

O Le Fala Moe
A Research Paper

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Introduction

One of the most important aspects in an individual's life is his identity (Noonan 2003; Garrett 1998). This identity is derived from one's name, bloodline, relations, background, and culture, to name a few. Culture is an overwhelming idea to consider, but it is a vital factor in understanding a person and where they come from. Culture, as commonly defined, is a group or society's way of life which sets them apart from the rest of the world, like Samoa. Samoa, an island chain in the South Pacific, is an area with a thriving culture and a deep, rich history.

Lately, there have been studies and research done on the Samoan culture and its integration into different topics and areas such as: religion, politics, and education. For this particular research, the focus is on exploring a possible relationship between Samoan culture and mathematics. Consequently, this paper will illustrate and describe where mathematics is found in the Samoan cultural practice called the *fala moe*.

Fala moe literally means "sleeping mat." However, in this context a *fala moe* is a presentation that takes place only during wedding ceremonies of a Samoan *teine* or girl. After the wedding ceremony and reception and after the guests have left, the bride and her families and the groom and his families will then proceed to the bride's home where the *fala moe* will take place.

The significance of a *fala moe* in Samoan culture is to show the love of the two families for their daughter and son being joined in marriage. Another significance of the *fala moe* is for the bride to show the groom and his families that she is well prepared for the union. Most importantly, a *fala moe* is a show of love and acceptance of the bride and her families by the groom and his families, and vice versa. The extravagant show of wealth is evident in this practice because of the parents' and families' love for their children.

However, the *fala moe* is not done in all Samoan marriages. Even the practice of *fala moe* is hardly done today. Some of the reasons are related to money problems, the social economic status of either the bride or groom or both, loss of interest, and the time consuming demands of the practice. Another reason is that fine mats and *siapo* and *fala fa'avulu* are hard to find these days and this is because there's hardly any weaving going on anymore around American Samoa, except for a few groups and associations trying to bring back weaving. In addition to this, another reason why the *fala moe* is hardly presented nowadays is because a bride might have lost her virginity and or have given birth already. Or, maybe because the bride and the groom had eloped – which is a huge disappointment to Samoan parents.

The cultural importance of the *fala moe* is to keep the practice of weaving and *siapo*-making alive and continuing in American Samoa and Samoa. There's also a need to hold on to this practice in Samoan culture because, like some of our cultural practices, it's becoming extinct. Personally, the importance of this Samoan cultural practice to me is as an expression of the significance of a Samoan daughter to her family and the Samoan son to his family. That is the true essence of the *fala moe*—showing love for the children.

Methodology

A survey was the initial method I considered for this research, but I decided that the personal approach of an interview would be preferable. Therefore, for this research, interviews were used and designed because they are more formal and intimate in the sense that you get to meet and talk with the participants. An interview was more reliable because you get your answers firsthand.

During the interview, four main questions were asked. They are as follows:

1. *What is your understanding of a fala moe?*
2. *What was used before in a fala moe?*

3. Is “mathematics” involved in the *fala moe*?

4. Where is the “mathematics” in the *fala moe*?

5. Should we continue the practice of *fala moe*? Why or why not?

Participants

There were twelve participants who took part in this research. These individuals ranged from elders of my village, my church and my community, to art teachers, math teachers, and mostly weavers. The elders were chosen to be participants because of the wealth of knowledge of the Samoan culture that they possess. All the elders interviewed in this research were also weavers as part of the TAOA (Territorial Agency on Old Age) weaving club. Art teachers were involved because of their knowledge of *siapo*-making and *siapo* designs. Math teachers, who are all currently teaching except one who has retired, were part of this research because of their thoughts on the mathematics involved in the practice of the *fala moe*.

The participants for this research were given consent letters to complete the interview. The letter included the purpose of the interview, the time, and how long it would take to do the interview.

Participant:	Age:	Gender:	Occupation:	Ethnicity:

I-001	71	F	weaver	oan
I-003	68	M	math educator retired	Samoan

I-003	79	F	weaver	Samoan/Tongan
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I-009	71	F	weaver	Samoaan
I-010	66	F	weaver	Samoaan

I-011	38	M	art educator	Samoan
I-012	68	F	weaver	Samoan

The only difficulty encountered through the course of this research was the lack of written studies or previous research done on the *fala moe*. I found not studies of the concept of *fala moe* and mathematics, or any writings on the idea of the Samoan wedding's *fala moe*.

This research can be integrated as part of a unit plan for high school students. The local American Samoa Department of Education Samoan curriculum standards teaches Samoan culture in secondary level. As part of the Samoan culture curriculum, students must learn about different cultural events of Samoa, for example: a funeral, a title coronation, a house or church dedication, and even a wedding. In a lesson on the Samoan wedding, teachers can continue the lesson to include what other ceremonies goes on within a wedding, like the *fala moe*. Then, teachers can proceed to integrate other content areas into this lesson on weddings and from there have students try to see how mathematics is integrated into weddings especially the concept of the *fala moe*.

I firmly recommend further research into this particular subject of the *fala moe* for deeper understanding and appreciation of the Samoan culture. Most importantly, I strongly

recommend that more research be done on this topic because it will give students appreciation of their culture and appreciation for mathematics and better ability to identify the “mathematics” in everything they encounter in life (Meleisea 1987; Fairburn-Dunlop 1998).

Description

After greeting the groom’s families, the bride’s families will then begin their *fala moe* presentation. The presentation is led by the bride, dressed in a *puletasi*, or Samoan cultural attire for women, and followed by all the women of her family, in presenting the groom’s families with fine mats, *fala fa’avulu*, *siapo* cloths and *‘ie lalaga*.

In the presentation, fine mats of large proportions are gifted to the groom and his families. These large fine mats measure about 20 feet long by 30 feet wide. These mats are called *‘ie igoā* or *‘ie tele*. *‘ie igoa* fine mats are so called because they were woven for a special reason or event, like a wedding. The name *‘ie tele* is also given to the same fine mats because of their large proportions. During a *fala moe* about 20 or 30 or even more than 50 *‘ie igoā* are presented not only to each of the chiefs in the groom’s families, but also to the entire family. There’s also an extravagant presentation of the same fine mats to the groom’s parents afterwards.



'ie o le Alofa (Fine mat of Love) pictured Left and 'ie o le Feagaiga Tau I Le Oti (Fine mat of a Bond For Life) are samples of 'ie igoā or 'ie tele at Magaga and Siniva Talo's wedding December 19th, 2010 during Siniva's fala moe.

Not only *'ie igoā* are presented, but also regular-sized fine mats or *'ie lalaga* are gifted to the groom's families. These fine mats are much smaller than *'ie igoā* in measurements whereby the *'ie lalaga* commonly measures about 4 feet long by 5 feet wide. During a *fala moe*, the least amount of *'ie lalaga* presented will range from 500 to more than 1000 wrapped in bundles of 10 (Taule'alo & von Reiche 1996).

The common practice is that when a high chief of the groom's family is presented with an *'ie igoā* a certain *'ie lalaga* will accompany that presentation alone and the number will range from 100 *'ie lalaga* to 200 or more. When a presentation is given to a lesser chief, or *matai tulafale*, he will not get an *'ie igoā* or *'ie tele* but he will only get about 50 *'ie lalaga* or a bit more or a bit less as a gift from the bride and her families.

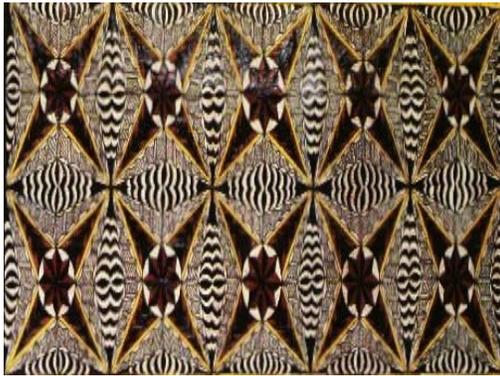


'ie Lalaga

Also during a *fala moe*, *siapo* cloths or *tapa* are presented. *Siapo* cloths of various sizes and designs are gifted to the groom and his families. Some of the *siapo* cloths measure from 30 feet long to 30 feet wide and even larger. There are also *siapo* cloths of smaller measurements,

but quite elegant and sophisticated, presented in a *fala moe*. The number of *siapo* given in a *fala moe* varies depending on the number of chiefs or special guests and member of the groom's families in attendance.

A *siapo* is presented mostly to high chiefs and paramount chiefs, governors, or ministers. A *siapo* is given to show respect, royalty, and wealth. The use of large size *siapo* cloths in a *fala moe* is also a display of love and affection of the family for their daughter.



Siapo of Samoa

Many islands of our Pacific region have their own version of the *siapo* as part of their cultural handicrafts and artworks. The beauty of this is that each culture or islands have their own designs of making *siapo*. In the making of the *siapo* in Samoa, there are a lot of designs that are common throughout Samoan *siapo* that make Samoan *siapo* distinctive from the *siapo* or *tapa* of the rest of the Pacific. Sometimes many designs can be combined into a single *siapo*, sometimes just a few designs are used when decorating a *siapo*, and sometimes only a couple of designs are used to create a *siapo*.

Some of the designs used in the making of the Samoan *siapo* are as follows:

Design	Translation
<i>Fa'aaupega</i>	netting
<i>Fa'a'alialio</i>	trochus shell
<i>Fa'asigano</i>	male pandanus bloom
<i>Fa'aatualoa</i>	centipede
<i>Fa'alaupaogo</i>	pandanus leaf
<i>Fa'atuli</i>	sand piper

<i>Fa'avae tuli</i>	sand piper foot prints
<i>Fa'agogo</i>	terns
<i>Fa'atumoa</i>	banana pod
<i>Fa'aaveau</i>	star fish

There is also another type of mat given during a *fala moe*. This type of mat is commonly used for sleeping. These regular sleeping mats are called *fala lili'i* because they are thinly woven to provide for the one who sleeps on the mat. These mats measure about 5 feet by 8 feet or larger. When presented in a *fala moe*, a total of 100 to 200 or even more *fala lili'i* are given. When presenting a high chief with his gift, a total of 20 or 30 or more *fala lili'i* are given.

A *fala fa'avulu* is a regular-sized sleeping mat or *fala lili'i* that is decorated with yarns of different colors. A *fala lili'i* is taken and folded in two, lengthwise, and a line is drawn in the crease or fold line, which will run directly along the center of the *fala lili'i*. Then, an artist will draw or sketch a picture on one half of the mat. The sketch can depict the occasion or event at which the mat will be used, in this case a wedding. Some of the sketches drawn on the mats for weddings' usually will have a quote about love.



Fala fa'avulu

After the bride's families' presentation of her *fala moe*, the groom's families will then return or reciprocate the favor by presenting the bride and her families with monetary gifts. From experience, as the bride and her families are presenting their gifts, the chiefs of the

groom's families will sit and watch and calculate the values of the gifts presented. This is done to make sure the groom's families have the amount of money equal or close to the value of the *fala moe* presented.

When the groom's families' presentation begins, they will begin by presenting a gift to the bride's families' highest or paramount chiefs and ministers who are in attendance. A monetary gift for the high chiefs of the bride's families usually ranges from \$1000 US dollars (American Samoa currency) or even more. Lesser chiefs or *matai tulafale* will be gifted about \$100 or any amount below \$500. When these monetary gifts are presented, the bride and the women of the groom's families will line up and present the monies by \$100 bills to the chiefs. The women will dance to music all the way to the bride's families and present the money to the talking chief.

The biggest monetary presentation is when the groom's families will present their gift to the bride's families. The amount of money the bride's families are presented during a *fala moe* ranges from \$5,000 US dollars to \$10,000 and even more. For example, in my brother's wedding a few months ago, the amount given for the bride's families was \$15,000. Aside from this amount, about \$7,000 was presented already for all the chiefs and ministers of the bride's families. A total of \$22,000 was given to show appreciation for the bride's *fala moe* that was already presented.

As a side note, in the past, before money was used, the groom's families used to give parcels of land to the bride's families as an exchange of gifts. Some times food items or farm products were gifted. One of my interviews even shared that lesser chief titles were presented and gifted to the bride's families male(s) as token of their appreciation and reception of the bride's *fala moe*.

After the exchange of the families' wedding gifts, the two families will officially meet and shake hands and wish the new couple the very best. A *fala moe* is a special occasion, but has gotten quite expensive.

The "mathematics" in the fala moe

In this research, most of the emphasis was placed on the *fala moe* presentation. The next question is: is there "mathematics" involved in the *fala moe*? Contrary to my initial response, there is mathematics throughout the presentation of the *fala moe*. "Mathematics is everywhere in the bride's *fala moe*," is the most common response from the interviews I had conducted (S. Taiumu, personal communication, March 2010). Mathematics is not just a school subject or content area, but a life lesson and a skill we use everyday even without us knowing we're using it (Civil 2002; Gutstein 2006).

The same idea of mathematics being everywhere can be applied to the *fala moe*. In the *fala moe*, mathematics is used in many different concepts, such as:

- weaving
- designing
- use of money
- value of money
- estimation
- trading

In weaving, there is a pattern that weavers follow. The pattern varies from weaver to weaver, but the concept stays the same, which is weaving to produce a mat. There is also measurement involved in weaving whereby the weavers will use a particular unit to measure 'ie *igoā*, and also for 'ie *lalaga*.

As included in the photos for this research, the 'ie *igoā*, and the 'ie *lalaga* are elaborately designed with feathers of different colors. The designs are either in straight or zig

zag lines. The designs also require a particular pattern, and that the pattern for one fine mat is different from the next fine mat. One of the participants, responded:

“There are different designs that our elderly ladies and weavers use for fine mats of Samoa. The math that is used here is pattern. Some of the patterns are straight lines. Some of the zig zag lines. Some are small diamonds decorated with feathers. Some of the patterns also can be circles also decorated with colorful feathers” (M. Kalela, personal communication, April 2010).

In addition to the mathematics within the designs, there is math in the way the weavers take measurements. As I have watched the weavers, their *alofi lima* (their right hand outstretched and the point from the top of the middle finger to the top of the thumb) is used to measure the distance from one design to the next. As one weaver explained,

“We didn’t have rulers in the past. We didn’t have money to buy the rulers and we didn’t have rulers those days, so we use our *alofi lima*. This is the easiest because I just stretch my right hand and measure from here (top of the middle finger) to here (top of the thumb) and I make my design. And then after that design I measure with my hand again and make my next design. I keep doing this until I complete my fine mat” (P. Tuimahele, personal communication, April 2010).

In the making of the *siapo* cloth, patterns are used again in its creation. As one math expert shared, “Geometry comes in handy when working at creating a *Siapo*. And (not?) just a Samoan *siapo* but *siapo* for many different islands” (M. Pele, personal communication, April 2010). On a *siapo* cloth, there are a lot of lines used of different angles. Also, some of the *siapo* cloths have many lines of symmetry and some do not.

Another application of mathematics that is important in the *fala moe* is the use of money. Money is given by the groom and his families in exchange for the *fala moe* presentation

by the bride's families. While the *fala moe* is being presented, the chiefs of the groom's families try to estimate how much money should be given in return to the bride's family. The value of the *fala moe* is a skill that requires mathematics, which mainly depends on the size of the fine mats and siapo cloths presented. Also, the estimation of the cash value of the *fala moe* is also a mathematical skill. The value of the fine mat depends on how fine and thin the weavings are and its size. Also, the older the fine mat the finer and more delicate it becomes.

It is considered a humiliation if the groom's family does not give an amount of money that is equivalent or close to the value of the *fala moe*. This will result in "gossip" over the wedding that will never die out. So, the chiefs of the groom's families will try their very best to not only make a thorough estimate, but also make sure the groom's families will come up with the amount of money needed, in case of emergency.

There is also trading involved in the *fala moe*, a mathematical concept of reciprocating the bride's *fala moe* for monetary gifts. Similar sentiments are shared by a retired math specialist:

"I am very sure that the skill of trading is involved in the *fala moe* because something is given and something else is received in return. So, the idea of trading in the *fala moe* can also be called reciprocating, but in the case of the wedding it's the reciprocating or trading of love for love" (T. Pele, personal communication, April 2010).

There is a lot of mathematics involved in the presentation of the *fala moe*. And these mathematical skills also start from basic measurements, lines and angles, unit and place values, to geometry and patterns (Flecha 2000). So, there is a possibility that mathematics is present not only in the *fala moe*, but in many other Samoan practices and traditions.

Conclusion

The *fala moe* was an interesting subject for me to work with for this research paper. The primary question from the beginning was: Is mathematics used in *fala moe*? And if so, how and where? This research allowed me to experience and explore a practice of my culture that is quite extraordinary and extravagant.

When some of the elders were asked why a bride must present a *fala moe*, some of the most intriguing responses were:

“A *fala moe* is a girls’ gift to her new husband’s family. The relationship is there between the girl and the boyfriend, but it’s the family that the girl must make them love her and accept her. Her *fala moe* will show the boy’s family if the girl is rich by the many gifts or if the girl’s poor by the smaller gifts given as *fala moe* (L. Tagaloa, personal communication, April 2010).

“A girl must bring her own bed to show the groom’s family she can provide her own things for her new family” (P. Tavai, personal communication, March 2010).

“A *fala moe* will show the groom and his family that he has made the right choice of choosing a wife” (F. Fe’alofa’i, personal communication, April 2010).

“The most important reason why there’s a *fala moe* so the groom and his family will know the bride is from a good and wealthy family. And most importantly in the case that there’s a divorce which there will be a fight, no one will accuse the bride that she came poor. If the wife brought a *fala moe* and she’s in a fight with her in-laws they won’t make fun of her and say she came poor to their family. A *fala moe* is the show of love of the bride’s family for the groom and his family, but mostly for their own daughter for her to go with something rather than nothing” (T. Tufele, personal communication, April 2010).

A *fala moe* has deep and symbolic meanings in Samoan culture and this research opened my eyes to that part of my Samoa. As a reflection on this research, I see a lot of possibilities of mathematics being present in almost any area, idea, or concept not only in Samoan culture, but around me, as a whole. With this said, I am grateful to have chosen to continue on my journey into the study of the *fala moe*. In conclusion, there is a lot of mathematics involved in this cultural practice call the *fala moe*. As for me this has been an educational and learning journey not just as an educator, not just as a curriculum specialist, or a member of this class, but as a Samoan woman.

Final words? Math is everywhere!

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