



## THE POTTERY FROM GUA TOPOGARO, MOROWALI REGENCY, CENTRAL SULAWESI PROVINCE

### *Tembikar dari Situs Gua Topogaro, Kabupaten Morowali, Provinsi Sulawesi Tengah*

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Received: 16/01/2020; revision: 21/-01-24/04/2020; accepted: 25/04/2020

Published online: 15/06/2020

#### **Abstrak**

*Gua Topogaro merupakan salah satu situs dengan temuan berupa fragmen tembikar yang berada di wilayah Sulawesi Tengah. Penelitian ini bertujuan untuk mengetahui bentuk dan ragam hias pada tembikar Situs Gua Topogaro. Analisis bentuk meliputi profil dan ukuran. Sementara analisis ragam hias dilakukan dengan mengamati motif hias, teknik hias dan warna hias pada permukaan tembikar. Ditemukan empat jenis wadah tembikar yaitu periuk, kendi, tempayan dan mangkuk. Terdapat 57 motif hias yang dihasilkan dari beberapa teknik hias diantaranya teknik gores, tekan, cukil dan tempel. Penerapan warna hiasan putih ditemukan pada sebagian besar fragmen tembikar berhias. Dilihat dari bentuk dan ragam hiasnya menunjukkan bahwa, tembikar Situs Gua Topogaro mendapat pengaruh dari dua tradisi tembikar yaitu Tradisi Sa Huynh-Kalanay yang berkembang di Asia Tenggara Kepulauan dan Tradisi Lapita yang berkembang di Pasifik.*

**Kata Kunci:** Tembikar, Gua Topogaro, bentuk, motif hias.

#### **Abstract**

Gua Topogaro is one of the sites with pottery fragments findings in the Central Sulawesi. This study aims to determine the shape and variety of decoration on the pottery of Gua Topogaro. Shape analysis includes profile and size. While the analysis of the decoration variety is done by observing decorative motifs, decorative techniques and decorative colors on the surface of the pottery. There are four types of pottery that is pots, jugs, jars, and bowls. There are 57 decorative motifs produced from several decorative techniques including incised, impressed, excised and applied. The application of white decorative colors is found in most decorated pottery fragments. Based on the shape and variety of decoration, the pottery from Gua Topogaro is affected by two pottery tradition: the Sa Huynh-Kalanay Tradition that developed in Southeast Asia Archipelago and the Lapita Tradition that developed in Pacific.

**Keywords:** Pottery, Gua Topogaro, shapes, decorative motifs.

## INTRODUCTION

The pottery tradition in Indonesia is associated with the spread of Neolithic culture. So far the oldest dating has been found in Sulawesi, in West Sulawesi

Minanga Sipakko Site with a date between 3500-3800 BP (Simanjuntak, 2008). The dating of various sites outside Sulawesi, which is much younger, becomes a crucial

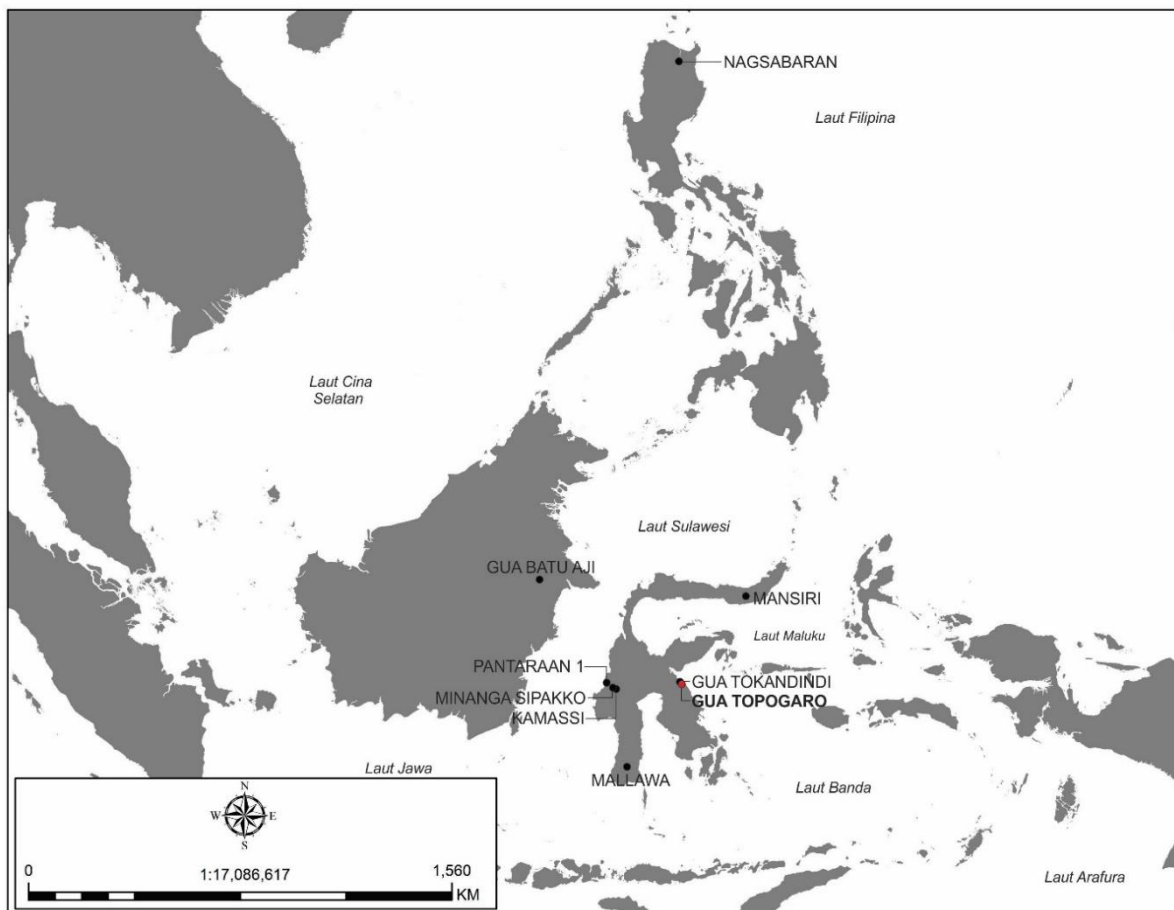
point to indicate Sulawesi as a starting place for the development of Neolithic culture before spreading to other islands in the archipelago (Simanjuntak, 2015).

Pottery is the most common Neolithic cultural product. The types vary greatly from small containers such as bowls, plates, and pots to large ones such as jugs. The manufacturing technology has greatly developed from the hands technique, anvil paddle to the technique of slow turning wheels recently. In addition they also apply some decorative motifs on pottery (T. Simanjuntak, 2015, pp. 28–29).

The research on pottery has been extensively carried out in almost all parts of Sulawesi, one of which is carried out by Hasanuddin at Mallawa, Maros (Hasanuddin, 2017). However, it is focused

on the west part, around Karama (river basin) Site. The other important sites to the east should never be ruled out. On paper, east part of Central Sulawesi is feasible to be a path of prehistoric human migration with a series of small islands extending from the Banggai Islands to the Maluku region.

Gua Topogaro is one of the sites located in the eastern part of Central Sulawesi (Figure 1). Administratively located on Topogaro Village, Bungku Barat District, Morowali Regency, of Central Sulawesi. Astronomically it is at 02° 17' 43.70" south latitude and 121° 45' 43.11" east longitude. Topogaro is a complex site located in a large basin of karst formation. This site is known in various names, including Gua Vavompogaro, Gua Topogaro and Gua Tamanoa. This site includes three



**Figure 1.** The map of Gua Topogaro and other sites mentioned on the texts (Source: Qalam, 2020)

larger caves (Topogaro 1-3) and four rock shelters (Topogaro 4-7). Both caves and rock shelters are at an altitude of 80-100 meters above sea level (Ono et al., 2019; Qalam, 2019). Archaeological findings at this site include pottery fragments, wooden tombs (soronga), ceramic fragments, stone artifacts, metal artifacts, beads, human bones and fauna remnants in the form of bones and shells of mollusc.

The interesting finding at the Topogaro is the discovery of dentate-stamp and lime infilled pottery (Ono et al., 2019). This decorative motif was once reported from Gua Batu Aji, East Kalimantan (Chazine & Ferrie, 2008), Nagsabaran, Cagayan Hill, Filipina (Carson, Hung, Summerhayes, & Bellwood, 2013), Pantaraan 1, West Sulawesi (Anggraeni, Simanjuntak, Bellwood, & Piper, 2014), Gua Tokandindi (Arsyad, 2017) and Mansiri, North Sulawesi (Azis, Reepmeyer, Clark, & Tanudirjo, 2018). The pottery with dentate-stamp is associated with other pottery which shows decorative motifs similar to pottery from sites at Karama River Basin area, West Sulawesi.

Based on the description above, the main questions of this research is: (1) How does the form of pottery at Topogaro look like? and (2) What are the decorative motifs of Topogaro pottery like?

Based from the above-mentioned research questions, the study aims to find out the form and variety of decorations applied on the pottery at Topogaro. In addition, a comparison of the pottery decoration at the Topogaro to the one found at Karama River Basin area will be explained to see similarities and differences.

## **METHOD**

The pottery used as primary data in this study is obtained from excavations conducted by Pusat Penelitian Arkeologi Nasional, Balai Arkeologi Sulawesi Utara and Tokai University Japan, in which the author becomes a member of the research

team. Of all excavation trenches in 2016, only one trench was used as data in this study, that is TP 2 trench located at Topogaro 7. In addition, surface findings from Topogaro 7 are also analyzed. TP 2 trench and Topogaro 7 surface findings are taken as sample because they present a great number of pottery findings and are more varied than other trenches, considered to be able to represent the existing pottery at this site. The pottery samples are selected by purposive sampling method, meaning the samples are considered based on certain consideration. Pottery rim fragments were chosen because they have strong attributes for the recognition of the shapes (forms) and types of pottery. The selected rim sample is believed to answer the questions related to shape and variety of decoration.

The total 75 fragments sampled consist of 18 plain rim fragments and 57 decorated rim fragments. It takes analyzing the entire samples to answer the questions of form, while answering the questions about decorative variations takes only 57 samples.

Shape analysis includes profile and size. Profiles pertain to the shape of the cross section which can be seen from the bottom or the rim of the pottery. The shape of the cross section is open, upright or closed. Size is related to the three-dimensional shape of the pottery such as diameter, thickness, width and length/height. Data generated from the form analysis are types and sizes of the vessel.

The decorative analysis includes observations of decorative motifs, decorative techniques and decorative colors found on the surface of the pottery. Decorative motifs analysis is carried out by looking at applied decorative motifs on the surface of the pottery. Decorative techniques analysis is done by observing slices on the surface of the pottery, while for decorative color analysis is done by observing the surface of the pottery. The identified decorative motifs will be related to the type of pottery.

In addition, the final section will explain the relationship between the pottery at Topogaro and the pottery from the Karama River Basin Area. Karama is chosen because it is one of the most important areas in the development of pottery culture in the archipelago. Pottery motifs at Topogaro will be particularly compared to Minanga Sipakko decorative motifs. Minanga Sipakko is one of the sites in the Karama region with the most diverse application of decorative motifs (Prasetyo, 2008, p. 84)

## RESULT AND DISCUSSION

### 1. The Form of Topogaro Pottery

#### The Vessel Type

Form identification is done by examining the rims of the pottery. The analysis indicates there are 4 types of pottery at Topogaro: pot, jug, jar, and bowl, all of it are common findings at archeological sites in Indonesia. Pot is a container whose body parts are rounded and hollow with the narrowed part of the mouth. The diameter of the body is usually wider than the diameter of the rim (Soegondho, 1993, pp. 70–71).

Based on the analysis, there are 45 pots found, divided into seven plain rim fragments and 38 decorated rim fragments. The diameter ranges from 6-17 cm and thickness ranges from 2-8 mm. Jar is the largest type of pottery, tall and widened, making the cavity deep enough. It is narrowed-mouth, thick-walled according to the size of its body cavity (Soegondho, 1993, pp. 72–73).

There are 15 jugs found, five of it is decorated rim fragments and the other 10 is plain rim fragments. The diameter ranges from 18-42 cm and the thickness ranges from 6-11 mm. Jug is a long-necked container with a narrow mouth. Jugs can be divided into jugs with a spout and those without a spout. Generally a jug has a flat or rounded base (Soegondho, 1993, p. 72).

Based on the analysis found four items of jugs, all of them are decorated rim fragments. The diameter are 4 cm and the thickness ranges from 4-6 mm. The bowl is a wide-mouthed, open convex vessel. The base is smaller than the rim, often having low, circular bottom (Atmodjo, 2011, p. 24). The analysis indicates one plain bowl fragment with a diameter of 16 cm and 4.6 mm thick.

### 2. Topogaro Decorative Pottery

#### a. The Decorative Motifs

The analysis of findings indicate eight decorative motifs, consisting of lines, dots, half circles, meanders, nail impressed motifs, anthropomorphic motifs, notches and wave decorative motifs.

1. A line is a flat stroke on a plane. It has flexible properties that can be drawn in various shapes and sizes. Line motifs in ornate pottery samples are found in various types: horizontal, vertical, slanted (diagonal), and zigzag. The line is the most common motif found in all samples. Of the 57 decorated pottery fragments identified, 53 of which (92.98%) are of flat scratch.
2. The dot motif is generally a collection of points which are usually used as decorative filling motifs. The pottery with decorative motifs consists of 16 fragments (28.07%).
3. The semicircle line is a type of decoration that results from a circle motif divided into two. This decorative motif is found in 15 decorated pottery fragments (26.31%)
4. Meander motifs consist of lines that are interrelated, rearranged continuously. The motif refers to the shape of labyrinth, found in three fragments (5.26%).
5. Nail impressed motifs, as the name suggests, are a type of motif made by

impressed nails on the surface of the pottery. They are commonly found on the rim of the lips or under the lips. Being analyzed are not only motifs falling under the category described above, motifs resulting from impressing the nails, but the entire curved line resembling a nail impressed arranged in a row and placed in the lower lip. This decorative motif was found in 20 decorated pottery fragments (35.08%).

6. The wave ornamental is the type of motif that results from pressing something on the surface of the pottery. The pressed surface has a rather continuous distance, producing a wave-like effect. It is found on the rims, especially on the lip. This decorative motif is applied to four pottery fragments (7.01%).
7. The wave ornamental is the type of motif that results from pressing something on the surface of the pottery. The pressed surface has a rather continuous distance, producing a wave-like effect. It is found on the rims, especially on the lip. This decorative motif is applied to four pottery fragments (7.01%).
8. The anthropomorphic ornamental motifs are those applying human forms either in whole or in part, found in one decorated pottery fragment (1.75%). That fragment has human face applied to it.

#### **b. The Decorative Technique**

The observation of decorative techniques is done by observing the decorated pottery wall slices. The form and depth of the slice can indicate the equipment and methods applied (Rangkuti, Pojoh, & Harkantining Sih, 2008, p. 53). The decorative techniques applied on pottery can be more than one, depending on the desired

motifs. The pottery of Topogaro, based on the findings, has some decorative techniques applied to it, there are incised, impressed, excised and applied.

The incised technique basically means scratching the surface of the pottery that is still soft with sharp or blunt objects (Rangkuti et al., 2008, p. 16). The surface of the pottery is scratched in sliced form, using a single-edged tool, producing various shapes of slices with unequal depths, coupled with many-edged tools resulting in slices with the same depth and images facing the same direction (Rangkuti et al., 2008, p. 53). This technique is found in 53 fragments (92.89%) with decorative motifs produced in the form of horizontal lines, vertical lines, diagonal lines, curved lines, half circles, meanders and some unidentified combined lines.

The principle of impressed technique is to press the surface (using fingers, nail tips, stamp, and the like) of the pottery that is still soft to form a desired motif. In a nutshell, while in motion, the pottery is pressed and lifted. This technique will leave features or traces of pressure without any part of the pottery being wasted (Rangkuti et al., 2008, p. 16). The impress technique covers (a) hitting, (b) puncturing, and (c) stamping (Rangkuti et al., 2008, p. 53). It is found in 32 fragments (56.14%) with decorative motifs produced in the form of nail impressed, dots, dentate-stamps, horizontal lines, half circles, circles and waves on the lip edge. There are eight fragments (44.03%) specifically applying the dentate-stamp technique, one fragment (1.75%) applying a round-tipped design and the seven fragments (12.28%), rectangular-tipped one.

The excised technique relies on a tool generally not sharp, but has sharp edges. The principle of this technique is to take out some surface of the pottery which is still

soft, giving the impression that there is a discarded part of the pottery (Rangkuti et al., 2008, p. 17). It is found in 14 fragments (24.56%) with decorative motifs produced in the form of holes, short horizontal lines and notches on the rim.

The fourth technique, the applied/applique one, has more to do with adding something to the surface of the pottery, anything taken as ornament with the help of mold or without (Rangkuti et al., 2008, p. 17). These patches are made with molds as desired. Some are also made without using tools (Rangkuti et al., 2008, p. 53). The applied technique is found in eight fragments (14.03%) with decorative motifs produced in the form of horizontal lines, waves on carination and anthropomorphic (human faces).

### c. The Decoration Color

The coloring is sometimes applied in several numbers to accentuate and enhance the decoration. The application of decorative colors in pottery is of the same motivation.

The analysis of the findings indicates that decoration with colors is greater in numbers than that without. The most dominant color is white, found in 35 decorated pottery fragments (61.40%). There are 22 fragments found without any color applied to them (38.60%). The application of color is intended to almost all basic decorative motifs and all types of pottery.

### 3. The Relationship Between The Vessel Type And The Variety of Decorations of Pottery

The analysis of decorative motifs indicates that there are 57 types applied to the surface of the pottery. They are applied to pots, jars and jugs. The most decorative motifs are found in pots, with a total of 47 decorative motifs (Figure 2), consisting of

simple decorative motifs and complex decorative motifs. The simple motifs cover zigzag lines; a row of irregular short lines; a row of right and left diagonal lines; a row of half circles forming a meander pattern; rows of applique decorative motif forming notches on its surface; a series of diagonal short lines framed by a horizontal line; a row of fine lines and points vertically and horizontally arranged; a row of vertical lines; a row of semicircles facing up; a row of short line and applique decorative motifs, a row of irregular short lines, and the arrangement of nail impressed motifs.

On the other hand, the complex decorative motifs found in the pots are: a series of diagonal lines that form a meander pattern framed by two horizontal lines and a series of irregular short lines; a series of lines that form abstract motifs framed by horizontal lines and filled with points in the space between the motif and the frame; two semi-circular series forming a meander motif at the bottom with a series of short diagonal lines; a row of diagonal lines above and under and vertical lines filled with dots, framed by horizontal lines; a row of short lines framed by a half circle. On the other hand, the complex decorative motifs found in the pots are: a series of diagonal lines that form a meander pattern framed by two horizontal lines and a series of irregular short lines; a series of lines that form abstract motifs framed by horizontal lines and filled with points in the space between the motif and the frame; two semi-circular series forming a meander motif at the bottom with a series of short diagonal lines; a row of diagonal lines above and under and vertical lines filled with dots, framed by horizontal lines; a row of short lines framed by a half circle forming a meander motif and two horizontal lines; a series of lines forming a labyrinth framed by two horizontal lines and a short line; and meander motifs framed by

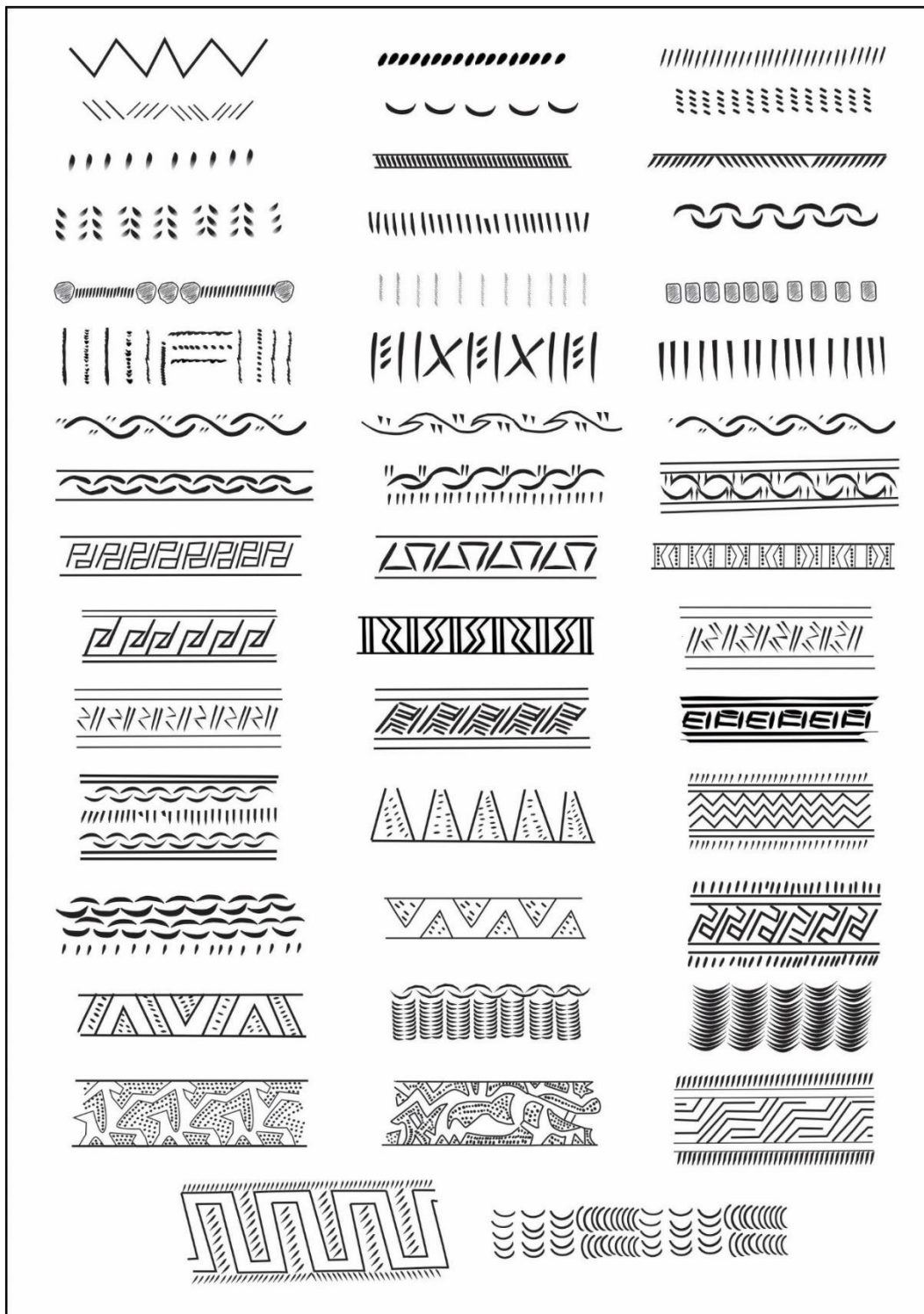


Figure 2. The decorative motifs on pots (Source: Qalam, 2019)

rows of diagonal lines and filled with diagonal lines in the space outside the motifs in the frame.

The jug has seven decorative motifs (Figure 3), consisting of: a row of right and left diagonal lines forming V and inverted V filled with dots and framed by two horizontal

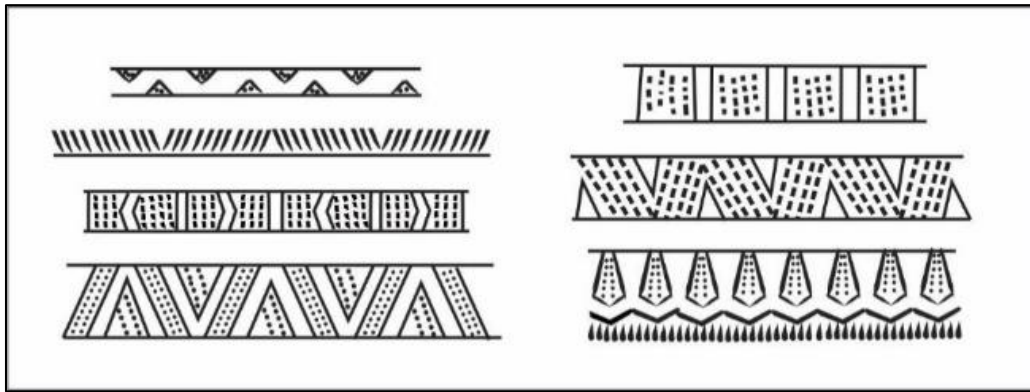


Figure 3. The decorative motifs on jugs (Source: Qalam, 2019)

lines; a row of diagonally right and left lines with horizontal lines at the bottom; a row of diagonal lines above and under and a vertical line filled with dots framed by two horizontal lines; a row of right-left diagonal lines forming V and inverted V filled with dots, between the two Vs are two double diagonal lines filled with dots framed by two horizontal lines; a row of double vertical lines filled with dots and bounded by horizontal lines at the bottom; a row of right and left diagonal lines forming the V and inverted V framed by horizontal lines, in the blank space between the frame and the V filled with dots; and a series of diagonal lines forming inverted kite motifs filled with dots,

at the bottom is a zigzag line following the kite motif framed by horizontal lines at the top, and a series of short vertical lines at the bottom.

There are seven decorative motifs found in jars (Figure 4.), namely: a series of short directional diagonal lines framed by horizontal lines; a row of decorative motifs and triangular motifs facing each other back; meander ornamental motifs filled with dots and framed by horizontal lines; a row of unidirectional double diagonal lines filled with dots; a row of two vertical lines filled with dots and framed by horizontal lines; a row of right-left diagonal lines filled with dots, between the two right-left diagonal

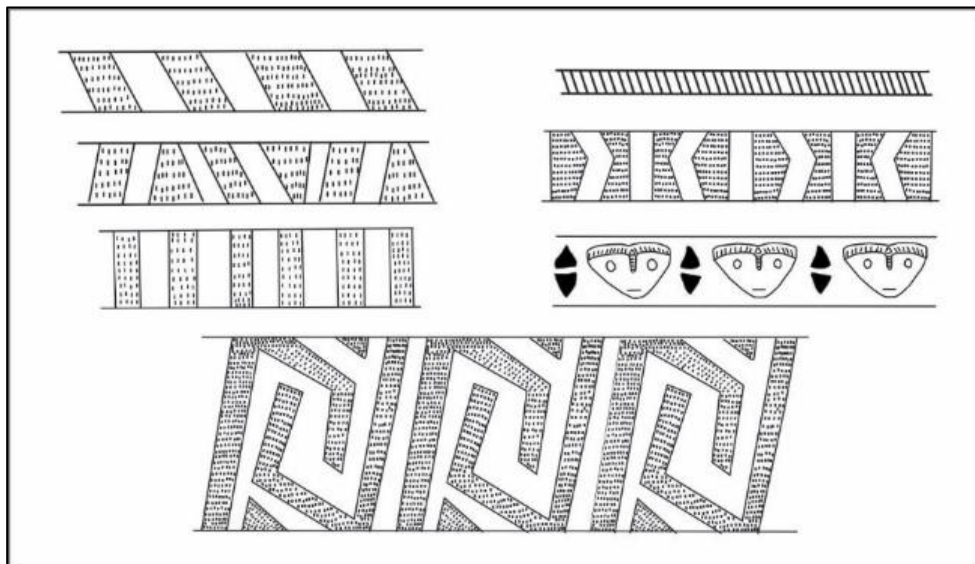
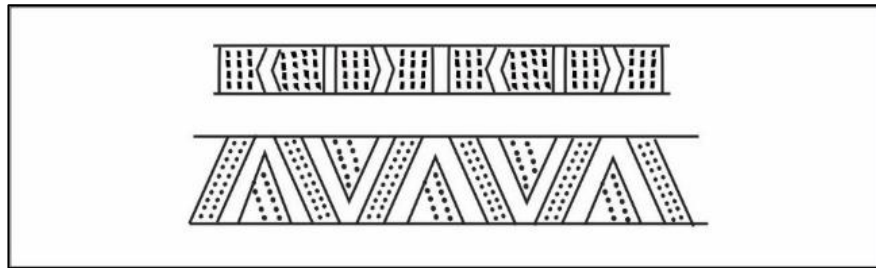


Figure 4. The decorative motifs on jars (Source: Qalam, 2019)





**Figure 5.** The decorative motifs on pots, jugs and jars (Source: Qalam, 2019)

lines are two double diagonal lines filled with dots; and a row of above-below diagonal lines and vertical lines filled with dots framed by horizontal lines.

There are two decorative motifs found on pots, jugs, and jars (Figure 5): a series of above-below diagonal lines and vertical lines with dots framed by a horizontal line and a row of right-left diagonal lines forming V and inverted V filled with dots, between the two Vs are two double diagonal lines filled with dots.

#### 4. The Comparison of Pottery from Topogaro and Karama River Basin

The Karama River Basin (West Sulawesi) is the area with the most important and oldest Neolithic site in Sulawesi. The study of pottery in Sulawesi is almost entirely related to pottery originating from Karama Karama River Basin. The pottery found at Karama River Basin, especially the Minanga Sipakko site, is affected by the Sa Huynh-Kalanay tradition, generally spreading in the Southeast Asian islands (Prasetyo, 2008; Simanjuntak, 2009).

**Table 1.** The Comparison of Decorative Motifs of Topogaro and Minanga Sipakko Pottery.

No.	Decorative Motif	Topogaro	Minanga Sipakko*
1.	Diagonal lines	✓	✓
2.	Circles	✓	✓
3.	Zigzag	✓	✓
4.	Triangle	✓	✓
5.	Notch	✓	✓
6.	Vertical lines	✓	✓
7.	Horizontal lines	✓	✓
8.	Lunates	-	✓
9.	Shell Impressions	-	✓
10.	Squares	-	✓
11.	Rectangular	✓	✓
12.	V design	✓	✓
13.	S design	✓	✓
14.	Dots	✓	✓
15.	Human faces	✓	-
16.	Dentate-stamp	✓	-
17.	Semi circles	✓	✓
18.	Spiralling	✓	✓
19.	Parallel lines	✓	✓

[Source: Prasetyo, 2008; Simanjuntak 2009; 122-123)

Presented in Table 1 are some similarities and differences of Topogaro pottery compared to that of Minanga Sipakko, viewed from decorative motifs applied (Table 1). The similarities are clearly evident in diagonal lines, circles, zigzags, triangles, notch, vertical lines, horizontal lines, rectangles, V design, S design, dots, half circles (semi circles), and parallel lines. The difference is that Topogaro pottery does not have such motifs as lunates, shell impressions and squares found on pottery at Minanga Sipakko.

The human face motifs and dentate stamps are not found at the Sipakko Minanga. Despite not being found at the Minanga Sipakko, they are found at the Kamassi. Generally, the motifs at Kamassi are not much different from those at Minanga Sipakko (Simanjuntak, 2009, p. 123). The dentate motif, found at Karama, is specifically located at Pantaraan 1, with the findings is two fragments of dentate-stamp pottery (Anggraeni et al., 2014, p. 748). The human face and the dentate-stamp are what Lapita culture characterized by. In addition, looking at the identified decorative motifs, we can see some repetitive motifs arranged in horizontal bands.

Lapita culture develops in the Pacific region, characterized by a red slip pottery which applies dentate-stamp, spiraling, repetition of motifs arranged in horizontal bands and human face motifs (Tanudirjo & Widiyanto, 2012, p. 273). The human faces and dentate-stamps in Lapita are related to ancestors as well as markers of social status (Chiu, 2005, 2019). Some sites in Eastern Indonesia have elements of the Lapita pottery tradition, including Melolo,

Lambanapu, Loweleba, Liang Bua, Maluku and Irian Jaya (Poesponegoro & Notosusanto, 2011, pp. 397–401).

The dentate-stamps found at Topogaro are fillings of certain motifs. Shows differencies from other pottery findings with the same motif from other site in Sulawesi. Pantaraan 1 in West Sulawesi (Anggraeni et al., 2014, p. 748) and Mansiri Site in North Sulawesi (Azis et al., 2018, p. 199). The two findings indicate that dentate stamps are taken as lines. In fact, in the Pacific Region where Lapita is developing well, they are both lines and fillings.

Two sites at Karama (Minanga Sipakko and Pantaraan 1) show an older date than the Topogaro Site (Table 2). The pottery from the Topogaro shows the dating from 400 BC to AD 140 (Ono et al., 2019, p. 128). The dating of Minanga Sipakko is c. 1900-900 BC (Anggraeni et al., 2014, p. 745), while that of Pantaraan Sites 1, 1100-500 BC (Anggraeni et al., 2014, p. 749). Other areas in the Pacific is generally developing at 1600-500 BC period (Spriggs, 2006, p. 119).

Based on the dating, the Topogaro is a Paleometallic site, supported by the findings of pottery associated with glass artifacts and metal artifacts (Ono et al., 2019, p. 128). The pottery fragments at Topogaro being associated with human bone fragments indicates that this site functions as a burial site. The jars found on this site might function as mortuary containers. While pots, jugs and bowls found at this site serve as burial goods. Jars containing bones and burial goods are generally known when metal-based tools develops (Poesponegoro & Notosusanto, 2011, p. 384).

**Table 2.** Dating of some sites in Sulawesi and Pacific.

Sites	Dating	Source
<b>Minanga Sipakko</b>	c. 1900-900 BC	(Anggraeni <i>et al</i> , 2014: 745)
<b>Pasifik</b>	1600-500 BC	(Spriggs, 2006: 119)
<b>Pantaraan 1</b>	1100-500 BC	(Anggraeni <i>et al</i> , 2014: 749)
<b>Topogaro</b>	400 BC – AD 140	(Ono <i>et al</i> , 2019: 128)

In addition to pottery being used as a mortuary containers, at this site also found wooden coffins (*sorong*). The burial systems are closely related to megalithic culture. The conception of the next life is one crucial element in the development of megalithic culture. The complex burial system accompanied by various rites and objects such as burial goods is considered to facilitate life after death. Megalithic and paleometallic cultures develop in the last centuries BC to the early centuries of the BC even in the kingdom period (Handini et al., 2018).

The burial system in Sulawesi relies on containers made of wood, stone and clay (jars). Jars burial are found at several sites including Leang Buidane, Talaud Islands of North Sulawesi (Bellwood, 1976; Bulbeck, 2017, p. 148), Pokekea site and Watunongko site of Central Sulawesi (Poesponegoro & Notosusanto, 2011, p. 423), Pantaraan site 1, of West Sulawesi (Anggraeni et al., 2014, p. 749; Bulbeck, 2017, p. 151) and a few more sites in Galesong and Selayar of South Sulawesi (Bulbeck, 2017, p. 151).

## CONCLUSION

The pottery tradition in Sulawesi is largely related to the Sa Huynh-Kalanay tradition developing in the Southeast Asian Archipelago. Pots, jars, jugs and bowls are the common forms of pottery found in Sulawesi. However, Topogaro has some rim fragments of carinated jars. Carinated jars is a common feature of Lapita tradition.

The decorative motifs are very much the same, closely related to the Sa-Huynh Kalanay tradition developing in Southeast Asia Islands and Lapita tradition in the Pacific. In general, decorative motifs applied

to the Topogaro pottery are from the Sa-Huynh Kalanay tradition. However, some fragments also indicate the influence of Lapita tradition, in the form of dentate-stamps and human face motifs.

The dating from the pottery layer of the Topogaro shows that it is younger than some sites in the Kalumpang area and other sites in the Pacific region. It is possible that at first this area is inhabited by people who adopt the Sa-Huynh Kalanay pottery tradition, following by Lapita culture much later. The statement is validated by the Topogaro site's decorative motifs showing more diverse motifs than the Karama's. However, when compared to pottery from the Pacific region, the Topogaro pottery shows a much simpler decorative motif. In the Pacific region, the sites of younger dating show a decline in the use of decorative motifs.

## ACKNOWLEDGEMENT

The data in this study are gathered from the excavations carried out by Tokai University in collaboration with Pusat Penelitian Arkeologi Nasional and Balai Arkeologi Sulawesi Utara in 2016. The author is indebted to Rintaro Ono Ph.D, who has granted permission to use the data. Credit is also due to Dr. Hasanuddin, M.A. and Prof. Dr. Akin Duli, M.A. who have given guidance throughout the writing process. Massive gratitude is sent to Balai Arkeologi Sulawesi Utara for the worthy contribution given. Last but not least, to fellow friends of Arkeologi 2014 having participated in this research, the writer owes you much.

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**Appendix 1.** Photo of the Karama River, a river connecting neolithic sites in the Kalumpang region, West Sulawesi (Source: Balai Arkeologi Sulawesi Selatan, 2011)

