

# Identifying Traditional House of Toraja Carving toward Geometry Transformation Type

\*Syukur Gusvianto<sup>1</sup>, Hamzah Upu<sup>2</sup>, Ahmad Talib<sup>3</sup>

<sup>1</sup>*Postgraduate Program UNM, Makassar, Indonesia*

<sup>2</sup>*Universitas Negeri Makassar*

<sup>3</sup>*Universitas Negeri Makassar*

\*Email: [syukurtammu@gmail.com](mailto:syukurtammu@gmail.com)

## ABSTRACT

This research was aimed to describe the results of the Toraja Culture that contains types of Geometry Transformation. Besides, this was also to describe the types of Geometry Transformation used to carve Traditional House in Toraja, which is Tongkonan. This research is qualitative research with an Ethnography approach. The informant of the study was a carver of the traditional house of Toraja. The data was collected from literature, observation, interview result, and the notes of Ethnography during the research, and also there were some pictures of the carving. The researcher used source triangulation to collect valid data. Based on the results, domain analysis, and taxonomy analysis, the carving is one of the Toraja cultures that contains Geometry Transformation. 4 types of Geometry Transformation are contained on the carving: translation, dilation, and rotation, and reflection. The type of transformation that is commonly used almost in the carving is translation. Many of the carvings had the same types, but it was put in a different place. The position of the carving between the first carving and other carving needs to be measured. Whereas the type of geometry transformation, at least in the carving of traditional Toraja, is the type of rotation transformation. This research also reveals the meaning of the carving of Traditional houses (*Tongkonan*), namely the symbol of social strata, economy, and there was hope for the Torajan people's life to be better. They are continuously growing up in togetherness for a better life.

**Keywords:** Identification, Transformation, Geometry, Carving, Tongkonan.

## 1. INTRODUCTION

Culture is a thing that can be used as a unique and distinctive identity for an area [2]. In Toraja, there are various types of culture, including the culture of traditional Toraja houses, namely *Tongkonan*. The house is rich in cultural elements. The cultural element that dominates the house is the unique and interesting carvings. These carvings are an expression of the religion of *aluk todolo*. *Aluk todolo* is a religious rule that becomes the source of culture and life view of Toraja ancestors that contains religious values and that directs behavior and relationships to *Puang Matua* (God)[2]. In his life, the Toraja tribe still maintains the customs and culture of its ancestors' heritage until modern times as it is today.

This carving is made using special carving tools that are very simple such as a ruler of a piece of

bamboo, nails, and a knife, and a piece of iron whose tip is pointed. The carving is made on wooden boards on the walls, poles, doors of traditional houses, tongkonan, and *reeds* (barns) with various motifs [4].

The carving motifs in Tongkonan House are inspired by celestial bodies, plants, folklore, animals, and folklore. Each motif in the carving of Tongkonan traditional house has its own meaning [3]. The motif also embodies the relationship between man and God, a man with his neighbor, man with nature, and animal with plants [6].

Related to the research, namely the exploration of Toraja culture, researchers are interested in conducting a study entitled "identification of the type of geometry transformation in the carving of Toraja traditional houses (Tongkonan)." Through the results of this

research can be utilized in the learning of students in the classroom.

The author of this title aims to understand what kind of geometry transformations are contained in the carving of Tongkonan traditional houses. This needs to be known because the carving of Toraja traditional house is one of the uniqueness in Toraja that is important to be preserved. This is because the youth in Toraja have started to ignore this. Researchers want to research to understand Toraja carvings and can be integrated and applied in learning in schools.

## 2. RESEARCH METHODS

### 2.1 Subject and Research Design

This research used is qualitative research with an Ethnographic approach. According to Sparadley in [1], the ethnography method is used to describe, explain, and analyze a society or ethnicity[1]. The subject of this research is a person who knows things about engravings and is good at engraving.

### 2.2 Instrument

This research instrument is a human instrument. Namely, researchers act as the main instrument that can not be replaced by others who act as data collectors related to carvings in tongkonan traditional houses[5]. In addition, supporting instruments are also used in observations, field notes, interviews, and documentation. This research was conducted using three stages: (1) identifying and conducting interviews in which we ask about various problems about Toraja carving. (2) Collecting data; data collected from interviews with informants. (3) process and analyze data; conducting data analysis from observations and interviews on the concept of geometry transformation contained in Toraja carvings.

## 3. RESULT AND DISCUSSION

### 3.1 Result

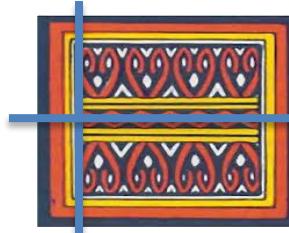
Carvings in Tongkonan with each other do have a different type. According to the researchers' observations, the carvings on the walls of the house consisted of various kinds. They began to write about the kind of transformation that existed in the faithful carving in the house. The kind of transformation contained in the carving is dilatation, translation, rotation, and reflection.[6]

In the carvings in the house, Tongkonan has the exact distance between carvings with each other. There are similar types of carvings, but other carvings limit them. It appears that, in general, the kind of transformation that is translated is very dominant in the carvings contained on the walls of tongkonan houses.

According to information from the informant, carvings in tongkonan house are not all the same or have differences. This is characterized by the type of carvings found in one Tongkonan house but not in another Tongkonan. This depends on the custom that the owner of Tongkonan has made. If the homeowner has sacrificed at least three buffaloes, certain carvings can be carved on the house's walls, but not all can be engraved.

Based on information from informants, toraja carvings (*Passura'*) originally consisted of four carvings commonly referred to as *garonto'na passura'* until now there are more than a hundred carvings. In this study, there are 39 types of basic carvings that have been identified, namely *Pa'bare' allo*, *pa'tedong*, *pa'manuk londong*, *pa'kapu'baka*, *pa'tangki' patting*, *pa'tanduk re'pe*, *pa'pollo' gayang*, *pa'bombo uai I*, *pa'bombo uai II*, *pa'manik-manik*, *pa'sekong kandaure*, *pa'sekong anak*, *pa'sepu' torongkong*, *pa'talinga*, *pa'siborongan*, *pa'doti siluang I*, *pa'doti siluang II*, *pa're'pe sangbuam*, *pa'papan kandaure*, *pa'sala'bi dibungai*, *pa'tedong tumuru*, *pa'tangke lumu'*, *pa'don bolu*, *pa'don bolu sangbua*, *pa'tukku pare*, *pa'bua tina'*, *pa'tolo' paku*, *pa'lamban lalan*, *pa'daun paria*, *pa'kangkung*, *pa'bunga kaliki*, *pa'bungkang tasik*, *pa'batang lau*, *pa'barana'*, *pa'lolo tabang*, *tedong*, *bai*, *pa'manuk londong*.

### 3.1.1. Reflection



**Figure 1 Mirroring in *Pa'bulu Londong* carving**

According to figure 1 above, the type of geometry transformation, i.e., translation of the x-axis, is visible in the carving of *Pa'bulu Londong*.

### 3.1.2. Translation



**Figure 2. Translation in Pa'bulu Londong carving**

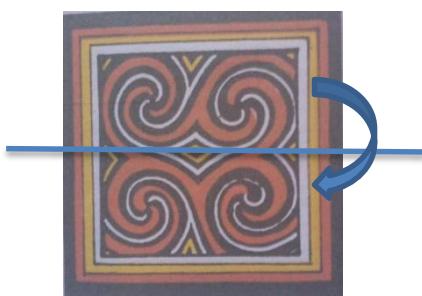
From figure 2 above, there is a type of translation transformation in the Carving of Pa'bulu Londong. Visible on the shape shown as shown in the image.

The type of transformation contained in this carving is dilation. This is seen in the motif of a circular carving in which a large circle surrounds a smaller circle inside.

Table 1. Geometry Transformation Table in Toraja Carving

No.	Geometry Transformation	Toraja Carving
1	Reflection	<i>Pa'tedong, pa'manuk pondong', pa'kapu' baka, pa'tanduk re'pe, pa'bombo uai I, pa'bombo uai II, pa'talinga, pa'siborongan, pa'doti siluang II, pa'don bolu sangbua, pa'bua tina', pa'daun paria, pa'barana', pa'manuk Londong.</i>
2	Rotation	<i>Pa'tangki' pattung, pa'pollo' gayang, pa'doti siluang II, pa'tedong tumuru, pa'tangke lumu', pa'kangkung, pa'bunga kaliki.</i>
3	Translation	<i>Pa'bare' allo, pa'manuk londong, pa'bombo uai I, pa'manik-manik, pa'sekong anak, pa'sepu' torongkong, pa'siborongan, pa'papan kandaure, pa'sala'bi dibungai, pa'don bolu, pa'tolo' paku, pa'lamban lalan, pa'lolo tabang, tedong, bai.</i>
4	Dilation	<i>Pa'bare' allo, pa'doti siluang I, pa'doti siluang II, pa're'po sangbua, pa'sala'bi' are wrapped, pa'don sponge sangbua, pa'takku pare, pa'bua tina', pa'bungkang</i>

### 3.1.3. Rotation



**Figure 3 Rotation on Pa'barana' carving**

In this carving, there is a type of rotational transformation. This is seen in the carving motif at the top. If rotated as far as 180°, it will produce a carving motif at the bottom of the carving.

### 3.1.4. Dilation



**Figure 4. Dilation in Ne'Limbongan carving**

tasik, pa'batang lau,  
pa'lolo tabang.

The carvings written in this study are only the dominant carvings found in all Tongkonan traditional houses or carvings that must be in tongkonan traditional houses. The meaning contained from this carving all explains the prosperity and welfare of the Toraja people.

The most common type of transformation found in carvings is translation. This is based on measurements in engraving. According to Patasik, in carving, not necessarily directly carve, we make a pattern by measuring all kinds of distances that exist in the carving. The carvings in the Tongkonan house have the same type and shape but different locations. This suggests that translation is most common when we carve.

#### 4. CONCLUSION

Based on research that has been done by researchers concluded that in carving tongkonan traditional house there is a type of geometry transformation, namely rotation, dilatation, translation, and reflection. The types of carvings are *Pa'bare' allo*, *pa'tedong*, *pa'manuk londong*, *pa'kapu'baka*, *pa'tangki' patting*, *pa'tanduk re'pe*, *pa'pollo' gayang*, *pa'bombo uai I*, *pa'bombo uai II*, *pa'manik-manik*, *pa'sekong kandaure*, *pa'sekong anak*, *pa'sepu'*

*torongkong*, *pa'talinga*, *pa'siborongan*, *pa'doti siluang I*, *pa'doti siluang II*, *pa're'pe sangbuam*, *pa'papan kandaure*, *pa'sala'bi dibungai*, *pa'tedong tumuru*, *pa'tangke lumu'*, *pa'don bolu*, *pa'don bolu sangbuwa*, *pa'tukku pare*, *pa'bua tina'*, *pa'tolo' paku*, *pa'lamban lalan*, *pa'daun paria*, *pa'kangkung*, *pa'bunga kaliki*, *pa'bungkang tasik*, *pa'batang lau*, *pa'barana'*, *pa'lolo tabang*, *tedong*, *bai*, *pa'manuk londog*.

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