



The Redesign of The Tea Pot

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Abstract

Drinking tea has a long history in China. Drinking tea with family and friends is a significant way to communicate and relax in traditional Chinese culture. Life changes with time; people have less and less time to communicate face to face. Today's pace of life changes peruses by new technologies. Family members are now spending most of their time connecting on the phone. Therefore, they may not have perceived each other's emotions, facial expressions, their inner thoughts, and feeling and as a result, increasing the distance between people more and more.

The author believes that teapot will not merely be a cultural product but will also evolve as a centerpiece of human connection. If the family members join tea time together, it may bring back the good relationship among them. In this study, the author proposed five sets of the redesign of tea sets, which were inspired by the concept of strengthening the relationship between the family members. This study started with an experiment to choose the best materials for the teapot. A survey for the preferable kind of tea between black Chinese tea and Green tea was conducted. The results were taken in to account as a criterion for the redesign of the tea sets. Moreover, the tradition in making a Chinese teapot, the process, and various aspects of preparing an excellent cup of tea were incorporated into the design.

Keywords: *Art of drinking tea, interpersonal communication, traditional Chinese tea culture.*

1. Introduction

China is the hometown of tea. Tea trees originated in China, and it is the first country in the world to discover and cultivate and use tea. Tea has now taken root in more than 50 countries around the world and has become one of the three most popular non-alcoholic beverages in the world.

A large number of scientific studies have confirmed that tea contains biochemical components that are strictly related to human health (Chen & Lin, 2015). These principal components are polyphenols, caffeine. It does not only refresh the heart, but also clear heat to relieve heat, dissipate phlegm, eliminate body fat to reduce weight, reduce irritability, produce saliva to quench thirst, brighten eyes, aide in stopping dysentery, be used in detoxification and decanting wine, and other pharmacological effects. It also has specific pharmacological effects on modern diseases, such as radiation disease, cardiovascular and vascular disease, cancer, and other diseases (Yang et al., 2009; 2011). Tea is indeed a natural health drink, but at the same time in China, tea and tea sets also carry a rich cultural heritage.

It can be learned that drinking tea is an important means of communication for Chinese people. Fukuyama (1988), a Japanese-American scholar, wrote a book titled "The end of history and the last man" points out that Chinese people regularly drink tea together to exchange information and opinions, which is a traditional and important way to connect with others, no matter they are relatives or friends (Fukuyama, 1988).

With the progress and development of science and technology, people's lifestyle has changed a lot, and their pace of life is getting faster every day. The rhythm of contemporary life is busy and fast and has led to a variety of estrangements between people, imperceptible in it seems to, and the friends or relatives of the side slowly pulled away from a distance but themselves; however, unaware. Moreover, the gap between people's hearts and minds is becoming more and more distant. Chances are, you live in a city like Beijing, with a population of over 40 million, and you do not even know the name of your neighbor. What does he/she do? Also living in the same city, you seldom spend time with your family due to busy work. In particular, China's 996 work system, which has become more and more typical in recent years (starting at 9 am and

[1965]



ending at 9 pm, working six days a week), will make people more and more strange to each other. For Chinese people, drinking tea together is a traditional way of communication.

In this study, the author proposes to redesign the tea set and the process of making tea in a group setting, in the hope that this will bring back the communication in people's lives. Four sets were drafted with different aspects hoping to increase people's interaction and shorten the distance between people when drinking tea.

1.1 Background of Tea Pot Design

There are many teapots designed by famous product designers in the world. Teapot by American designer Joey Roth makes people want to buy it when they see it. Designer Jack Craig designed the Teapot is very creative. Tom Dixon's tea set impressed the author. Tom Dixon can combine some seemingly unrelated materials well through his Design in many cases, and his works are full of ideological depth. It makes people think, and many times it makes people feel, wow, why didn't I think of that? Besides, he will integrate some traditional manual technology into modern Design, giving new vitality to these traditional technologies.

One of Tom's design philosophies is to "design from the inside out" to get rid of external and focus more on the internal structure of the product. In his book *Tom Dixon Interior Worlds*, Tom divides his creative journey into five parts: materialism, constructivism, reductionism, primitivism, and futurism. This exploration of structure and material reflected what he thought British products needed to hold on to, and tried to reflect the texture of the material itself.

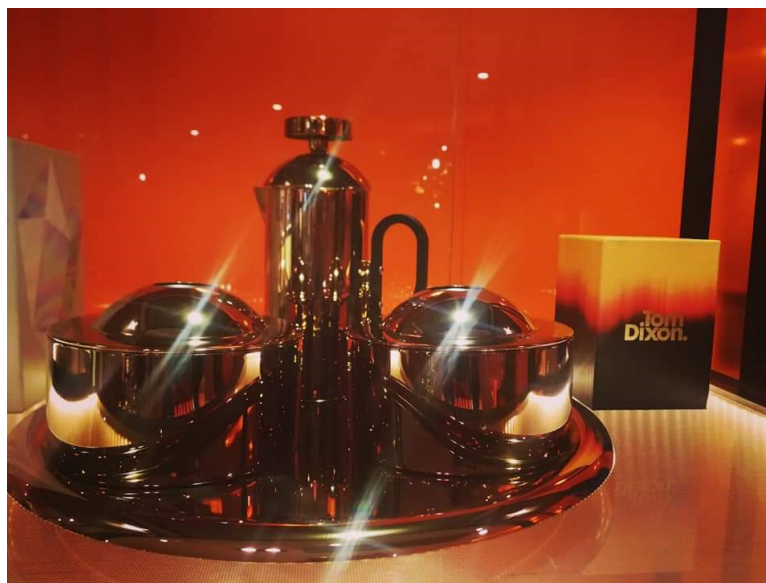


Figure 1 Tea kettle by Tom Dixon. The photo was taken at the Erawan Bangkok TOM DIXON store.

Tom Dixon initially welded some ready-made metal objects, such as discarded metal railings or steel wires, which he initially welded randomly and inadvertently turned into furniture. Despite the non-professional and professional background, the eclectic approach brought a lot of new and refreshing works, which also brought a significant impact on the design circle in London at that time. These structures became the basis of Tom Dixon's later work as a mature designer, from a welder boy to the most iconic British designer of all time. Metal and industrial styles became his label and became integral to the eponymous brand itself (Dixon, 2013).

[1966]



1.2 Tea set material

Porcelain originated in China, and tea service gives priority to pottery at the earliest. After the invention of porcelain, ceramic tea sets were gradually replaced by porcelain tea sets. The porcelain tea sets can be divided into white porcelain, celadon, and black porcelain tea sets.

White porcelain is characterized by dense and transparent blank, high glaze, need to be fired at high temperature, and excellent waterproof performance. If the finger flicks white porcelain, it will give out a clear and long sound. Because of its color and luster that are white, its property that can reflect the tea's watercolor and light, heat transfer, moderate heat preservation property, add color profusion, modeling each different, the white porcelain can be called the treasure in drinking tea vessel. As early as the Tang dynasty (1,100 years ago), the white porcelain produced by Xingyao in Hebei Province was exported to Rome, Italy (Zeng, 2009). Figure 2 shows a white porcelain tea set from the author's collection.



Figure 2 White porcelain tea set (from the author's collection)

Zisha teapot is a unique Chinese clay handicraft that integrates poetry, painting, sculpture, and manual manufacturing. It also is the most valuable collection of "antique" one. Zisha is a kind of material with high density and good permeability. If a Zisha teapot is used to brew tea, it will keep the original taste of the tea so that people can drink the purest tea. The thermal expansion and cold contraction properties of Zisha teapot are excellent. For example, in the cold outdoor winter in China, tea made in a Zisha teapot will never break due to a sudden change in temperature. The Zisha teapot can also be placed directly on the fire to make tea and will not be fire-baked crack. The longer the Zisha teapot is used, the brighter the color.

One of the advantages of Zisha material for the teapot is no stain retained at the bottom even though you do not clean the teapot in time after drinking tea (This is due to the unique material of the Zisha teapot. Another reason is that the raw material of Zisha is the associated mineral of rare-earth. Rare-earth is an important strategic resource of China, known as "industrial vitamins," and can be widely used in new energy, new materials, electronic information, aerospace, and other fields. At present, China's rare-earth production occupies an absolute position in the world, accounting for more than 90% of the world's annual production. Furthermore, rare-earths are in every piece of technology we know of, from integrated circuit boards in cellphones to airplanes and intercontinental missiles. China, which mines 90% of the world's rare-earths, has banned exports of the raw material). With other materials, it is easy to appear tea stains and not easy to clean, and the Teapot will retain the taste of the tea you have previously drunk. A set of Zisha teapot from the author's collection is shown in Figure 3.



Figure 3 Zisha teapot (from the author's collection)

Celadon is a type of porcelain in the firing process, the surface of the porcelain model is coated with an iron glaze, fired blue porcelain. It was found in the Eastern Han dynasty (1700 years ago) in Shangyu, Zhejiang, China. Celadon tea set is thin and firm, with graceful shape and full glaze layer. In the middle of the Ming dynasty (15th century AD), China was introduced to Europe and caused a sensation in France. People could not find a proper word to call it, so they compared it to the green robe worn by the heroine Shirley in the famous drama *Shepherdess*. In the Chinese tea set, the celadon tea set appeared earliest. In the Eastern Han dynasty, Shangyu in Zhejiang Province had already made celadon tea sets, which experienced the flourishing period of the Tang, Song, and Yuan dynasties in China, and was slightly neglected in the Ming and Qing dynasties. The Celadon tea sets are mainly produced in Zhejiang, Sichuan, and other places. Among them, the celadon tea sets produced by LongQuan kiln in LongQuan county, Zhejiang Province, is famous for their simple and straightforward shapes and their green glaze, which is known as “the flower of porcelain.” During the Southern Song dynasty, LongQuan Celadon of excellent quality was not only popular among the people, but also became the primary commodity of the foreign trade exchange of the ancient Chinese emperors (Zeng, 2009). Figure 4 illustrates an example of a celadon tea set.



Figure 4 Celadon teapot (from the author's collection)

[1968]



Stainless steel teapot supports heat resistance and corrosion resistance, and it is easy to clean, bright, and clean appearance. Despite those populations, stainless steel has the limitations of materials; in the modeling, stainless steel can only make with regular shape. Stainless steel tea sets are excellent in heat transfer, airtight, and durability that is not easy to damage. When used for brewing tea, it is easy to dilute the fragrance of tea; thus, it is mostly used as travel supplies, such as marching pots and double thermos cups. Tea people, who pay attention to tea quality, generally do not use stainless steel teapot. Figure 5 shows the cylindrical shape of the stainless-steel teapot.



Figure 5 stainless steel teapot (from the author's collection)

Silver pot is not much found in daily used because of its easily turning black caused by impurity air. In order to make tea in a silver teapot, the water should be purer than plain water. However, a tiny amount of silver may dissolve in the water and form silver ions. The release of silver ions destroys some of the tea's beneficial compounds. If used for a long time, the silver pot is prone to oxidation, and the color becomes black. It is not easy to maintain the silver pot. Consumers more use the silver pot as handicrafts or decorations (Figure 6).



Figure 6 silver teapot (from the author's collection)

Glass teapot has high transparency and is easy to clean and easy to shape at high-temperature. There are ordinary glass teapots and pyrex teapots. The ordinary glass teapots have a heat resistance between 100°C -120°C, while the pyrex teapots, made of high borosilicate glass material, is generally manually blown, low yield, and more expensive than ordinary glass. Because of the transparency of glass, it suits brewing the flower tea better, such as rose tea and chrysanthemum tea. Figure 7 depicts a glass teapot with a curved design of handle that brings about the artful aesthetic appearance.



Figure 7 Glass teapot (from the author's collection)

The final material mentioned in this paper is the iron teapot. The advent of the iron pot may have been an alternative method of brewing tea. First of all, the Mongolian people living in northern China have to move almost every month due to their nomadic lifestyle, while the appearance of iron teapot solves the weakness of fragile porcelain. Even later, iron teapots appeared in Japan, because fishers needed to go out to sea for fishing, and sometimes they could only come back in January. The characteristics of iron teapots that are not easily broken are very popular with fishers. However, the iron teapot also has a distinct disadvantage,

[1970]



easy to rust, not easy to maintain. Moreover, the iron teapot is stout more after being filled with water, and the black tea that comes out will not taste good. An iron teapot with a beautiful handle is shown in Figure 8.



Figure 8 Iron teapot (from the author's collection)

2. Objectives

The purpose of this research is to design a series of teapots, aiming to be part of the family and to strengthen the relationship among family members.

3. Methodology

The work consists of two parts. The first is the experimental guidance to verify the influence of different materials of teapots and water temperature on the taste of tea to find the best material for making teapots and the temperature of brewing tea. Secondly, the survey for exploring the favorable tea type, green and black tea, was conducted by interviewing 20 persons; ten elders and ten youngers. Based on the information from both parts, five designed tea sets were drafted and created using a 3-D computer program. Those series of redesigned teapots are proposed with a goal to encourage the enjoyable tea time for the family in the future.

3.1 Suitable material for a teapot

Equipment and materials:

1. Pots of different materials: Zisha pot, Iron pot, Silver pot, Pottery pot, Stainless steel pot, and Glass pot

2. Experimental water: PH value is neutral distilled water.

3. Experimental tea: Green tea and Black tea

4. Experimental equipment: cup, testing tools, electronic PH test pen, and a thermometer

Experimental:

The whole experiment procedure is straightforward, from boiling water, making tea, to testing.

1. Pour 50 ml distilled water into an empty bowl.

2. Add three drops of PH reagent, and the color of the water will change. The comparison of PH color cards shows that water is between 6.8-7.5, demonstrating that distilled water is neutral.

3. Gradually pour the distilled water into each pot and wait for the water to boil.

4. Pour boiling water into empty bowls and drop the PH into each bowl. The water will gradually change its color.

[1971]



5. Finally, the author can intuitively see that the “watercolor” is not the same. Still, there are also similar colors, so the author will use the electronic PH test probe for further testing to ensure its accuracy.

3.2 Opinions of elders and youngsters

Twenty people (ten young people and ten older people) were approached to detail on their favor between black tea and green tea.

3.3 Redesign of the teapot

A series of teapots based on the concept of promoting joyful families are sketched, 3D-designed, and finally proposed in this paper. Based on the inspiration that a design can increase people’s communication and interaction and shorten the distance between family members comprising elders and youngsters.

4. Results

4.1 Experimental study

Figure 9 showed pictures of Green tea and Black tea used for testing and comparing the sentiment between two groups of people; elders and youngsters.



Figure 9 tested tea; (a) green tea (b) black tea (from the author’s collection)

Concerning the interview, older people like to drink black tea more than green tea, and the contrary result was observed for the younger. The distinct between elder and younger was incorporated into the part of the design assimilated into one.

The result of the experiment for appropriate material was concluded. Based on the experiment testing with two kinds of teas in the different materials and a range of temperatures. The criterion is the condition of PH of 7.4, which is the best taste, according to the China Tea Research Association. The result showed below.

Green tea tastes best at a water temperature of 80 degrees Celsius using white porcelain or glass teapot.

Black tea tastes best at a water temperature of 100 degrees Celsius using a Zisha pot or white porcelain.

Through the experiments, the author finally found that white porcelain is the best material for brewing black tea and green tea. Therefore, white porcelain was chosen when designing the product shape.

4.2 Inspiration and Design of teapot

The design comes from a combination of imagination and life. Sometimes imagination is like a ticket through which we can better understand the world we live in. Imagination is very abstract and expressive. It produces memories and establishes the order of your memories. Thus, the relationship between peoples, between people and the world, is established. If you build up memories of the past in your mind, when you encounter something new that you cannot describe, you will combine your memories of the past with what you see now to form your thoughts. The human imagination has always been the product of a fusion of the



inner and outer worlds. The following design works are also designed in this way. Take the origami teapot, for example. Almost everyone had played the game of paper folding when they were children, so when you see the products like the origami shape white porcelain teapot and teacup placed in front of you, it is easy to remind you of the beautiful memories in your childhood. At this point, the user and the designer will have a powerful emotional resonance, which will shorten the distance between people.

The author proposes five styles of tea sets. All of those show the creative inspired with the concept of assimilation into one for a joyful family. All details for each set are described below.

4.2.1 *The cuboids and triangles set*

Good looking things are more comfortable to use. It may sound strange because of a rational point of view; it makes no logical sense. However, humans are higher animals with emotions, and the unconscious plays an essential role in our hearts. Because there is a subconscious, our reason is dependent existence, so to measure whether a product is right or not, it cannot wholly rely on the experience. Because to some extent, the experience is a subconscious thing. Therefore, when this product was designed, Cuboids and triangles were combined to form a combined teapot of international style.

A set of teapots was drafted, as shown in Figure 10, aiming that the final product could be made into a paper-folding teapot with white porcelain as the material. The primary forms are cuboids and square. The teapot body is a cube box with a square mount along with a square lid. The four walls of the teapot are angled to enhance the modern designed pattern. Two triangle beaks are mounted on two opposite sides, allowing the way out for different two tea solutions. This teapot has just one handle that one can pour the tea from both sides of the beaks. It shows a real combination joining between desirable green and black tea into the same pot. Figure 8 shows a 3-dimension tea set drawn by a computer drawing program. It shows the corresponding two teacups with the rectangular-based forms.

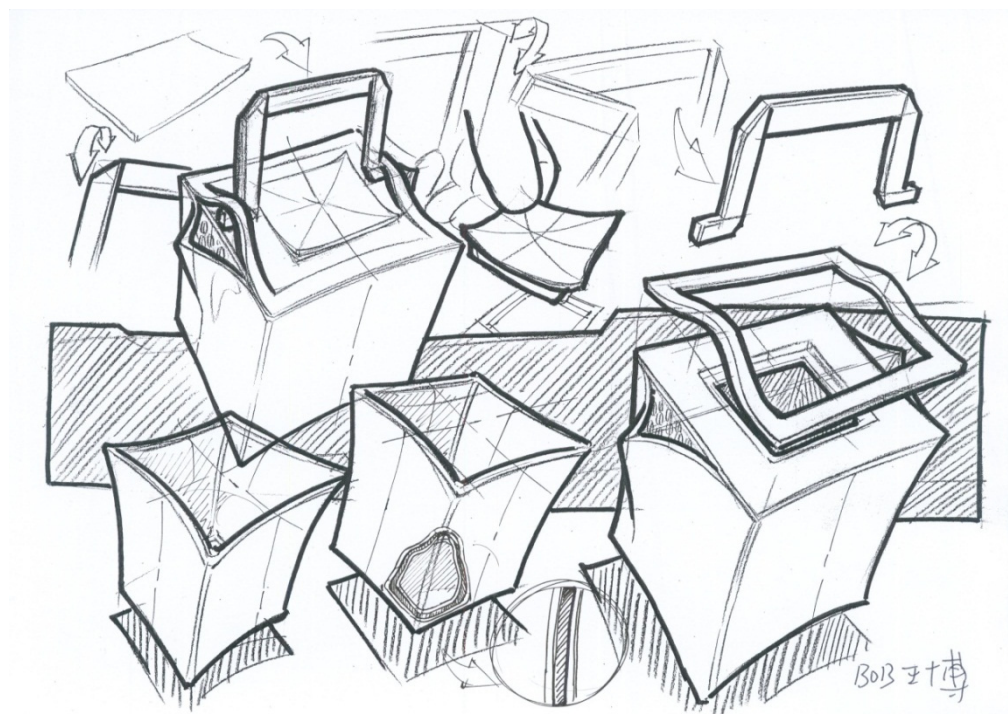


Figure 10 First draft of the cuboids and triangles set



Figure 11 3D photo Teapot and cup

Figure 12 clearly shows the interior of the teapot inspired by tai chi patterns. There are two separate parts inside the teapot supporting the different tastes between green and black tea. The S-shape of the membrane allows the one-direction of outflow for each section. In terms of function, it means that both black and green tea can be made in the same teapot and can be poured by the opposite side, providing different tea in one pot. You can imagine that two people or more can join at the opposite position and hand one the same handle and turn the wrist to pore the different tea—no need to turn around the teapot. The same handle with the opposite direction can serve the different tea for the enjoyable tea time among family. The porous at the two spouts is a modern design that is not only for filtering but also for the preservation of the tea temperature.

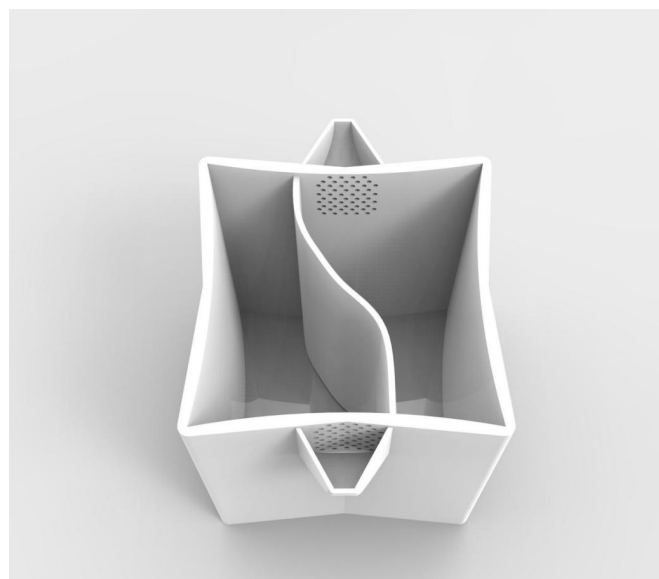


Figure 12 The internal structure of the teapot

[1974]

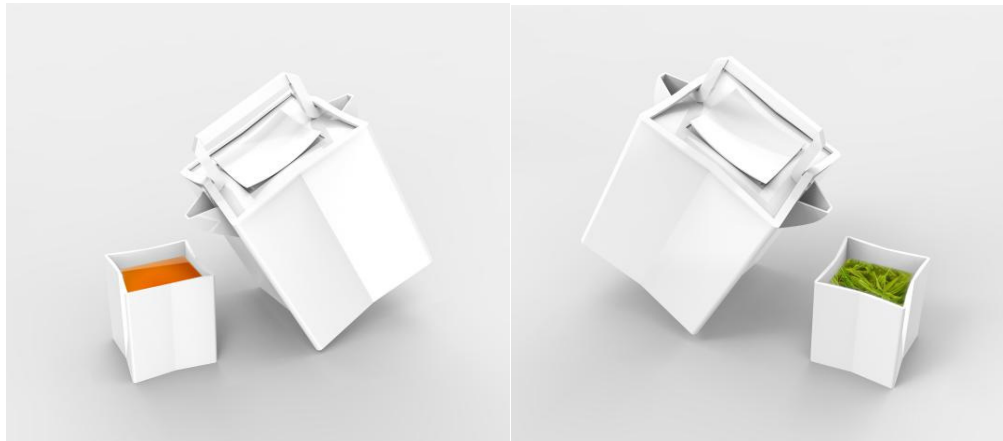


Figure 13 Two sides of beaks provide the two options of tea pouring to the glass.

Moreover, to maintain the hot temperature, the surface of the pot is designed with double walls and an internal hollow (Figure 13). It also solves the problem that the pot and the cup are too hot to touch.

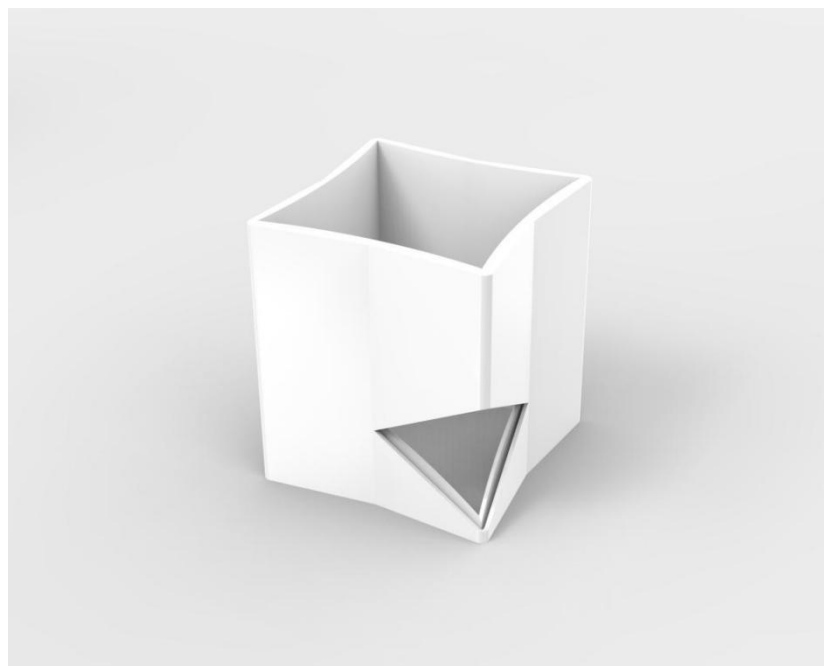


Figure 14 Inside of a double - layer teacup

4.2.2 The cylindrical and triangles set

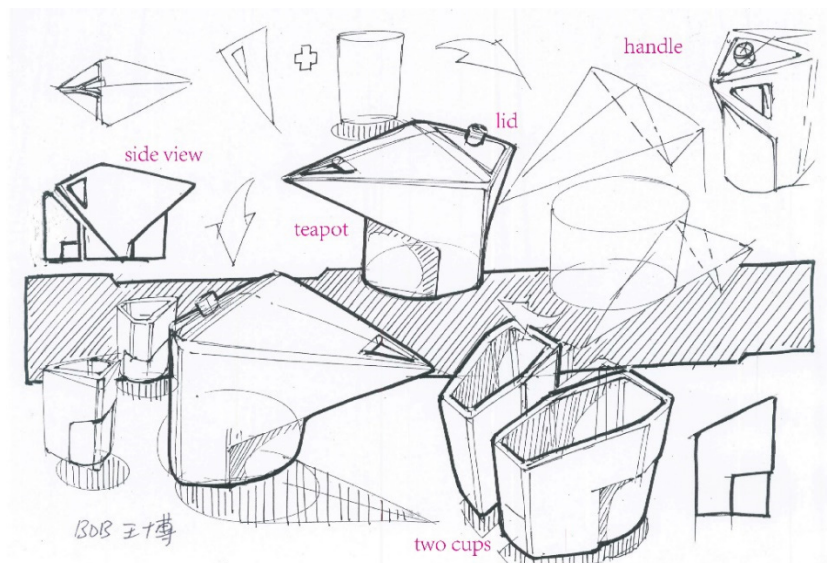
Creativity came from this sentence—Simplicity is not easy. Then, the design can be designed based on the simple shapes like triangles and cylinders. The combination of those forms is further improved and deepened to get the final shape. The triangle and the cylinder are combined to form the main body of the teapot. The acute angle of the triangle can be designed as the spout for pouring tea solution easily. The teapot and teacup are combined as a whole.

Figure 15 shows the sketch of the first draft of teas sets structured from cylindrical and triangles. It is a perfect combination, providing a cylindrical teapot with a big triangle beak. The lid is designed based on two combinations of two triangles (trapezoid-like shape). The angle between the two triangles provides the

[1975]



modernized lid. It is mounted with a small cylindrical handle. The incredible design of this set responds to the assemble among the pot body, the pot funnel, and the cups. Figure 16 shows that the specific shape of the pot funnel and two cups can be placed with the pot body. The assembled set provides the convenient packing of the set. Figures 16 and 17 show other viewpoints to clarify the assembled parts. The teapot funnel (Figure 18) has a creative design with the filtered layer allowing the definite solution to pass through the spout. A double wall for cups could protect the users from heat. This scrupulous design aims to strengthen the family relationship.



Design 2

Figure 15 First draft of the cylindrical and triangles set



Figure 16 3D photo Combined form of teapot and teacup

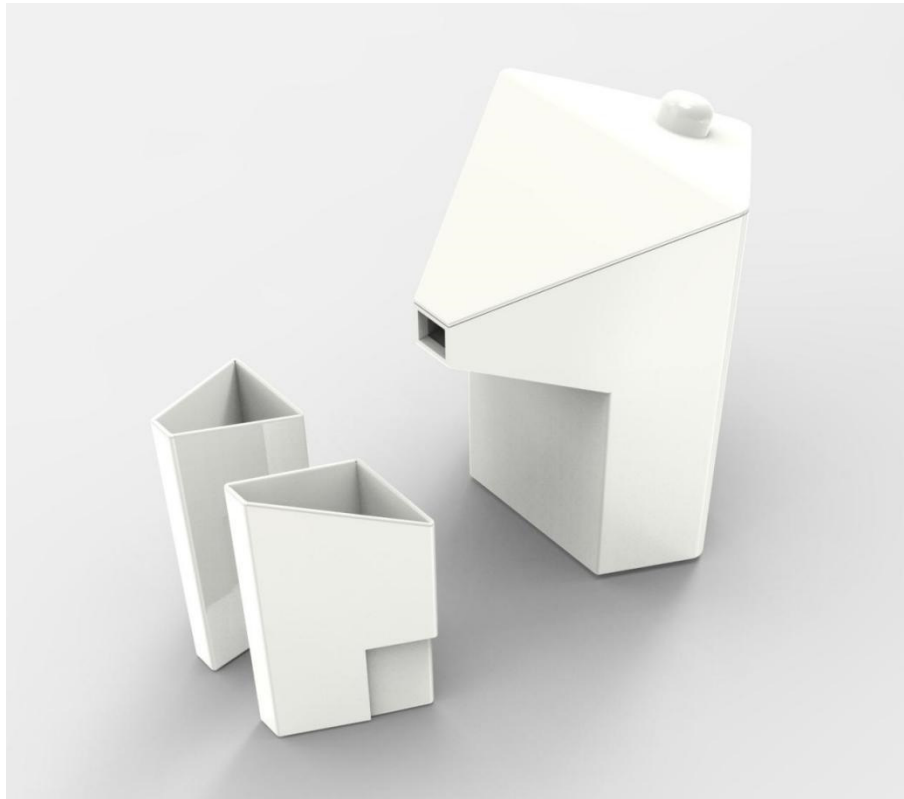


Figure 17 Vertical view of the Teapot and cup



Figure 18 The teapot funnel

Figure 19 Double vacuity teacup

[1977]



4.2.3 One for all; Nature wooden handling tea set

The designer is, in a sense, the visual director. What the designer presents is what he wants you to see. For example, the shapes of pebbles and branches we see come from nature, and the pure natural shapes in nature are the most beautiful, which is the traditional Chinese aesthetic. Now we live in a forest of tall buildings like concrete, that is, in the city. It is in contrast to the natural form of nature, a powerful confrontation, a contradiction of beauty.

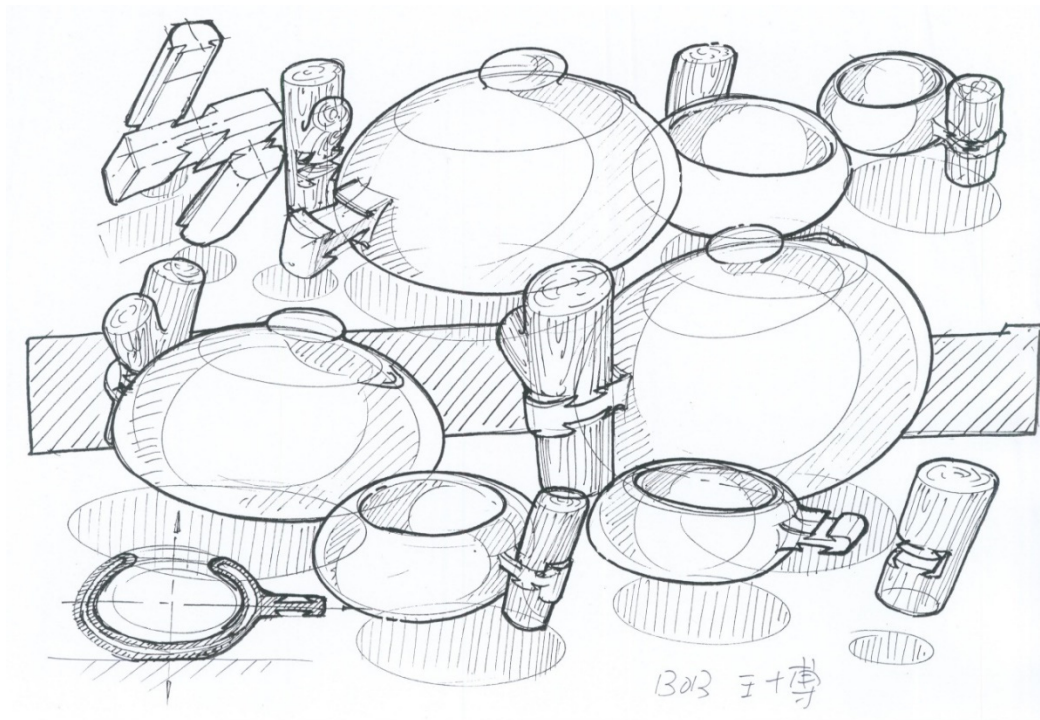


Figure 20 Sketch of design for nature wooden handling tea set

Figure 20 drafts nature wooden handling tea set base on the concept that joining tea time with one handle allowing family hand teapot and cups with one handle. The cups and teapots are made of white porcelain with wooden handles. The combination of handle and teacup and teapot is based on the traditional Chinese mortise and tenon structure. The handle is finally shown in Figure 22, composing of rootstock and groove. This design can lock the teapot for both lifting and pouring. Figure 21 also shows the 3D photo Teapot, cup, and handle. The same handling can lock the teacup by the groove demonstrated in Figure 21-23.



Figure 21 3D photo Teapot, cup and handle



Figure 22 Teapot handles can be assembled in and out



Figure 23 Teapot and cup

Figure 23 The simple of designed handling shows the contradiction of beauty and its usefulness. This inspiration supports the family's enjoyable tea time.

4.2.4 Rocking doll tea set.

The inspiration for this design came from a trip to Chiang Rai, Thailand. There are some local people making water cups and cooking with bamboo. It was interesting, and therefore teapot was design base on the bamboo tube. The movement of the bamboo tube was incorporated and yielded a rocking doll style.

The rocking doll tea set was designed based on the adorable movement for poring tea. This design was created to salute the problem and bring people to get closer to the fun. This style was designed the way for pouring tea semi-automatically by simply pressing the handle of the teapot, in order to reduce the process of pouring tea. The inside of the teapot is also divided into two parts to make black and green tea simultaneously. The two cups must be placed together to ensure that the tea does not spill on the table. It allows people to focus more on the topic they are communicating with.

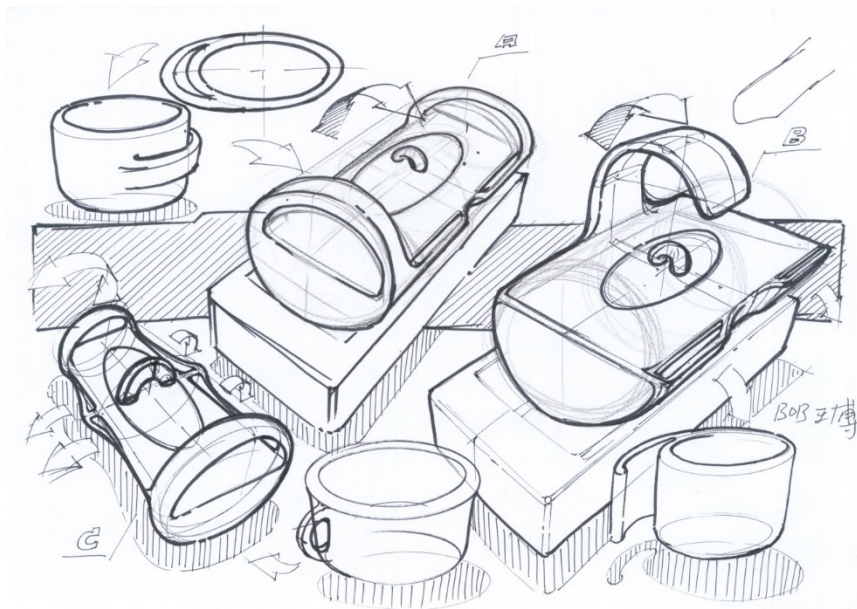


Figure 24 The sketch drawing of rocking doll tea set

Figure 24 shows the sketch drawing of a rocking doll tea set designed based on the bamboo tube. There are three different design groups, A, B, and C. The difference among three designs is mainly in the handle of the teapot, the spout. The teacup handle has been adjusted to form different styles as detailed;

Group A, the first of designs, when we press on the handle of the teapot, the teapot can pour out the tea. After releasing, the teapot itself will return to the state of no tea. Group B, the second design, is the same as the first one, but the handle of the teapot is designed on both sides of the teapot. Meanwhile, the handle of the teapot is also used to design the teacup, forming the consistency of the model. Group C, the third design, is inspired by the local technique found in Chiang Mai province, the northern part of Thailand. The author has visited Chiang Mai for a class activity and saw the local aborigines cooking rice in a bamboo tube. Then, the design of a teapot with the common bamboo in Thai life was developed, as shown in Figure 24 (C).



Figure 25 Overlooking the Angle of the tea teapot and cup

[1981]



The design is to get people to pay more attention to what they are talking about than making tea. With this design, tea can be poured by pressing a finger. Because the bottom of the teapot is a semicircle, once the fingers are loosened, the teapot will return to its original shape. Both teapots have spouts on one side, which means you have to put the two cups together close to the spout to pour tea (Figure 25). The inside of the teapot (shown in Figure 26) is also divided into two independent parts, which can brew black tea and green tea at the same time to meet the needs of different tastes. Figure 27 shows other views of the well-designed teapot from different angles.



Figure 26 Internal structure of teapot



Figure 27 The back of the Teapot

5. Conclusion

White porcelain was chosen as a material to redesign the teapot, following the materials' experiment results. The attempt of this work pursued by the concept of "bring back the family memory of drinking tea together." Four series of teapots were proposed; namely, Cuboids and triangles set, Cylindrical and triangles set, Nature wooden handling tea set, and Rocking doll tea set. Each of the tea set reflects difference and uniqueness, though possessing the same concept to be a part of the family tea time and to shorten the distance between the family members, that is, the elders and the youngsters. The author recreated the teapot in the hope that it will also encourage people to spend more time together in daily life through drinking tea with the family.

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