

THE CONCEPT OF BEAUTY DEFINED BY THE MAKONDE PEOPLE

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ABSTRACT

One of the most impressive occupation among Makonde men is the art of carving. At least since 1902, there exists evidence that Makonde sculptors have been producing all kinds of wood carving-pieces such as chairs, wood masks and walking-sticks. At first, these had been used for trading with the neighboring ethnic groups; in exchange the Makonde people could obtain clay jars and pots (Adams, 1902). Today, Makonde sculptors are mainly dedicated to carve feminine figures, which can be found in all types of handcraft markets and shops. The arrival and settlement of Portuguese colonizers and missionaries at the Makonde Plateau in the 1930s provoked an upsurge in the sales of such sculptures since they had started to order all kinds of human figures, from religious to political “eminences” (Kacimi & Sulger, 2004). This suggests an introduction of the classical European style into the traditional Makonde style. The authors discuss and present how Makonde sculptors define the idealized concept of beauty in their sculptures and how this is related to what has been described as mathematical beauty by the Western culture, i.e., the golden ratio. If the production of ebony-wood sculptures has become, in some sense, more industrialized, to what extent is it possible to consider sculptors to be artists? Some answers will be discussed.

1 Introduction

Mozambique is located in the southeast of Africa, bordering with Swaziland and South Africa from the south, Zimbabwe, Zambia and Malawi from the west, Tanzania from the north and the Indian Ocean from the east. Until the arrival of Vasco da Gama in 1498, the land was inhabited by several Bantu groups who migrated from southwestern Africa. Mozambique was settled and remained a Portuguese colony until its independence on the 25th of June 1975. Today, there are still over 20 ethnic groups living in Mozambique, but they are no longer as isolated as they were before. One of these ethnic groups is called Makonde.

1.1 About the Makonde people

The Makonde Plateau is located between southern Tanzania and the northern part of Mozambique. It is divided by the Rovuma river, also the border between these two countries, and its biggest city in the Mozambican territory is Mueda. According to oral tradition, the Mozambican Makonde people have arrived and settled at this region about three centuries ago, when they were escaping the drought and tribal wars in the south of the Niassa Lake. Although it is not possible to determine whether the migration movements had started even before these dates, it can be affirmed that these movements have lasted until after the colonization period (Fouquer, 1972). The term *makonde* not only describes a geographic region, but also a person who carries this

specific culture (Kacimi & Sulger, 2004).

The Makonde people have a cultural concept of nationality and not a racial concept or a concept of blood. Moreover, and as a consequence of it, when a Makonde man marries a woman from another ethnic group, she will certainly become Makonde. Inside, the Makonde's society is matrilinear, i.e., the descendancy is uterine and, in this case, the leader of the family is usually an uncle, a brother or the eldest nephew of the mother.

The main characteristics in the Makonde physiognomy used to be easily recognizable; mostly women, sometimes men as well, were tattooed in their face and some parts of the body, had piercings in their upper lip, and had their teeth sharpened. These characteristics were used to, on the one hand, make evident their ethnic roots and, on the other hand, to represent virtues; in the case of the tattoos they were said to have a symbolic value and the lip-piercing was considered as jewelry and also to have magical virtues (Fouquer, 1972, pp. 11 ff). These practices were banned by the first independent government of Mozambique, in 1975 (Kacimi & Sulger, 2004).

1.2 About the Makonde sculptures

Adams (1902) had mentioned in his book that Makonde men carved different wood pieces such as chairs, wood masks and walking-sticks. These were exchanged for clay jars and pots from other neighboring ethnic groups. Inside their own huts, one could often find some feminine figures. According to one of the legends explaining the origin of the Makonde people, their first mother had originated from a piece wood that had been carved by the first Makonde man (Adams, 1902, p. 41).

The art of carving is an occupation that can only be practiced by Makonde men. Women have too many obligations such as household, taking care of children and pottery, leaving no time for other activities. According to Breutz (1971), sculptures have mainly a religious purpose and these are not the concern of women. As Raum had expressed: "women, who since paleolithic times form one of the most common subjects of art, only rarely create art objects." (Raum, 1966, p. 6)

After the 1930s, the Portuguese colonizers and other missionaries arrived at the Makonde plateau. They immediately showed great interest and fascination for the Makonde wood carvings and began to order different pieces, from religious until political "eminences." The Makonde sculptors, after noticing such interest, decided to carve the new pieces using *pau-preto* (ebony wood, *Diospyros ebenum*) and *pau-rosa* (*Swartzia spp.*) instead of the soft and non long-lasting wood they had used before. This first contact with the Western culture can be considered to be the first introduction of the classical european style into the traditional Makonde style.

With the increase of tourism in Africa, from the 1960s and up to the present days, the styles and types of Makonde sculptures have adapted and diversified in an enormous way. It is possible to find, e.g., nativity sets during the christmas season. The following list describes the most popular types of Makonde sculptures:

1. *Ujamaa*. This concept had been inspired in the visions of Julius Nyerere (Tanzania's first president). It consists of a human tower where not only men and women are climbing one another, but also children. Each person has a determined task or role to fulfill in her or his community that, in this case, is the one consisting of all people in this human tower (Kacimi & Sulger, 2004).

2. *Shetani*. The term *mashatani*, plural of *shetani*, refers to the various spirits of the Makonde cosmogony. These sculptures consist of grotesque human representations and human-animal forms. They have also been considered to be the Modern Makonde Art that appeared after the 1960s (Kacimi & Sulger, 2004; Stout, 1966).
3. *Sculpture in Relief*. This type of sculpture is also called *sculpture in high relief*, since what remains from the bole is its center. Within this style one finds busts, human and animal shapes. The first of these consists of the starting point of an apprentice who wants to become a sculptor or, in their own words, a master (Rohrer, 2010).
4. *Mapiko*. These sculptures are masks consisting of, either the facial side, or they may cover completely the head and some part of the bust. Most probably, the first motivations Makonde men had to carve wood was the making of masks for ritual purpose or for the personification of ancestors for adoration and contemplation (Kammerer-Grothaus, 1991).

After the beginning of the commercialization of Makonde sculptures, some debates regarding the type of occupation of Makonde carvers became an issue. Many anthropologists have discussed whether it is possible to acknowledge these producers to be artists, or simply artisans. For example, Grohs (1971) had discussed this dilemma and, according to her, there exist two tendencies: the first has considered ebony sculptures as “commercial art,” and the second has accounted Makonde art as a highly valued sequel of the art of carving. Both of them have been able to find arguments that validate their statements, making it even more difficult to establish Makonde sculpture as a specific art or artisanry.

In this paper, we would like to discuss and consider a new approach to this debate: “the idealized concept of beauty.” Some answers to how the Western culture has defined beauty throughout the history of humankind, and how this definition has affected (or influenced) the concepts and interpretations present in the Makonde tradition will be discussed.

2 Theoretical framework

The various conceptions and approaches proposed for research in ethnomathematics embrace notions, concepts, and methodologies from a number of disciplines within the social sciences. In particular, the following research and its evaluation, as exposed in the following sections, require the implementation of relevant contributions from ethnography and ethnology. Furthermore, the type of analysis used for this research is based on case study, i.e., we proceeded with a comparative case method. Hence, we chose the golden section to be the theoretical proposition and reference point for the analysis of the collected data.

2.1 Ethnography and Ethnology

Ethnographic methods may be considered as one of the fundamentals for any research undertaken in ethnomathematics; it is the science used to describe different cultures and societies. Ethnographers need to be open minded with respect to the cultures they will study. Being open minded allows the ethnographer to uncover relevant information that is outside the aims’ scope; it gives freedom to interpret the collected data in diverse

forms, even though s/he accounts for an understanding from an insider's perspective (Fetterman, 1989).

This type of research is generally inductive, i.e. although the ethnographer bases her or his investigation on a certain model or theory, it ends up with general conclusions or new theories. In other words, and particularly with regard to ethnography, the subjective reality of an individual is no less valid than the objectively defined one (Fetterman, 1989); this new way of interpreting reality may lead to a reformulation of the model being used.

Ethnology is concerned with the dynamic phenomena of cultural change and assumes only the historical facts that come from archaeological findings, thus the method used for determining such changes "is based on the comparison of static phenomena combined with the study of their distribution." (Boas, 2007) It does not intend to explain the foundations of civilization and society; rather it regards each culture as having an independent cultural history that agrees with its own social developments and adaptations of external influences.

Ethnology uses the results obtained in an ethnographic research to study cultural change. Hence, the respect of the ethnologist towards any ethnic groups is the key to give, in a broad sense, a scientific meaning and acknowledgment to their theories. However, Lévi-Strauss suggested that equality and acceptance between all different cultures was not possible without endangering their differences (cit. Lévi-Strauss in Ritter, 2009).

2.2 The golden section

The *golden section* was firstly defined as *division in extreme and mean ratio* by Euclid in 300 B.C., and later as *proportion having a middle and two ends* in some Arabic books (Herz-Fischler, 1987). From the sixteenth century on, many names had been given to refer to this description, e.g., *divina proportione*, also the title of Paccioli's book, *continuous proportion* used by Kepler in 1597 and *goldene Schnitt* officially introduced by Martin Ohm in 1835. This latter, translated to *golden section*, is the most popular nowadays. According to Schubring, this term had already existed prior to 1835, but only orally, most probably among artisans and engineers (cit. Schubring quoted in Herz-Fischler, 1987).

The golden ratio, apart from describing a geometric concept, has also been used to idealize the proportions of the human body. The Vitruvian Man, by Leonardo da Vinci, was probably obtained from the oldest representation of this ideal of human proportions, made by Marcus Vitruvius Pollio in the Ancient Greece. It consisted of Zeus inscribed in a circle of radius equal to the navel's height and in a square of size length equal to the height. Since those times the relation between the height and the navel's height of a person has been considered beautiful if it satisfies the *golden section*, and this ideal has been able to survive through ages in the history of mankind, at least in the Western Culture (Rohrer, 2010). To the particular interest of this research are the studies developed by Le Corbusier, Albrecht Dürer and Robert Ricketts:

Le Corbusier (Swiss, 1887-1965) had studied the proportion given by the golden section with the goal of achieving an architecture that was simple and functional and yet regarded space and proportions (Atalay, 2004). After World War II he had been offered to design a large-scale residential complex, the *Unité d'habitation*. All the

dimensions in these buildings were determined by the *modulor*: a system based on the idealized human proportion, given by the golden ratio and further developed by Le Corbusier himself (Le Corbusier, 1954).

Albrecht Dürer (German, 1471-1528) was a painter and a printmaker who had tried to solve the problem of distinguishing between true and beautiful human proportions with graphics. In 1528, the book “*Hierin sind begriffen vier Bücher von menschlicher Proportion*” containing the study he had developed with at least thirteen different body types of, each, women, men and children was published. According to Dürer, the concept of human beauty was subject to change in time, but this change should oscillate about a midpoint, the golden section (Dürer, 1528).

Robert Ricketts (American, 1920-2003) was a specialist in aesthetic and orthodontic surgery, who had spent many studies on what he later patented as *golden divider*. In one of them, Ricketts had conducted several measurements about the face on a number of female photographic models. The conclusions he had obtained suggested the possibility of determining some facial features through the golden ratio, e.g., the ratio between the distance from the nose to the forehead and the distance from the chin to the nose (Atalay, 2004).

3 The proportions of Makonde sculptures

For the study of the proportions of Makonde sculptures, a field research between September and October of 2008, had been pursued at the National Museum of Ethnology. The National Museum of Ethnology is located in Nampula, in the north of Mozambique and at about 180 km west from Ilha de Moçambique (UNESCO world heritage since 1991). The museum’s administration and the University of Lúrio had decided and opened a working place for many Makonde sculptors in the backyard of the same museum. At least two huts had been built, and the same sculptors can exhibit and sell their own ebony wood carvings.

3.1 Carving Makonde sculptures

The field research was divided into two periods: during the first period, three sculptors had been interviewed and observed while they were carving different ebony wood pieces. Martins Bernardo, Pakholo Laza and Júlio Carlos carved *mulher* (sculpture in relief), *likhomba* (*mapiko*) and *ujamaa*, respectively. The materials used for carving these three sculptures were a handsaw, an ax (called *anchô* in Portuguese), several wood chisels, including some curved, a knife, a file and a batter (called *batedor* in Portuguese).

In all cases, there was no use of a measuring tape: the boles and all different measures and proportions the sculptors had required during the carving of their pieces were measured using their own hands: palms, fingers and thumbs, and phalanges.

The method used for carving the different pieces consisted mostly of beginning in the top of the bole and finishing it in the bottom, i.e., its base. Martins Bernardo started with the head of the woman, Pakholo with the eyes of the mask and Júlio Carlos with the children standing at the most top of the human tower. Carving symmetric body parts, such as ears, eyes, breasts and hair, consisted of using any of the two following methods: from the outer sides to the middle, or carving one side and then reproducing

it on the other side.

In the last and shortest period, a complete sample of ca. 150 pictures of different ebony wood sculptures, exhibited in the shop, from several Makonde sculptors were taken with a camera. Many of these images were shot at least three times, in order to guarantee at least one good quality image for further analysis. The camera was always placed as drawing an imaginary parallel line with respect to the sculpture, and the distance between these two was variable.

3.2 Measuring Makonde sculptures

A reduced sample of 16 images of whole body sculptures and 33 pictures consisting only of the facial features was selected and had their background removed using Photoshop[®].

The whole body sculptures were fitted to the *modulor* drawn with AutoCAD[®]. This adjustment followed the steps given below:

- i. Position the midpoint of the *modulor* in the navel. In most cases, the navel does not appear in the sculpture. The height of the elbow is used to replace the height of the navel since they are equal.
- ii. Having the midpoint fixed, it becomes the first reference point for scaling the *modulor* according to the size of the sculpture; the second reference point are the feet.
- iii. The *modulor* has been scaled to the size of the sculpture. The complete results of this procedure can be found in Rohrer (2010, cf. Figure 5.19).

The 33 pictures consisting of facial features were measured according to the description of the following steps:

- i. Draw the lines marking the beginning of the forehead, the eyes, the nose, the mouth and the chin.
- ii. Draw a perpendicular line passing through the midpoint of the inner canthal distance. The canthus is the corner of each side of the eye, formed by the junction of the upper and lower lids.
- iii. Measure the distances from the chin to the forehead (TE), from the chin to the nose (NA) and from the chin to the mouth (BO).
- iv. Finally compute the distance $TE - NA$ of each image. All these values created a table that can be found in Rohrer (2010, cf. Table 5.1).

The following section presents the results obtained after comparing and analyzing the different values collected during the field research and those presented in the previous section 2.

3.3 Comparing proportions – *t*-test

Only three figures, out of 16, matched best to Le Corbusier's *modulor*, although the raised arm did not reach the height of 226 cm in neither of them. From our point of view, they can nonetheless be considered to be very accurate, since we know that

Makonde sculptors have only used their hands and fingers to measure any part of the carving piece. Interestingly, one of these sculptures has a height of about 160 cm in real size; this could suggest that, because of the proximity with the actual height of a person, it would become easier to follow the proportions given by the golden ratio, since it needs no scaling, and thus to carve an “ideally beautiful” human sculpture. But this conclusion is not possible to achieve since the other two figures have the same average size as the other sculptures (they are not higher than 50 cm).

In some cases it was possible to obtain two different results for the same whole body sculpture. This happened because the navel had been carved, but it did not coincide with the height of the elbow. Interestingly, the fitting was usually more accurate if the midpoint had been fixed at the height of the elbow and not that of the navel.

A total of 8 figures showed a similar result: the navel represented the exact midpoint that divides the body into two equal halves. This does not coincide with the midpoint defined in the *modulor* since, in this last case, it halves the total height from the feet until the end of the raised arm. Unfortunately, the sample did not show sufficient results that could present a formal generalization of these analyses.

In the case of the computations made for the facial features and according to the studies pursued by Robert Ricketts, as described in the previous section 2, the following equalities satisfy the idealized concept of beauty as defined by the golden ratio:

$$\frac{TE}{TE - NA} = \frac{TE - NA}{NA} = \frac{NA}{BO} = \varphi \quad (1)$$

The following table shows the results obtained after applying the *t*-test to the values obtained from the measurements taken in the second part of the study above, i.e., those obtained from the facial features, and by considering the null hypothesis to be the golden ratio φ :

	$\frac{TE}{TE-NA}$	$\frac{TE-NA}{NA}$	$\frac{NA}{BO}$
Mean	1.63824644	1.6157760	1.9140188
Standard Deviation	0.1124368	0.2986213	0.2146197
One-sample t-test	1.032684	-0.04344	7.9224

Table 1: Statistical Results for the *t*-test computed with respect to the facial features.

One can easily see that the result obtained in the last column (NA/BO) allows a 99% of confidence to claim that sculptors did not use the golden section to compute the distances from chin to nose and from chin to mouth. For the the first two cases, the null hypothesis could not be rejected. The *t*-test did not give further information on the validity of these results in any of the confidence levels from 99.99% until 90%, but it was possible to compare the means and arrive to some conclusions.

The mean computed for the values of $\frac{TE-NA}{NA}$ differed from the golden ratio φ only after the third decimal place, i.e., $|\frac{TE-NA}{NA} - \varphi| = 0,002\dots$; and for the values obtained in the first column $\frac{TE}{TE-NA}$ the difference is $|\frac{TE}{TE-NA} - \varphi| = 0,02\dots$. Hence, we may conclude that these two results are quite accurate with respect to the proportions given by the golden section and Ricketts’ results.

4 Final Conclusions and Remarks

In our opinion, the proportions given by the golden section are not a requirement that Makonde sculptors use to distinguish a sculpture of high quality. But we cannot totally reject them since they appear in some cases, mostly in the facial features. On the other hand, how Makonde carvers manipulate and work the ebony wood shows an enormous ability in determining sizes and proportions, suggesting the existence of other rules of proportions. Unfortunately the sample of this study did not suffice to give a more general conclusion. Furthermore, the same sculptors explain that their knowledge has been based on pure observation, and that is also connected to experience. Many carvers have learned this profession by reproducing the side that has been carved by his master in the other half of the same bole.

It is important to remark that Makonde sculptors tend to represent real persons in their carvings, that is, people are placed in a very real and concrete situation in life. Either a woman is going to the *machamba* to work and her children are accompanying her, or a community is working very solidly united. They have the desire to represent themselves in the sculptures. Following this way of thinking, we could say that the beauty in the Makonde sculptures relies on how far they are able to emulate a real life event or situation.

If we only regard the facial features, the results presented in the previous section 3 show that it is possible to find the proportions related to the golden section: in the ratio between the distances from the short nose until the forehead and from the chin until the short nose, and in the ratio between the distances from the chin until the forehead and from the short nose until the forehead.

These results suggest that up to a certain scale, that of sculpting a face, especially of a woman, Makonde men seem to attempt to encounter the same ideal of beauty that the one defined by the Western culture. This ideal represents the image of their first mother, the woman who had originated from ebony wood. Furthermore, masks constitute the first sculptures created by the Makonde people for the realization of rituals. These masks have the function of representing bad and good spirits during these ceremonies. And the good spirits correspond to the Makonde ancestors, including their first mother. The facial features have thus been idealized since the beginnings of Makonde art.

The question that remains open is whether their initial idealized concept of beauty coincides with that given by the Western culture, i.e., the golden section. The sample does not allow us to answer this since the images correspond to sculptures carved at least after the year 2000. There exists the possibility that Makonde art has suffered from “cross-cultural transmission” or from “acculturation adjustment.”¹

To conclude, an artist is the person who creates a piece of art, and the person who reproduces this piece is called artisan. In the Western culture, Benjamin (1955) had already suggested an end of the auratic art due to technical reproducibility and commercialization. Furthermore an artist will be considered as such because there exists an “art patron” stimulating, encouraging and promoting her or his style (Raum, 1966).

Hence, instead of regarding Makonde sculptors as being artists or artisans, we suggest that they should be considered to be masters. The term master is used by the same

¹Man Keung Siu has introduced the term “cross-cultural transmission” in his talk “1607, a year of (some) significance: Translation of the first European text in mathematics - Elements - into Chinese” presented in July 2010 at the 6th European Summer University on the History and Epistemology in Mathematics Education in Vienna.

community of sculptors to always distinguish the best, most creative and experienced carvers. Clearly, not every Makonde sculptor will be considered to be a master: only those who achieve to reproduce the so called ideal of beauty within the facial features will be acknowledged as such by their own ethnic group.

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