

The Development Process of Modern Household Objects

Coffee making devices for homes in the United States, 1900 - 1980

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Keywords: design history, coffee-making devices, the United States

Abstract

The ways of coffee making in American homes have changed very much in the past one hundred years. Coffee making devices in the U.S. have been modernized, as have many other everyday artifacts. After the Second World War, in particular, they have influenced many nations' habits of coffee preparation and consumption. In this paper, we trace the development process of American coffee making devices and try to account for their design changes through their background.

The electric percolator is an American invention of the early 1900s. Since then, many technical developments followed. It became the most popular method of coffee-making in American homes. The second popular type around the 1940s was a vacuum-drip device made of glass. Simple paper-filtering method spread after the 1950s. Automatic filter-drip machines almost overwhelmed the market after the 1970s.

These changes of methods/devices can be explained through some background factors: i.e., market competition and technical innovation, change of American 'taste' for coffee, and European influence on coffee making. Influenced by these factors, appearance and imagery of those devices also changed through some stages of the development.

1.0. Introduction

In this paper, we examine the ways in which a ubiquitous household object developed, and spread in American homes, in these hundred years. The objective of this study is to test the idea of 'evolution of objects' in the discipline of design history. For doing so, we chose coffee-making devices as a case object. We will trace the development process of the coffee making devices, and try to account for their design changes from their cultural, social, and economic backgrounds. We are looking at this very much anonymous process of evolution, rather than looking at personal contributions for the design changes as in the conventional history of design. The case study will show the usefulness of the objective approach into design history. Looking at the evolution of

objects is particularly useful to describe the dynamics of design changes of mass-produced objects in modern society.

In the formation of their modern history, Asian countries, which were initially influenced by the West, have now formed their own industrialized societies. Most of the modern products that appeared in Europe and America from the end of the 19th century were introduced to Asia, went through an initial stage of copying, and now they can be recognized as indispensable equipment for everyday life.

Those modern products marketed today in various countries are very similar at first glance to each other in their design and variety. However, when the process of development of these products and the way they are used are compared carefully, some interesting differences are discovered. The differences of these products result from the differences in social and economic conditions from which the products were developed. To understand the development of modern products fully, we have to look at the original development of those products, in this case study, in the U.S.

2.0. Backgrounds: Coffee consumption and the coffee brewing devices in the US

Coffee consumption in the U.S. increased quickly from the late 19th century through the early 20th century, and by the 1930s, the U.S. became the top coffee consuming country in the world. Clearly, this progress coincided with the growth of Brazilian coffee production (Ukers, 1935).

In coffee consumption per capita, the U.S. was next to Scandinavian countries and the average Americans were heavier coffee drinkers than French and Germans, according to a coffee trade statistic of 1938 (National Coffee Department of Brazil, 1942). In the U.S., coffee roasters emerged as an industry and home roasting became rare by the late 19th century. Major roasters such as Maxwell House marketed roasted and canned coffee beans throughout the nation. In addition, coffee retailers started grinding service for customers (Bramah, 1989). Coffee reached to American homes, being already roasted and ground for the first time. Following these changes around coffee consumption, the way of brewing coffee in homes started to change; that is to say, the development of new devices for homes. In the following chapter, we will see the process of the development and try to account for each development.

3.0. The Development of brewing methods and devices

Most of the coffee-brewing devices appearing in the U.S. market in the 20th century were originally invented in Europe in and even before the 19th century (Ukers, Bramah, op. cit.). In the U.S., those originals were refined and spread in large scale. Since the electric resistant-heat element was attached to percolators around the turn of the century, many technical developments followed, and the course of modernization, as a unique American phenomenon, started.

3.1. Pot (boiling method)

The most traditional way of coffee making from Colonial days was boiling. The common practice was to boil coarsely ground coffee in a pan, often a simple tin pot, for fifteen minutes to half an hour on a stove or open fire. This boiling method lacked sophistication and often ruined the

natural taste, but the early American preference for bitter coffee seems to be formed by this custom, and the preference for percolators in later years is related to this old way of brewing.

3.2. Drip Pot (filtering method)

In the late 19th century, specialist manufacturers such as Manning-Bowman appeared and began to produce nickel-plated drip pots in large quantities. These were called French drip pots or a 'biggin'. A filtering part, which was made of metal or ceramic, was put on the top of a pot, or inside a pot, and boiling water was poured on the ground coffee inside the filtering part (Fig.1). The filter was either metal mesh or cloth bag. The pot was made of various materials including ceramic, porcelain enamel, and notably from the 1930s, aluminum. The aluminum drip pot was popular until after the Second World War.



Figure 1: 'Rochester' coffee-pot with filter
(Rochester Stamping Works, 1895)

3.3. Pumping Percolator (circulation method)

Manning-Bowman Co. introduced the percolator to the U.S. in 1890. Other manufacturers, such as Landers, Frary & Clark Co. (later known as Universal), followed soon (Fig. 2) (Lifsey, 1973). The percolator spread widely and later became the most common means for coffee-making in the U.S. The principle of the percolator was invented in 19th century France, as were numerous other coffee-making devices, but it did not become popular in Europe. In the percolator, boiled water goes up through an inside tube and falls on ground coffee in the upper compartment continuously. This circulation, however, often ruins the taste and aroma of coffee, according to critics for this method. The spread of the percolator was reasonable because its usage was almost the same as conventional pot (boiling method): putting the pot on the top of the stove and waiting until the coffee is ready. The customary way of preparing coffee was sustained, and it was a little easier to use than drip pot. Moreover, the taste of coffee was better than conventional boiling method.

The design of the early percolator was similar to the conventional coffee pot for table use, except the top dome, which was made of glass to show the color of the brewed coffee. The urn type percolator for large number of cups was also made in early years but gradually the pot type became the norm in homes. Both the urn type and the pot type could be heated also by alcohol lamps. Even after electric models became popular, non-electric models did not become extinct.



Figure 2: The 'Universal' Coffee Percolator
(Landers, Frary & Clark, 1905)



Figure 3: Manning-Bowman Electric Percolator
(Manning-Bowman, c.1930s)

Corning Co. made glass models and Mirro (Aluminum Goods Manufacturing Co.) made aluminum models, both of which were popular even after the Second World War (Matranga, 1997).

3.4. Electric percolator

When the electric resistant heater was installed in the base (Fig. 3), instead of stovetop heating, percolator became more 'independent' by itself. This invention appeared around 1900 and Landers, Frary & Clark claimed they were the first manufacturer of the electric coffee percolator (Lifsey, op.cit.), which later became the symbolic object in the American electrified kitchen. Installing the electric heater into the device was not very difficult for manufacturers, so they kept making the both the electric and non-electric (stove top) models until the 1940s.

The body designs of those electric and non-electric models were almost the same to each other. They only followed minor fashion of pot design or variations of it.

Some technical refinements, like a safety device against over-heating, or a mechanism of 'automatic cut off' electricity, and a mechanism to keep the brewed coffee hot, were added to the percolator, and thus the standard form of the electric percolator, as a home electric appliance, was formed by the 1950s. By then, many appliance manufacturers had entered the market and the body designs got some influence from "streamline", which was very popular at the time, as did other appliances.

Coffee trade organizations and coffee lovers, however, had long criticized brewing by circulation percolator from its emergence. They said that the circulation destroys the taste and aroma of coffee: 'it tastes bad' even if it may be convenient. From the 1910s onwards, when the percolator was gaining popularity, national organizations of coffee roasters had made several promotional campaign criticizing the boiling method and percolators (Ukers, op.cit.). Alternatively, they recommended drip and filtering for good taste. The campaign was intended to make the taste of coffee in American homes better and enlarge the coffee market. Most consumers by the time, however, did not follow the advice, possibly because appliance manufacturers were more powerful than coffee the trade sector and manufacturers wanted to add this new appliance into the line-up of home electric appliances. The electric percolator was advertised widely and attractively, and it appeared to be more convenient and 'modern' than other methods and devices. Those

advertisements often showed a scene of a breakfast table with a percolator and coffee cups on it, tacitly saying that coffee can be prepared automatically on the dining table in good style and therefore is convenient for busy breakfasts or other meals.

3.5. Coffee Siphon (vacuum method)

Other than the percolator, there was the coffee siphon, another ‘new’ device for homes. Most of it was made of glass, heated by alcohol lamps, and coffee is brewed down by vacuum through filter. Although the principle was known in Europe by the 19th century, models made of heat-resistant Pyrex glass, named ‘Silex,’ appeared in the U.S. market in the 1910s (Lifsey, op.cit.). The coffee siphon soon followed the course of ‘modernization’. Influenced by the electric percolator, or to confront it, the detachable electric heater was combined. This phenomenon is unique to the U.S. When it was intended for home use, the appearance was modified by adding decorative metal covers to match the table setting (Fig. 4).



Figure 4: ‘Lido Decorated Electric Model’ (Silex, c.1940)



Figure 5: Sunbeam advertisement for ‘Coffeemaster’ (c.1940)

Siphon movement of water between upper and lower glass compartment makes an attractive demonstration, and after the brewing, the lower compartment is detached to be a coffee server. The siphon became popular first among restaurants and hotels. Silex made success by making a variety of professional use models. Influenced by the electric percolator, some manufacturers, including Sunbeam, introduced all metal electric siphons from the 1930s and competed with percolators in the market (Fig.5). In addition, fortunate for the success of Silex during the Second World War, the production of everyday metal products, including the percolator, was restricted by the government because of a shortage of metal, but glass was free from the restriction.

3.6. Regional differences in the spread of the new devices in the 30s

Consumers in the 1930s could choose one of these new devices: percolator, drip pot or siphon. Surveys around 1930 showed that a growing number of households were switching from percolator to drip and vacuum methods (Pendergrast, 1999). The percolator, however, still dominated.

‘Tea and Coffee Trade Journal’ conducted a survey in 1932 (Ukers, op.cit.), which found that more than 50 ~ 70% American homes were using percolators, and the percentages varied in three regions (see Table 1).

Percolators were very popular (75%) in the northeast. Next to percolators, the traditional method of boiling by pot was the second popular in the Midwest, while the drip method, including coffee siphons, was popular on the west coast.

This regional difference seems to reflect the regional ‘taste’ for coffee, but also this may be a result partly of difference of electrification rate to the homes, and partly of location of manufacturers of the new devices. That is to say, manufacturers of percolators and coffee siphons may have been located mainly in the northeast and therefore new devices and the new way of brewing coffee may have spread from the region. In terms of home electrification rate, the Midwest region was very low, less than 15% even in 1935 (Nye, 1990). Obviously, Midwest dwellers remote from cities could not use electric percolator or electric siphon. The new electric devices at the time were intended only for the urban consumers. The relative popularity of drip method in the west coast, however, shows that there was a regional difference between east and west for the taste of coffee.

Table 1: Coffee brewing methods in homes, three regions, 1932

Brewing method	Northeast	Midwest	West coast
percolator	75.51 %	52.31 %	58.48 %
boiling	17.54	32.16	18.50
drip	5.43	12.79	20.11
others	1.52	2.74	2.91

Source: Survey on American Coffee Custom, ‘Tea and Coffee Trade Journal,’ 1-9, 1932 (quoted in Ukers, 1935)

3.7. Paper filter and the Automatic Coffee Maker

Paper filter has been known for long time, but it became common since the German company Melita established a local firm in the U.S. in the 1960s and started to market simple paper filter and filter cone. Before Melita, the most famous device using paper filter was Chemex (Fig.6). Invented by the German-American chemist Peter Shranborn, Chemex was marketed from 1941 by Shranborn’s newly established company. The glass body was made by Corning. Shranborn publicized Chemex widely, claiming that the simple design came from the idea of ‘Bauhaus’ (Lifsey, op.cit.). Later, even to the present, Chemex has been said to be a good example of functional modern design. The promotion for the modern movement by the design conscious sectors, like the Museum of Modern Art and design journalism, may have made Chemex disproportionately famous in the design world. It has, in fact, some ‘functional’ disadvantages: the body is breakable when it falls to the floor, the inside of the under part is difficult to clean, and the original paper filter was a little cumbersome to fold into the cone shape. For the majority of consumers, it lacked appeal because it was not ‘automatic’ at all. Its spread has been limited to the intelligentsias and fans of high modern design.



Figure 6: Chemex (1941)



Figure 7: 'Mr. Coffee' original model (1971)

The automatic coffee maker, the commonest to the present, is actually an electric - paper drip - automatic device. It appeared from the early 1960s for either professional (restaurants, hotel and catering trade) or office use. The custom of the coffee break in the working place was not known before WWII, but was introduced in the 1950s through a campaign launched by Pan American Coffee Bureau. Before the automatic coffee maker, vending machines to serve instant coffee had been used for the purpose.

Then, small and cheap models of plastic body, the most notably 'Mr. Coffee' (Fig. 7), appeared in the early 1970s and spread quickly among homes and soon superseded percolators (Walton, 1994). By 1974, half of the coffee-making devices sold in the U.S. were automatic electric drip (Pendergrast, op.cit.).

Why did Americans change their preference for coffee, from percolated coffee to paper-filtered one, in relatively short time? The reason of this sudden change is not clear. Did the anti-percolator campaign by coffee traders succeed eventually? The possible account for the change is that the American preference for the taste of coffee has changed gradually to one similar to the European. This tendency was accelerated by the growing opportunity of eating out, and a gourmet boom, from the 1970s. The chance of overseas travel for Europe also increased and Americans got used to the European taste of coffee. The introduction of the cheap filter machine may have been long awaited in this situation.

4.0. Design changes of Electric Percolators and its reasons

The age of percolators almost ended as we have seen. Here, we will look back into the design changes of electric percolators, and try to account for them. The electric percolators, and the electric siphon, were intended for use on the dining table, therefore the 'appearance' and the imagery that comes from it have been always been thought to be the important design condition. In each design, the appropriate imagery for the dining table, or for the cultural circumstances in which the product would be introduced, had been sought after. The design of the electric percolator went through three basic styles as follows.

4.1. Classic and Eclectic Style

Some time after the introduction of the electric models, some designs were intended to mimic consciously the classic styles of silverware: coffee pots and coffee urns, which were used by European or Colonial upper classes. The electric elements were concealed within the body. The design did not express its electrical nature and it was hard to distinguish from non-electric models. The manufacturers often made and marketed both electric and non-electric models through the 1940s. A series of such models made by Landers, Frary & Clark were sold, in the 1920s, with a sugar pot, a milk pitcher and a tray, all of which were in the same classic style to match the table setting (Fig.8). The electric percolator was still not common at the time and seems to be intended firstly for upper sector of the market.

From the introduction in the 1900s through the 1930s, most of designs were in the eclectic style, which combined the percolator's glass dome and electric heating base with classic pot designs. Notable examples of the eclectic style were models by Royal Rochester Company. Around the 1930s, Royal Rochester was popular for their ceramic body percolator with decorative pattern. Universal (Fig. 9) and other brands also made similar models. Their use of ceramic in the electric percolator was not suitable for mass production, but the appearance of decorated ceramic body was welcomed, probably to match the table setting of relatively rich homes.



Figure 8: 'The Lafayette Pattern' Urn Set
(electric. Landers, Frary & Clark, c.1928)



Figure 9: Universal's 'China
Floral Design'(c.1935)

4.2. Geometric Style

The design of electric percolator changed in the middle of the 1930s. It started to separate from both classic and eclectic styles, and models of geometric style, such as cylinder (Fig. 10) or sphere, appeared. This change can be related to the emerging profession of industrial designers, who knew the idea of 'functional' modern design (Greb, 1957). In the competitive market in the 1930s, the formal vocabulary of the modern design was adopted intentionally. An advertisement for Sunbeam's 'Coffeemaster' in the 1930s (Fig. 11) carries the catch phrase of 'America's Most Beautiful Coffee Maker'. The appearance itself was the major selling point of this model. In the middle of the 30s, some of other brands also adopted the cylinder style. The spout was put close to the top of the body, to prevent their shapes from interfering with the dominance of the basic

cylinder. Their choice of the spout form seems not to be functional, but to be formal.



Figure 10: Westinghouse, 1936
(from Greb, 1957)



Figure 11: A part of an advertisement for ‘Coffeemaster’ (Sunbeam, 1930s)

4.3. Streamlined Style

During the 1950s, the style of electric percolators converged into a somewhat streamlined shape (Fig. 12, 13), rather than a pure geometric shape. It is not so geometric, but soft tapering shape, combined with a little classic curve. The spout is located closer to the base, as conventional percolators. The visual impact of the pure geometric shape was weakened, probably to have more a homey appearance. This tendency of body design is observed in other small domestic appliances during this period. In a sense, electric percolators became one item of a set of domestic appliances that were so advertised and designed that all American middle class families ‘had’ to own them. In 1956, percolators, electric and non-electric, accounted for 64% of all household brewing (Pendergrast, op.cit.)

Most of these models had chrome-plate finish, even gold-plate finish for the gift market (Fig. 12), to appear ‘deluxe’. In the age of ‘populuxe’ (the term was coined by T. Hine), this design became the norm in American home. While manufacturers claimed numerous technical improvements, like flavor selection, rapid brewing, bi-metallic thermostat operation and so on, the design had never changed greatly through the decline of the percolation method.



Figure12: ‘Crown Jewel Coffeemaker’
(Cory Co., 1954)



Figure13: An advertisement for ‘Coffeematic’
(Universal, c.1950)

5.0. Conclusion

Coffee consumption in the U.S. peaked around 1950 and started to decline. Instant coffee was introduced from the 1940s and spread widely after WWII, but never superseded regular coffee. Sales of coffee-making devices still kept growing until the 1970s. In many homes, percolators were often used just for heating water for instant coffee. The decline of coffee consumption from the 1950s onward is believed to be due to the growth of soft drinks and other beverages among the younger generation. Heavy consumption of coffee after the 1960s was limited to the elder generation until the recent boom of coffee bars and specialty coffee from the 1980s. Today, the electric percolator and electric siphon are not used widely, and are considered nostalgic and 'homey'. It is still remembered as once a symbol of home life.

By a simple device, like a cloth bag with a wire handle, we can brew a good cup of coffee. The development and the spread of coffee-making devices in the United States was due to the high demand for laborsaving, even for such a trivial labor, and the high appeal for the appearance and the imagery, either on the dining table or in the kitchen. The electric percolator, and the electric siphon influenced by the percolator, had been thought to be a symbolic object centered in desirable home life. The most suitable appearance and the imagery for popular admiration had been sought in designs in each period. The development process of these devices was unique to the United States and one of the key factors to form the American taste for coffee and the way of coffee-drinking to today.

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