fig. 2 (right). To'Rongkong Toraja loom. Christou, 1997.

In the Regency of Luwu, the To'Rongkong and To'Makki loom is also a simple back strap loom with a continuous warp (fig. 2). However, instead of the supplementary weft technique, the To'Rongkong and To'Makki weavers use warp ikat with cotton as their decorative technique. I found that loom Sa'dan, To'Rongkong, and To'Makki looms are identical, except that the Sa'dan loom has a coil rod to maintain the cross in the warp, whereas the To'Rongkong and To'Makki loom have cross sticks to maintain the cross in the warp. The designs are the same, but the decorative techniques used to make them are different, so they require different loom components.

The lowland interior loom and the coastal Bugis loom have discontinuous warps and cross sticks. However, the looms are different structurally. For example, the loom in Towali is a back strap loom with a reed and a sword and discontinuous warp. The reed is used primarily as a warp spacer, which is necessary when working with silk yarns. This type of loom may have come to Sulawesi after the 5<sup>th</sup> century AD during the Hindu-Buddhist influence because it was at this time that these looms and supplementary weft technique were used in Indonesia (Maxwell, 1990). The Towali weavers use both weft and warp ikat as well as supplementary weft technique.

In the interior and coastal lowlands I observed weaving with silk in the Regencies of Sidenreng-Rappang, Sinjai, Soppeng, and Wajo (see map). This loom found in the interior and coastal lowland is a Malay shaft loom with two foot treadles, reed, and no sword. Weft ikat in vibrant primary colours is woven on these looms.

It may be that the Sa'dan Toraja loom with a continuous warp is an intermediate loom between the To'Rongkong and To'Makki loom and the Bugis Towali loom because it has pattern heddles used to make supplementary weft designs. These designs are usually done on a back strap loom with a discontinuous warp. The To'Rongkong and To'Makki loom is perhaps an earlier invention because the use of warp ikat is said to be one of the first decorative weaving techniques used in Indonesia (Gittinger, 1977; Maxwell, 1990;

Hitchcock, 1991). However, the To'Rongkong, To'Makki, the Bugis Towali, and the Malay shaft loom all have cross sticks in their warp.

The Sa'dan Toraja loom does not always have pattern heddles in the warp, but it always has the coil rod inserted in the warp because it is an integral component of the loom. My data supports Rita Bolland's hypothesis that a loom with a coil rod is considered an old type loom (Bolland, 1971). She states that such looms make sacred textiles, especially when using cotton as the weaving medium. I would suggest that the Sa'dan Toraja loom is the earliest loom of all four looms found on Sulawesi. Further research in other parts of insular Southeast Asia is necessary to locate the Sa'dan Toraja loom more precisely in the range of technical possibilities offered by the back strap loom.

Given Maxwell's (1990) paradigm of historical layers of influence via trade and marriage alliances throughout the Southeast Asian archipelago, I suggest that Sulawesi looms are an excellent example of her hypothesis. Perhaps the Sa'dan Toraja loom is an indigenous invention like the To'Rongkong and To'Makki loom. However, only the Sa'dan Toraja loom has the additional heddles for the supplementary weft technique. This would indicate that the loom was altered by adding pattern heddles during the time of the Hindu-Buddhist period, or shortly thereafter, during the Islamic period, through marriage alliances and/or trade relations with the Islamic Sultanates.

It is possible to infer that through trade links and marriage alliances with court-based cultures on the coastal regions of South Sulawesi the supplementary weft techniques were incorporated into an existing repertoire of weaving. The supplementary weft technique on a back strap loom with a continuous warp, in cotton, only appears in the highland Regency Tana Toraja. The four villages of To'Barana', Matallo, Sangkombong and Sangkaropi are in the northern region of the Sa'dan Toraja Valley. I found that the high status Christian and Muslim families of To'Barana', Matallo, Sangkombong, and Sangkaropi have connections with Balusu'. The highest status family in To'Barana' has kinship alliances with the *puang*, prince/princess, in Balusu'. Historically, the high status Christian/animist families of Balusu' and the royal Muslim family in the Luwu' court had cross-cousin marriage alliances (Bigalke, 1981). This still occurs today, regardless of the difference in religious orientation.

The use of silk coincides with supplementary weft weaving and of supplementary weft ikat techniques. When silk is woven with supplementary weft patterns using gold and silver threads and weft ikat, it is known as *songket*. These textiles were made and used by royalty in the coastal Islamic royal courts of Indonesia. There were four royal courts in South and Central Sulawesi. The first royal court was in Luwu' called the Kingdom of Bone. The Bone royal court had extensive trade relations with Toraja highland peoples (Aragon, 1996). Further south on Sulawesi, the Islamic Sultanate of Goa was also a powerful royal court having connections with the Sa'dan Toraja (Bigalke, 1981). It is possible to hypothesise that it was at this time that the use of silk, supplementary weft patterning and weft ikat techniques reached the coastal and interior lowlands of South Sulawesi via these Islamic trade routes and political alliances. After all, the royal women wove *songket* textiles in the court palaces. These royal women brought their weaving talents with them wherever they went, and likely their looms as well. I argue that the Sa'dan Toraja maintained their looms and materials, but incorporated supplementary weft

weaving techniques, via trade and marriage alliances with the lowland court cultures in the Luwu' and Goa regions of South Sulawesi.

The supplementary weft designs found on the textiles woven in Sa'dan Toraja are based on an art style that is prevalent throughout the highland regions of Indonesia. These designs are discussed by Jager Gerlings (1952). Gerling's hypothesis (1952) is that the hook and key motifs are geometrical representations of the human body. He suggests that there is a correlation between these images and ancestor worship. I found that the Sa'dan Toraja use the same motifs Gerlings (1952) describes in their weaving. The Sa'dan Toraja religion is based on nature and ancestor worship, Aluk To'dolo. Textiles, wood carvings, metalwork, and beadwork are used in their life and death ceremonies honouring their ancestors. Gerling's hypothesis (1952) is significant because in the weaving of the Sa'dan Toraja, the *sekong* motifs are variations of the hook and key motifs. These are done in the continuous supplementary weft technique using the additional pattern heddles in To'Barana'. Thus, the weavers use supplementary weft weaving (a relatively recent technique, ie. ca. 5<sup>th</sup> century AD, or later), in order to weave ancient symbols. Here we see that a new decorative technique is creating ancient patterns and motifs.

The Dong-son art style is from northern Vietnam (Heine-Geldern, 1984). It is a bronze culture said to exist ca. 2,000 years ago (Ibid, 1984). Dong-son has dominated the aesthetic of the Toraja. It takes form in much of their material culture: beadwork, carving, painting, metalwork, textile techniques, and applique bark cloth. The designs on the bronze drums from northern Vietnam (one found on Selayar Island just south of Ujung Pandang is on display in the museum) feature incised twill patterns that are similar to the twill patterns found on the Sa'dan Toraja textiles. Here one may observe the pattern of influence of one culture's art style (and possibly decorative weaving technique), layered onto another culture's style. Thus, along with loom technology and decorative techniques, foreign design features have also been incorporated into the existing Sa'dan Toraja weaving.

For the purpose of further comparative research I use a description of a supplementary weft that is classified by Irene Emery (1980, p.140) as a compound weave: that is, a simple ground weave with an additional supplementary weft as decorative element in the textile. In Sa'dan Toraja both continuous and discontinuous weft techniques are used. Both weft techniques are called *pa'ruki*.

However, Sa'dan Toraja discontinuous supplementary weft techniques do not correspond to the usual definition found in the Indonesian textile literature, i.e., "nonstructural elements added to create a pattern or enrich a ground weave" (Bolland, 1980, p. 138). Instead, the discontinuous supplementary weft motifs are wrapped around a group of warps before being laid in the warp; therefore, they become part of the ground structure, as well as the decoration (fig. 3). The supplementary weft technique of Sa'dan Toraja is based on twill weave structures.

The insertion of the pattern heddle rod with a continuous spiral heddle cord (fig. 4) creates the effect of continuous and discontinuous supplementary weft patterning. The number of pattern heddles affects the technique, in that it either increases or limits the number of motifs and patterns possible. The pattern heddle rods are called *doke*.

The large sword, *balida* is used to beat the plain weave in between the decorative wefts, as well as enlarging the shed (when it is flipped up on its side). The Sa'dan weavers also use another sword for weaving supplementary weft techniques, referred to as *balida kecil*, a small sword. The small sword is used exclusively for the pattern sheds.

The heddles used to make patterns are different from the heddles used to make the ground weave. The supplementary weft pattern heddles have a spiral formation. This is due to how they are made. They are added after the warping is completed and the loom is set up, unlike the main heddles that are inserted during the warping processes that have alternate formation.

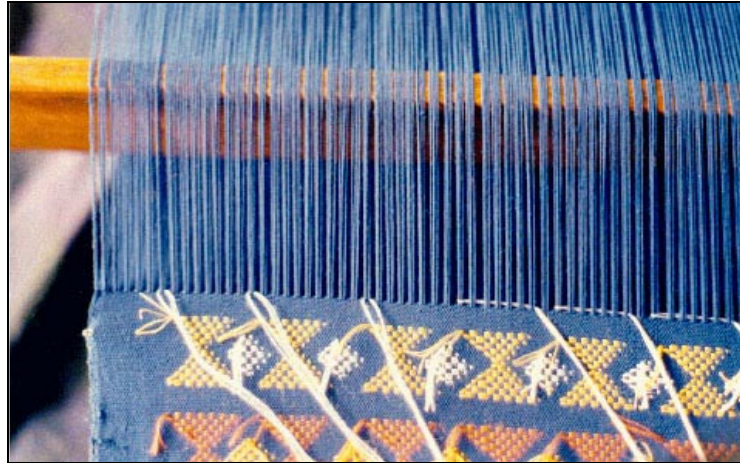


Fig. 3 (left). Sa'dan Toraja discontinuous supplementary weft weaving. Christou, 1997.



Fig. 4 (right). Insertion of pattern heddle rods. Christou, 1997.

For the supplementary weft patterning process the weaver selects an even and an odd set of warps from the natural and counter sheds. She inserts the first pattern heddle rod in the natural shed; and then she inserts the second pattern heddle rod in the counter shed. She then begins to count and pick warps out for her intended pattern and motifs. The weaver uses the coil rod as a counting guide, and a point of origin, for the warps to slip onto the pattern heddle rod. She selects two sets of two warps from the top of the coil rod and two sets of warps from the bottom of the coil rod for the first two pattern heddles, and then groups of four warps, i.e., eight, twelve, and sixteen, for the remaining two

pattern heddles. The number of warps in the heddle cord will determine the location of the patterns and the motifs. The coil rod is used throughout the weaving process to locate problem warps (figs. 1 and 4).

The Sa'dan Toraja of To'Barana' supplementary weft techniques are different from the ones discussed in the Indonesian textile literature. These are the three factors that appear to be unique to this area: (1) the coil rod is used as a guide to insert the pattern heddle rods and heddle cord, as well as maintain the cross; (2) the weavers do not remove the shed roll, *kabera*n once the four pattern heddle rods and accompanying heddles are inserted into the loom. Furthermore, the shed roll, is used in combination with the main heddles and the pattern heddles, and the large and the small swords. (3) The patterns and motifs are twill weave structures.

There is no data available on the supplementary weft weaving process and technology of the Sa'dan Toraja weavers. This paper is based on an ethnographic approach to cross-cultural textiles for the purpose of providing useful ethno historical information about the Sa'dan Toraja weavers. The loom technology and the supplementary weft technique I have researched may be compared as a whole to see if there is a pattern in their distribution. These technical weaving and loom details may be compared to other areas with same type of loom and weaving technique. This information in turn may provide clues of cultural affiliation, and relationships from the present and the past between two, or more groups of people who have weaving techniques as a common cultural and technological trait.

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## Acknowledgements

*I wish to thank the World University Service of Canada, the Alberta Museums Association, the Clifford E. Lee Foundation, the Brody Foundation of the University of Alberta Students Union, the Faculty of Home Economics and Department of Human Ecology, the Faculty of Graduate Studies and Research Travel Assistantship, Dr. Betty Crown, Dr. Sandra Niessen, my parent's Charalambous and Chrisoula Christou, and my husband Leo Newton-Mason for their generous and kind support. They made it possible for me to live in Indonesia from June 1993 to June 1994. I would also like to thank the Honorary Consulate of Indonesia for Canada, Mae E. Berkel-Ave for her cross-cultural insights and encouragement. Research at the University of Yogyakarta was made possible by Pak Dr. Koesnadi Hardjasomantri. Drs. Hardojoeno, Tuty Gandajih, Mohanned Askin, Burhansah, Rusli Ngatimin, M. M. Papayungan and Prof. Mattulada assisted me with my research at the Universities of Yogyakarta and Ujung Pandang. I appreciate the generosity and friendship extended to me by my adopted families in the village of To'Barana': Nene' Buahlolo, Nene' Rante' La'bi and Nene' Ratih, as well as Mama Erni. Without their constant attention and support, participant-based fieldwork would not have been possible in Sa'dan, Malimbong. I also want to acknowledge and thank my Indonesian weaving teachers, Nene' Butong, Nene' Juni, Nene' Titi, Nene' Ratih, Nene' Buahlolo, Nene' Ita, Mama Herosome, Ibu Tei Nonti, Nene' Normawati, and Om Manangka. With their guidance and encouragement I was able to learn supplementary weft weaving and document the entire process in its social and cultural context.*