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# A Study on Japanese Traditional Sweets Wrapped in Natural Materials: The Relationship Between Japanese Contemporary Package Design and the Japanese Wrapping Culture.

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Focusing particularly in packages that used either bamboo sheathes or bamboo leaves as wrappings, the purpose of this research is to investigate the actual condition of traditional package design in Japan, taking contemporary Japanese sweets wrapped in natural materials as the study's subject. Both of the mentioned above can be folded in various ways and possess optimal properties as wrapping materials.

Supported by literature materials, the method consisted of a field survey, sample collection and data analysis. The field survey was focused on the southernmost Kyushu Island's Fukuoka Prefecture and some of the samples were collected in the main Honshu Island. Along with the sample collection, an interview with the sweets' producers took place whenever possible. The samples' dimensions, as well as pictures of the packages being opened were taken for further analyses of the employed wrapping techniques. A sketch of each sample's wrapping steps was drawn. The wrapping patterns were then compared to each other and the common attributes analyzed.

We have observed variations of packaging patterns according mainly to the sweets' types and not necessarily on their geographical origins. Furthermore, we detected a shift in the purpose of the packaging from the primary function of protecting its contents towards a more decorative one. It was noticed that the use of natural materials is no longer based on their physical properties, but as a trendy means of recollecting and symbolizing old customary traditions.

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## Abstract:

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Key words: package design, wrapping, natural materials, traditional

## 1. Introduction

The deep-rooted tradition of carefully wrapping all kinds of objects — from personal belongings to consumer products— goes back to the origins of the Japanese culture, and still pervades the lives of Japanese people nowadays<sup>1</sup>. Though for the laymen it may be an aspect of minor significance, the act of wrapping and the quality of the package itself have a very important role in the Japanese cultural identity. Such tradition, intrinsically related to the culture, may have led the Japanese industry to stand out as a worldwide reference in the contemporary packaging practices.

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<sup>1</sup> In the article "Wrapping and Boxes" in "Package Design in Japan"[p.9], Tadashi Yokoyama explains about the special significance of the wrapping act for Japanese people as follows "... the Japanese believe that the feelings of respect or gratitude of either the presenter or the seller of a package are revealed in the way in which he has wrapped it."

## 2. Purpose

The purpose of this research is to investigate the actual condition of traditional package design in Japan, taking Japanese sweets (*Wagashi*) wrapped in natural materials as the study's subject. The relationship between traditional sweets and natural materials goes back to the time when paper was still an expensive commodity, and people living in the countryside had to use the available natural materials in their everyday lives<sup>2</sup>. The research is focused particularly in packages that used either bamboo sheathes or bamboo leaves as wrappings. Both of these materials can be folded in various ways. Also, because of their vertical axis line-patterned texture they can be detached from the usually sticky Japanese sweets' surface. Bamboo sheathes have long been widely used to wrap various kinds of food in Japan, for it is said that they possess properties that prevent food from spoiling<sup>3</sup>. Bamboo leaves are also known for their antiseptic action<sup>4</sup>, and these properties enabled both of them to become popular wrapping materials in traditional Japan.

## 3. Method

Supported by literature materials, the method basically consisted of a field survey, sample collection and data analysis. The survey was focused on the southernmost Kyushu Island's Fukuoka Prefecture and some of the samples were collected in the main Honshu Island. Following, a field survey in the city of Kyoto took place for a comparative analysis of the wrapping practices<sup>5</sup>.

Along with the sample collection, an interview with the sweets' producers took place whenever possible<sup>6</sup>. These inquiries were necessary to gather data on the producers' evaluation towards the natural materials' use. The samples' dimensions (closed and open), as well as pictures of the packages being opened were taken for further examination of the employed wrapping techniques. A sketch of each sample's wrapping steps was drawn. Then, the found wrapping patterns were compared to each other, and the common attributes analyzed.

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<sup>2</sup> Oda debates how the use of natural materials in traditional packaging used to be a characteristic of rural areas and was not limited to shops. These packages were born out of necessity and the available materials were adapted to shapes to meet a function, be it protection, preservation or transportation [p.13].

<sup>3</sup> Tanaka explains how bamboo sheathes keep temperature and humidity levels balanced inside through its pores' ventilation, a property that allows foodstuffs wrapped in them to last for longer [p.83].

<sup>4</sup> Muroi explains that the bamboo leaves' preservation property is a result of the big amount of vitamin K, calcium ions in its composition [p.65].

<sup>5</sup> Kyoto is known as Japan's cultural center, where most of the tradition-related practices flourish —i.e. the Tea Ceremony, Kimono, *Wagashi*, Literature etc— making the city's practices a reference to the rest of the country.

<sup>6</sup> In some cases, the samples were acquired in sweet/souvenir shops that did not necessarily manufacture them.

## 4. Natural materials

The use of natural materials can be observed in many aspects of traditional old Japan's everyday life. From houses' structures to domestic utensils, the presence of natural materials (mostly obtained from plants such as wood, bamboo and straw) appears not only in the form of durable goods (furniture and instruments), but also as the so called "short-lived" packages; basically supposed to enclose, protect and enable its contents to be easily carried around. In Japan, the term "*keitai shoku*"<sup>7</sup> is literally translated into English as "portable food". This concept started being coined by merchant travelers and soldiers, away from their homes for long periods of time. Along with the "*keitai shoku*", the "*hozon shoku*" (preserved food) concept also came to the scene and with the development of many food preserving techniques being carried out, the use of bamboo sheathes and bamboo leaves in the wrappings is said to be one of the many means to enable food products to last longer. It is also widely said that the *takenokawa* and the *sasanoha* distinct scent (*kaori*) transferred to the sweets are considered a savory characteristic (*fuumi*)<sup>8</sup> to Japanese people's taste.

### 4.1. Bamboo sheathes - "*takenokawa*"



Fig. 1. The bamboo sheath

It is the sheath (Fig. 1) that covers and protects the bamboo's culm. Not as flexible as the bamboo leaf, the bamboo sheath is used not only to wrap sweets, but also many other types of food. Within the researched samples, thicknesses varied from 0.5 to 1 mm in the same sheath with the dimensions ranging approximately 550~600 mm in length and 150~200 in width. There are two main species used in wrappings: *Madake* and *Mousouchiku*. The "*Madake*" (*Phyllostachys bambusoides* Seib. et Zucc.) is considered a high-quality wrapping material for its sheath presents a smooth surface. The broad sheath of the "*Mousochiku*" (*Phyllostachys heterocycla* Mitford. form. *pubescens* Muroi) is considered inferior

because of its hairy surface. However, its large dimensions are taken as an advantage, depending on the sheath's use.

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<sup>7</sup> Tanaka mentions the term "*keitai shoku*" to explain the origins of *Akumaki*, a kind of sweet made from glutinous rice steamed inside the bamboo sheath, during their late Boy's Festival in June. The term "*keitai shoku*" is sometimes related to "*hozon shoku*".

<sup>8</sup> "*Fuumi*" is one important characteristic of Japanese food culture. Many books mention the aromatic qualities both bamboo sheathes and bamboo leaves have. When I asked the *Wagashi* producers about the use of these materials, most of them would say that "*fuumi*" was very important. Secondly, they would mention their preserving properties.

## 4.2. Bamboo leaves – “*sasanoha*”



Fig. 2. The bamboo leaf

The sasa (bamboo grass) leaves used as wrappings measure approximately 250~300 mm in length, 40~50 mm in width and 0.1~0.2 mm in thickness. Their color is vivid green and they possess great flexibility while fresh and moistened. Bamboo leaves (Fig.2) dehydrates fast by shrinking, losing its brightness and becoming crispy. Also used to garnish dishes such as sushi, sashimi or grilled fish, their presence becomes stronger with the coming of spring and during summer. Because the leaves dry up fast, they need to be kept moisturized. For this reason, the wrapped contents are usually kept humid, linking

the *sasanoha* image to “freshness”. There are two types commonly used for wrapping: the “*chimakizasa*” (*Sasa palmata*) and the “*kumazasa*” (*Sasa Veitchi* Rehd.).

## 5. Package samples and wrapping patterns

24 bamboo sheath samples and 14 bamboo leaf samples have been collected so far. From these 38 samples, 14 wrapping patterns were identified for the bamboo sheath, and 8 for the bamboo leaf.

### 5.1. Wrapping patterns

Although bamboo leaves and bamboo sheathes have different thicknesses, proportions and textures, their outline shape is somewhat similar, with a pointed shaped tip and broader width in the middle. However, because of their differences in proportions and thicknesses, they presented distinct types of wrapping patterns.

#### 5.1.1. Bamboo leaves' wrapping patterns

Chart 1 shows bamboo leaf's 8 patterns, in which #1, #3 and #6 show variations of a same pattern, with #1 and #3 varying the wrapping steps and #6 having the edges cut out as shown in Chart 2. #2 and #4 are also variations of the same pattern, differing basically in the placement of the sweet in the wrapping: exposed or enclosed as shown in Chart 3.

Chart 1. Bamboo leaf patterns' chart

Image	Pattern #	No. of leaves	Use of leaves	No. of samples
	1	1	whole	2
	2	1	whole	2
	3	1	whole	2
	4	1	whole	2
	5	1	whole	1
	6	1	cut	3
	7	2	whole	1
	8	2	whole	1

Chart 2. Variations of wrapping patterns #1, #3 and #6

Pattern#	Wrapping steps sketch
#1	

#3	
#6	

Chart 3. Variations of wrapping patterns #2 and #4

Pattern#	Wrapping steps sketch
#2	
#4	

### 5.1.2. Bamboo sheathes' wrapping patterns

Chart 4 shows the bamboo sheath wrapping patterns. Variations are observed in #2 and #7, apparently the same pattern —bamboo sheath wrapping carton box— the difference lies on the number and use of the sheathes. While #2 used two cut sheathes, #7 used one only one whole one. Although #8, #11 and #14 also have similarities in shape and strapping, #8 uses one cut sheath, #11 use one whole sheath and #14 uses two cut sheathes.

The bamboo leaf patterns #1, #3 and #6 have similarities with the bamboo sheath pattern #9, indicating that these two materials' similar outline can sometimes create similar shapes.

Chart 4. Bamboo sheath patterns' chart

Image	Pattern #	No. of sheathes	Use of sheathes	No. of samples
	1	1	cut	4
	2	2	whole & cut	2
	3	1	cut	1
	4	2	cut	1
	5	1	whole	3
	6	1	whole	3
	7	1	whole	1
	8	1	cut	2
	9	1	cut	2

	10	1	whole	1
	11	1	whole	1
	12	1	cut	1
	13	1	cut	1
	14	2	cut	1

## 5.2. Parametric analysis

From these 38 samples 19 parameters were taken into consideration. They are explained in the following charts:



Table A shows that even though a greater number of the samples (13) had the sweets wrapped straight to the bamboo sheath, almost the same number of them (11) had the sweets wrapped in plastic film or bag, and then wrapped over with the bamboo sheath. Four samples were vacuum-packed, placed inside a carton box and wrapped with the bamboo sheath. Two of the samples were laid on a plastic tray, wrapped in a plastic bag and

then in bamboo sheath. This increase in the number of layers is an indicative of modern packaging trends along with the introduction of preserving techniques —plastic bags, vacuum-packing, desiccant packets— that not only extends the products' shelf life but also relates to the contemporary standards of food safety<sup>9</sup>.

<sup>9</sup> According to the Notification no. 513 of Japan's Ministry of Agriculture, Forestry and Fisheries (established in March 31, 2001) regarding "Quality Labeling Standard for Processed Foods", all processed foods kept in containers or packages must be labeled, indicating: type of food; "best before" date or "use by" date; names of ingredients; net

As part of the preparation method, some of the sweets were steamed while wrapped straight to the bamboo sheathes. Because the steam's humidity penetrates the bamboo sheath, a desiccant packet was wrapped along inside an outer plastic layer in most of these cases. Along with the plastic wrappings, most of the samples (even the little individual ones) had quality labels sealed on them (Fig.3). This kind of sweet is generally called “*mushiyokan*” (steamed sweet jelly of beans) and some variations such as the “*dechiyokan*” and the “*kuri mushiyokan*” (*mushiyokan* with chestnuts) are manufactured in autumn/winter. In one of these cases, a desiccant packet was not placed in the package and the sweet was wrapped in plastic film and not straight to the bamboo sheath. In another case, the sweet was vacuum-packed and then wrapped over with the bamboo sheath. These sweets ended up losing their characteristic bamboo sheath aroma.



Fig. 3. Quality label, desiccant packet and plastic wrapping over the bamboo sheath

Because the sweets wrapped with bamboo leaves did not have a plastic layer in between the sweets and the leaves, these table is concerned only to the analysis of bamboo sheathes samples. However, the bamboo leaf packages, similarly to the bamboo sheath ones, were also individually wrapped in plastic bags in order to keep the leaves' moistened and sealed with a quality label.

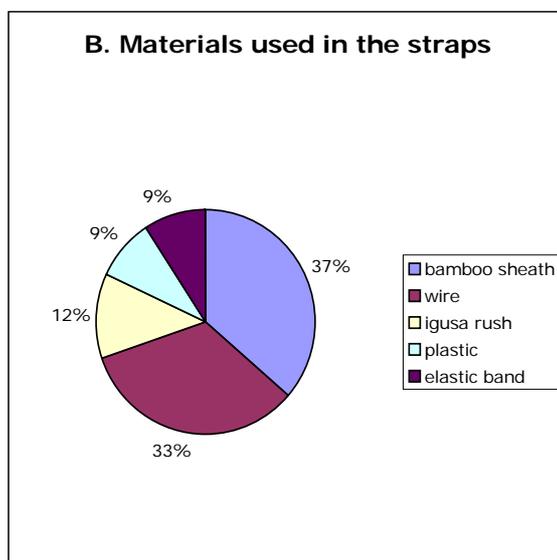


Table B illustrates the condition of the samples that had straps tied around one or two of the wrapping edges and/or holding the labels in the middle. The material used in 37% of the cases is the bamboo sheath. Strips made of *igusa* rush represented 12%, and the ones made of plastic and elastic bands represented each, 9% of the cases. In the remaining 33%, the wrappings were strapped with wires. Inside these occurrences, 70% of the wires were covered

with a bamboo sheath patterned paper. Even with the employment of artificial materials, the need to keep on conveying the image of “traditional” is very strong in Japan.

contents; instruction for storage; name or trade name and address of manufacturer. Japanese sweets are classified as processed foods with other sweets in the Attached Table 1.

Tables C and D show how many bamboo sheathes/leaves were used in the wrappings. In both cases, the use of one sheath/leaf is dominant (88% and 86% respectively). A smaller percentage of 12% and 14% used 2 sheathes/leaves in their wrappings.

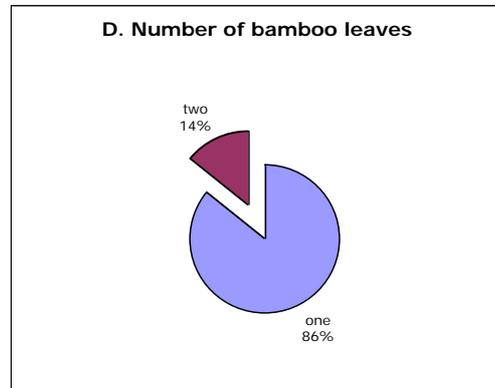
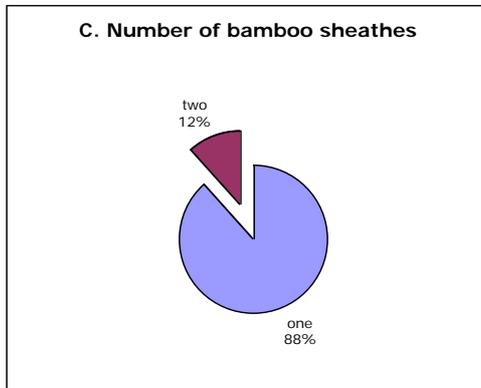
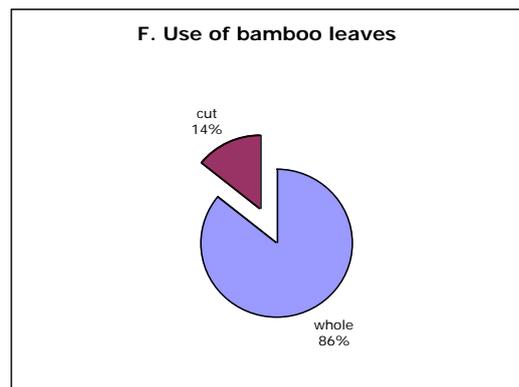
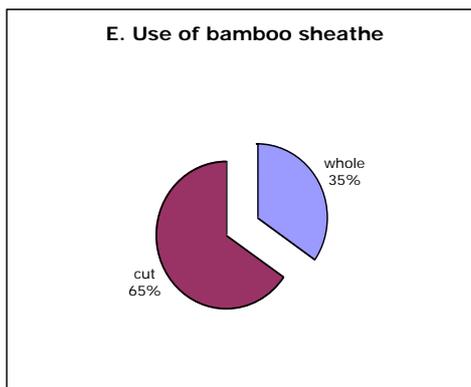


Table E indicates that more than half (65%) of the bamboo sheathes were used having one or both edges cut out to better conform to the packaging shape. 35% of the samples kept the sheathes' original shape.



In the bamboo leaves' case, Table F shows that a small percentage of 14% of the samples had the leaves' edges cut out, whereas the remaining 86% had used the leaves as a whole, sometimes even leaving part of the stems.

### 5.2.1. Analysis evaluation

- I. From Table A, we observed that the bamboo sheath is being relegated from its traditional use as a packaging material with food preservation properties, to a mere means of decoration (Fig. 4). The functional use of bamboo sheathes in the sweet's preparation becomes more present especially during autumn when the *kuri mushiyokan* season starts all around Japan. Both pictures shown below are from the same kind of sweet —the *kuri mushiyokan*— acquired at the same week in different sweet shops from Fukuoka

city. Observe that the sweet in Fig. 4 is wrapped in plastic film, whereas Fig. 5 is wrapped straight to the bamboo sheath.



Fig. 4. The plastic film layer in between the sweet and the bamboo sheath



Fig. 5. Sweet wrapped straight to the bamboo sheath

- II. In Table B, we can observe once again, the need to keep the “traditional image” in the packages, even when the materials are not necessarily traditional (in this case traditional would mean natural). The use of wires covered with bamboo sheath patterned paper was as predominant as the samples strapped with natural materials such as bamboo sheath or *igusa* rush strips. Elastic bands and plastic strips also were used and totalized altogether 18% of the occurrences. Such use of artificial materials can be simply inferred as a convenience, a practicality. It is no doubt that firmly tying the packages, finishing it with a handsome tight knot using bamboo sheath/*igusa* rush —non-elastic materials— requires more time than just placing an elastic band or twirling a piece of wire around the edges. The elastic bands, plastic strips and some of the wires were colored red, gold, or simply showed their plain original look. A great percentage of the wires, on the other hand, were covered in paper imitating the bamboo sheath pattern. That way, it would apparently look like a genuine bamboo sheath strip was being used.
  
- III. Tables C and D show a visible predominance of samples being wrapped with a single bamboo sheath or bamboo leaf. A minority, wrapped with two sheathes/leaves, showed both functional and aesthetic needs to explain its use. In Fig. 6, 7 and 8 for example, the use of 2 cut pieces of bamboo sheathes are placed crossways to obtain a squared shape. In Figs. 9 and 10, we observe that the use of 2 bamboo leaves gives a different effect on the arrangement. In the remaining cases, the use of 2 bamboo sheathes/leaves is

mainly supposed to make the wrapping sturdier, or to cover a bigger sweet.

IV. Table E indicates that the bamboo sheathes were cut in 65% of the times and used as a whole in 35% of the samples. In the bamboo leaves' case, 14% of the leaves were cut and 86% were used as a whole. As the bamboo sheath is much bigger than the bamboo leaf, cutting its edges to make it proportional to the sweets' size happens more often. Also, both the bamboo sheath and the bamboo leaf's original shapes are oval, bearing a point-shaped edge. Sometimes, cutting the edges is one way of changing the material's shape. Regarding the size difference, it should also be reminded that bamboo sheathes wrap sweet portions for many persons, whereas bamboo leaves wrap a 1 person serving.



**Fig. 6.** Closed package using two layers of bamboo sheath forming a squared shape



**Fig. 7.** The same package (open) using two layers of bamboo sheath



**Fig. 8.** Arrangement of two bamboo sheathes



**Fig. 9. Closed package using two layers of bamboo leaves**



**Fig. 10. The same package (open) using two layers of bamboo leaves**

## 6. Conclusion

The use of natural materials, developed from primal necessity, evolved throughout the years into shapes and patterns that are still being used in the present. Nowadays, the purpose of their use is seldom based on functionality, but on aesthetics. We have observed variations of packaging patterns according mainly to the sweets' types and not necessarily on their geographical origins, as previously expected. Furthermore, we detected a shift in the purpose of the packaging from the primary function of protecting and enclosing its contents towards a more decorative one. In our modern society, the rise of artificial materials and chemical preservatives for food safety's sake as well as consumers' peace of mind became an unavoidable issue. The use of natural materials in Japan is no longer based on their physical properties, but as a trendy means of recollecting and symbolizing old customary traditions.

Japanese packaging design is full of unique features based on culture. However, with the introduction of modern wrapping technologies and enactment of new laws, even the traditional packages are succumbing to "modernization". Moreover, because Japan lives in an ancient-modern environment, and because Japanese people praise to keep their traditions, the so-called "traditional" packages using natural materials survive in the market until the present days. In a time where themes such as recycling and the waste problem rise in the media, re-thinking the necessity of choosing a wrapping material when it does not meet a proper function should be made important.

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