

Sewing for Life: The Development of Sewing Machine in the Tune of Women Life Experience in Taiwan

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Abstract. This study attempts to explore the female life history embedded in the sewing machines. This study examines the experience of women in Taiwan of different periods to use sewing machines through the historical studies and qualitative research, which can be used as historical supplement of women users and relevant products that have long been neglected in design, but also reflect numerous mysteries in modern design through their experience.

Keywords: Sewing machine · Science · Technology and society (STS) · Design history · Feminism

1 Introduction

The chain-stitch single-thread sewing machine manufactured by Thomas Saint in 1790 was generally considered to be the earliest sewing machine prototype (Lewton 1930), but this machine was not put into mass production. Subsequently, other investors such as Barthelemy Thimonnier, Walter Hunt, Elias Howe, Allen B. Wilson, Isaac Merrit Singer and James EA Gibbs gradually improved the lockstitching ways, driving devices and appearance of the sewing machines, and mass produced such machines as merchandises. However, the early sewing machines were expensive, so only the tailor-made tailoring shops and clothing factories would buy them, while the housewives still insisted on handstitching.

In the mid-19th century, manufacturers in the Western society began to innovate sewing machines, and promoted the machines to ordinary families, so the sewing machines were promoted earlier than washing machines and television sets. Singer Corporation started to sell sewing machines to housewives in installments in 1856 for the first time in the United State where tons of sewing machine manufacturers competed fiercely. In order to remove the stereotype of the general public that women were not good at operating machines, the manufacturers specially arranged skilled women to demonstrate the ways to use the machines in the display window (Fig. 1). Besides, in order to distinguish the sew machines from the production equipment used in the workplace, merchants began to add fine engravings and decorations to the surface of the machines, which eliminated the link between sewing machines and labor



Fig. 1. A woman operating the sewing machine (Source: <http://quilting.about.com/od/vintagesewingmachines/ig/Sewing-in-Women-s-History/Sewing-on-Singer-Machine-1860.htm>)

oppression and successfully promoted household sewing machines in the U.S. market (Forty 1986).

Singer Corporation originally adopted the same technique to market sewing machines all over the world, and promoted that this technology was suitable for women through the patterns showing women worldwide operated the sewing machines. The early trademark of Singer's sewing machines is presented in Fig. 2. Behind the bright red letter 'S' was a lady operating a sewing machine, which clearly indicated the relationship between the sewing machine and women and meant that this product was given a specific gender implication. Nonetheless, this conflicted with the phenomenon where most of the tailors were men in China back then. For the ordinary people, it surprised them to learn from women about how to operate a machine, which forced Singer to withdraw from the Chinese market (Yuan 2009). In the India's sales experience, since the local traditional women's clothing hardly needed sewing, the initial consumer market targeted at the colonial British women. It was not until the modern fashion were introduced into India that people started to wear suits and the sewing machines were gradually used (Arnold 2013).



Fig. 2. The trademark of Singer's sewing machine in the 19th century. (Color figure online) (Source: <https://sites.google.com/site/singerhomesewingmachine/>)

Until 1914, sewing machines had always been the first durable goods for mass production and consumption and were widely distributed around the world (Godley 2001). Even if manufacturers did not deliberately promote the sale of Western-style clothing by selling sewing machines, suits and dresses still swept the world with modern symbols (Ferguson 2011). At the beginning of the 20th century, affected by the Japanese colonial government's promotion of modernization and Westernization, Taiwan elites increased their needs for suits in order to change the Qing Dynasty styles, and the use of sewing machines and teaching of foreign tailoring started to be introduced (Chen 2009). Yet, most of the sewing machines were imported at that time, and the majority of people could not afford them. It was until the Recovery of Taiwan, the sewing machines began gaining popularity.

Sewing has long been considered as domestic labour and has often been the most experience in women's life history. Sewing machines were included in the life history of women in Taiwan, coupled with family modernization. Most of sewing-related technology and cultural transmission were classified as women's fields. Therefore, along with the gender stereotype, the sewing machine was given a particular social significance. For example, the sewing machines used to be one of the essential items for women's dowry in Taiwan. Additionally, the sewing machine also found its way into household thanks to the national policy of advancing economic development.

In the 1960s and 1970s, the garment industry in Taiwan saw a rapid growth, with many rural girls joining the read-to-wear production lines. By the 1980s, read-to-wear clothing had been very popular in the domestic market and the sewing clothes were no longer necessary housework. Moreover, in 1987, the garment industry gradually declined (Cheng 2010). Also, the read-to-wear sub-contract manufacturing was no longer a common family economic production activity, so the sewing machine had lost its status of essential household supplies. In the 1990s, in response to the changes in consumer trends, the sewing machine manufacturers integrated the sewing peripheral products and talent teaching, and introduced the leisure use modes from Japan, Europe and the United States, reinvigorating the domestic sewing machine market (Economic Daily News 1994). As a result, the sewing machine was given a specific cultural significance with the role of women in society. The sewing machine was originally created as a utensil to emancipate women from heavy manual sewing, but the experience of women in Taiwan in using the sewing machine unfolded a history that they were given different social roles in different stages by the country and based on specific goals. If the evolution of products originates from people's material desire and imagination, will such imagination lead them to foster new progressive values in the changing times? In fact, the existing social structure is not challenged, but are the patriarchal system's expectations and imprisonment of gender role repeatedly reproduced? Moreover, what is the role of designers in the historical process of role evolution in struggles of different ideologies?

In view of these, this study reviewed the form evolution of sewing machines in different periods and the meaning of sewing machines in Taiwan women's life history. Apart from using as the historical supplement to the female users and their related products that are long been ignored in the design history, this study also reflected on a host of mysteries in the contemporary design through their experience in using the sewing machines.

2 Design History Filled with Gender Mysteries

Feminist design historians have noted that the existing writing of design history was suppressed by the patriarchal society and intentionally or unintentionally ruled out the contribution of women or considered their activities unimportant. The design historian Attfield (1990) thought that in terms of the problems studied by the mainstream design history, for one thing, one is the methodological paranoia — The recording and selection generally focused on men, while women were the observed objects only. For another, this gender stereotype was derived from the concept of rigid binary oppositions, resulting in every confidence in the structure that “male-culture-exchange value” was superior to “female-nature-use value”.

The design historian Buckley (1986) pointed out by dismantling the framework of patriarchy and capitalism that the traditional design history was often accompanied by the viewpoints of Western white male elites and concentrated on science and technology, industrial mass production and modernist aesthetics and activities. By contrast, hand-made products, handicrafts or decorations were classified as pre-modern activities and were belittled. The craft was thereby expelled from the design history, and women engaging the craft design were concealed in the design history. Besides, when women were educated, they were often thought to be more suitable for development in the latter field, so they were rejected from the industrial system, leading them to be constant in a non-mainstream position, which is the representation of social ideology suggested by Goodall (1990). Since women could not enter in the corridors of power, it was difficult for them to address the unequal treatment in the design activities. Consequently, the seemingly objective and neutral design history is in fact rooted in the society’s established stereotypes and rationalizes people’s behavior. These deep-rooted constraints also affect the design studies on which topics are worth exploring and how they are conducted.

Aside from the asymmetry of research methods and objects, Julier, the scholar of design culture studies also pointed out the limitations of design (2013). In order to effectively mark the design as a kind of lifework, most of the design history writings adopt the linear history theory established by Nikolaus Pevsner, the founding father of design history, and coupled with particular products and changes in styles, create the so-called “canon of design” in order to justify the professional form of design. When the modernist aesthetic paradigm demonstrates its orthodox status with specific items, chairs also become necessary works which today’s designers use to be remembered. Compared with other products, chairs were more easily referred to as “design classics”, so design history was also often regarded as the history of a series of lofty chairs (Sudjic 2009). Those that are closely related to daily life such as sewing machines were rarely found in the writings of design history. Besides, the periodic international furniture exhibitions, as well as labels of star designers also drove such design discussions to stagnation. Also, objects were packaged as empty symbols to meet the specific values, separated from the real society and hence lost wild vitality (Attfield 2000).

The above-mentioned discussions not only point out the unconscious “sex blindness” of the design history and give rise to increasingly restricted subject matters of writing, but also expose the research dilemma from the female point of view: First, due to

the disregard of mainstream studies, the activities concerning women are less documented. Second, since material culture, physical experience or other information is less adopted, women's unique culture and experience are often marginalized. Buckley (1998) used oral history and family albums to review the history of women's clothing in this family and found that women were able to redefine themselves and build self-identity through designing clothes. Unlike the official government records or statistics, video and audio data offer dynamic information, not only allow us to have a new understanding of women's experience, but to reflect on and probe into the existing research.

The design scholar Whiteley (1993) published *Design for society* and sorted out relevant theories and movements criticizing consumerism. Among them, the feminist point of view revealed the problem of consumption dominance: Besides conveying the meaning of products by constantly objectifying women, the presence of female users was long neglected. Such male-centered design consciousness often lacked the female unique socialization knowledge system, so that design was considered as a means of consumerism and the social need was undervalued.

Design theory re-established a link with the society through exchanges with different ideas. Some design historians also attempted to get rid of the discussions that specific works and designers' individual will were centered on by mainstream design historian, which could rather be the elements of change of time (Forty 1986). No more do they create legends by dazzling design under the spotlight, but placing the design in daily life and thus see the magnificent era of waves. This not only removes the limitations of research into the previous design history, and also enables the marginalized issues to be noted.

In respect of sewing machines, there are newly arising issues: the major sewing technology innovations are not made in Taiwan, but what is the significance of such a technological object when used in Taiwan society after the manufacturers' technology transfer and agent selling? How did this modern technology developed in the advanced industrial countries enter Taiwan? Sewing machines, as a production tool, are used in paid work, unpaid domestic work, and even self-creation, but are placed in home which is not regarded as a "production site". How does it find its way into home? How do the sewing machines interact and connect with Taiwan women's life experience? Moreover, how are the gender consciousness hidden behind the scientific and technical materials connected to the special historical context of Taiwan society?

3 Sewing Machines Embedded in Local Context

3.1 Sewing Machines as a Mechanism for Transformation of Traditional Women's Virtues into Modern Values

By inspecting the historical accounts of traditional Chinese culture, all handicrafts such as sewing, embroidery, weaving, spinning and knitting were included in needlework (Chang 1998). Needlework not only reflected the gender labor under the social division of labor that "men do farm work and women weave", but can be used as a standard for women's virtues. According to the four virtues specified in the *Lessons for Women*, apart from expecting women to speak and act cautiously and to maintain their

appearance, needlework was even used to judge the women's talent and morality and the housekeeping ability (Mann 1997).

The education for women during the Japanese Occupation Period also exerted a significant influence. Under the influence of Westernization, the Japanese colonial government realized the importance of education to the prosperity of a country, and women's education was fundamental to promoting education. Therefore, through a series of courses about becoming a good wife and loving mother, women were trained to play the roles of assisting their husband, doing housework and educating young children. In 1897, the Japanese government opened the Women's Faculty Affiliated to the Mandarin Language School for Taiwanese women between the ages of 8 and 30. The tailoring courses were run for women only (Fig. 3) and helped them to gain a place among the tailoring masters dominated by men. This measure was closely related to the fact that more women than men engaged in foreign tailoring in Taiwan afterwards and that women would learn tailoring in the tailor masters' or tutoring classes before marriage (Chen 2009).



Fig. 3. Tailoring classes at Daitotei Women's School (Source: Special exhibition entitled her history in Taiwan)

3.2 Logistics Women Soldiers for Anti-communism and Restoration

At the beginning of Recovery, in order to meet the overall strategic objectives of the country — counterattack on mainland China and recovery of lost territory, women were mobilized as wartime reserves. Women's federations were set up across the country and encouraged women to make use of their skills and make their due contribution, such as sewing military uniforms, laundry, relief, writing letters, consoling soldiers and their families in order to boost morale and achieve the overall objectives of anti-communism and resistance against Russia (United Daily News 1952a).

Besides, in order to help settle down the military dependents who came to Taiwan with the Koumintang Government and lacked the means to earn a living and related equipment, shelters nationwide gradually run sewing workshops and establish sewing factories (Fig. 4). The military dependents could sew military uniforms and get enough food in the shelters, and could receive ideological education at work (United Daily News 1952b). In addition, in order to improve the economic levels of people in Taiwan, local governments and farmers' associations also gradually granted loans



Fig. 4. Madame Chiang visited the sewing factory for military dependents (Source: <http://www.igotmail.com.tw/home/33935>)

for purchasing sewing machines and encouraged farmers to engage in family side job (United Daily News 1953). Besides, the shelters took in unfortunate adopted daughters or prostitutes and taught them sewing techniques so that they could be self-sufficient, or prepare them for a normal marriage (United Daily News 1955). Promoting women's operation of sewing machines, apart from increasing personal or household income, could also enhance the overall national recovery strength. Due to the active guidance of the Koumintang Government, the effects of promoting sewing to women were remarkable.

3.3 Invisible Driver of Economic Boom — Women in Garment Factories

The 1960s and 1970s witnessed booming development of Taiwan's garment industry, and many rural girls left farm work behind and worked in factories and engaged in the sewing garment industry (Fig. 5). This boom could be observed from the recruitment notices in the news-paper and numerous sewing work-shops (Cheng 2010). Women passively or actively threw themselves into the production lines. In addition to earning more money compared with working in rural areas, this also reflected that women at that time started to have opportunities to walk away from family and into the workplace used to be regarded as "men's exclusive domain".



Fig. 5. Early garment factory in Taiwan (Source: http://favorlang.blogspot.tw/2012/08/blog-post_246.html)

In addition, the government pulled out all the stops to mobilize housewives who could not work outside and included their surplus labor into national economy. In 1972, Tung-min Hsieh, chairman of Taiwan Province, put forward the slogan that “living room as factory”, established “family production” and appealed to housewives to make full use of idle time at home to engage in family side job in a bid to boost family income and national productivity. Sewing garments with sewing machines was often one of the options for home sub-contract manufacturing. (Economic Daily News 1972; Central News Agency 1972)

In 1975, Chairman Hsieh was against the custom of extravagant weddings and proposed a new dowry idea of “one machine and two boxes”. The so-called “one machine” referred to the sewing machine (United Daily News 1975), which demonstrated the significance of economic production tool. This also means that the sewing technology of women in this period was linked to the global labor market from unpaid domestic work. Even if women gained the opportunity to be economically independent due to sewing, they became the cheap labor required by the provision of transnational capital for the purpose of national economic development without any policy protection.

Quality yet inexpensive products of the domestic read-to-wear clothing was favored by the global market and the export peaked in 1987. Subsequently, since 1985, the NT exchange rate continued to increase, producing an adverse impact on export. Because of wage increases and labor fluctuations, coupled with sluggish read-to-wear market in America in 1988, the garment industry in Taiwan gradually declined. The labor which had long depended on the traditional industries started to separate itself from the manufacturing sector, and then flew to the service industry or financial investment. The garment industry became the victim of this wave of industrial transformation. The sharp decrease in Read-to-wear sub-contract manufacturing orders also changed the usage pattern of the home sewing machines.

3.4 From Labor to Leisure

Now, sewing machines are no longer the first choice when daughters get married, and most housewives no longer need to earn extra money with the sewing machines. Instead, women can step out of the house and devote themselves to various workplaces. In the end of the 1980s, thanks to the improvements in the overall domestic economic level, the sewing machines started to be included in the recreational tools “do-it-yourself” (DIY). Such transition could be seen from the 1986 “First DIY Exhibition of the Republic of China” (Economic Daily News 1986). The sewing machine manufacturers allowed consumers to learn and use the machines through product distribution stores, materials, tools, reference books and courses and other services. In this way, the consumers did not need to travel to shops, cloth stores and classrooms, thereby enhancing the interest in learning (Economic Daily News 1994). The sewing skills which were bound to lose reemerged in leisure activities. However, when the sewing changed from the basic needs of daily life to creative or leisure activities, women were often troubled by assuming family responsibility and pursuing personal interest. They needed to live up to the expectations of family members but also

fought with such expectations. Moreover, this scene was 20 years later than the scene first described by manufacturers' advertising.

Singer Corporation in Taiwan once used American-style promotion techniques of offering teaching in case of a sewing machine in the 1970s magazine advertising (Fig. 6). Nonetheless, in contrast to the real situations in which women used sewing machines at the time, most women sew other people's clothes, read-to-wear sub-contract manufacturing, at home (Fig. 7). Even the real models used by them were not the household sewing machines produced by Taiwan sewing machine manufacturers, but were a kind of industrial sewing machines called lockstitch machines. The development of Taiwan's sewing machine industry breaks away from people's daily life experience precisely reveals the invisible beauty and sorrow behind the reputation of Taiwan as the king of sewing machines.



Fig. 6. Singer sewing machine advertisement (Source: *The Woman*, November 1971)



Fig. 7. “Living room as factory” — Read-to-wear processing at home (Source: *Century-old life in Taiwan*)

4 Conclusion and Suggestion

4.1 Constantly Changing Social Significance of Sewing Machines in Use

In the early days, sewing machines were used as Taiwan's post-war strategic products and found their way into family, which mainly resulted from the living needs and the

national mobilization policy at that time. The mutually beneficial relationship between the users and the industry was established thereby. Such a relationship worsened in the 1960s when the policy was shifted to be export-oriented. With the foreign technical guidance, the household sewing machines expected the users to have such product appeals as advanced countries' lifestyles, lightweight, convenient storage and multi-functional. This differed from the expectations of the ordinary sub-contract manufacturing users in Taiwan at that time. Therefore, the single-function, fast and durable industrial sewing machines entered into families.

With the transformation of economic structure and improvement in national living standards, no longer are sewing activities women's necessary daily tasks, and they do not need to diligently pedal the sew machines in order to support the family. Yet, women's sewing is often considered to pass the time, and is not an artistic leisure activity.

Since the domestic market demand is not heavy, there is a gap between production and consumption. In order to expand business, manufacturers drew on the sales experience of Japan, Europe and the United States and changed the sew machines from production tools to leisure facilities so that the demand for household sewing machines increased in the local market. Even so, the sales of sewing machines in the domestic market rebounded slightly, but the domestic need cannot exceed 5%, as shown in Table 1.

Table 1. Characteristics of Taiwan female users and sewing machines in different times

Time	1930s to 1950s	1960s to 1980s	1990s to present
Women's employment types	Agriculture, forestry, fishery and husbandry	Manufacturing	Services
User characteristics	Basic skills of women	Home sub-contract manufacturing mothers	Leisure hobby creators
Work contents	Make clothes for friends and family, earn extra money and sew military uniforms	Read-to-wear sub-contract manufacturing, or manufacturing of other processed products such as: backpacks and dolls	Personal leisure creation
Work demands	Meet the basic needs of life	Able to cope with large orders for delivery, durable and fast products	Select sewing machines based on personal needs
Common tool types	Foot-type household sewing machines	Industrial sewing machines: Lockstitch machines, overlock machines and embroidery machines	Electric, electronic or computer-type household sewing machines and industrial sewing machines
Tools are regarded as	Daily necessities	Production tools	Creative tools

4.2 Invisible Labor/Value

Household sewing machines started to have a specific form in the 1860s in order to distinguish from the equipment used by workers and integrate into home decorations. In this regard, Forty (1986) believed that after the industrial revolution, work was gradually separated from family activities to factories and that home was simply for rest. This way of change separated production and males to the workplace, while the homeplace became the place for women's consumption and providing reproduction. Techniques associated with women like cooking, knitting, embroidery or sewing are generally regarded as the gifts that naturally came to women or the products of family duties but without value.

Wajcman (1996) criticized the patriarchy-dominated science and technology opinions, and held that the knowledge associated with science and technology was still mastered by men. Even if women worked in the workplaces which were initially monopolized by men, they were still assigned to the most basic, labor-based jobs. The study of Collins (2002) further revealed that the value system associated with technology was actually declared with the society's evaluation of gender. In other words, there was gender difference in the standards of capitalist market economy for labor value.

This sewing production line in Taiwan also extends from factories to families, and includes housewives. When the country strove to mobilize surplus labor to pursue economic growth, families became invisible factories in the informal economy and women in the family became the engaged but invisible labor.

The female labor in the family is certainly does not have 'the exchange value' in the capitalist operation but is given social functions. When implementing the policy that "living room as factory", Tung-min Hsieh further explained that encouraging women to engage in home sub-contract manufacturing was not designed to earn money but to develop their hard-working habits. Apart from calling on women in the family to become workers, this strategy also conveyed the instruction that "business is virtuous but idleness is evil" in order to hone housewives' ability to manage the household industriously and thriftily. The government mobilized housewives to engage in economic production activities, and also advocated mothers to maintain social and family virtues.

4.3 Recommendations for Follow-up Study — Study on Local User Experience of Sewing Machines

This study not only shows the influence of sewing machines on the social role shift of women in Taiwan, but also demonstrates there is still gender inequality in the topics of science and technology. The development process as a backward industrial country and the fixed sub-contract manufacturing role of domestic household sewing machine industry cause the needs of local users not to be the main reference subjects of industrial design. This suggests that women in backward industrialized countries are still at a disadvantage in the topics of capitalism and science and technology.

Sewing machines, as a pioneer of family modernization, also profoundly changed the world's clothing habits, besides changing the contents of female housework. When women generally no longer have to make clothes, sewing techniques are no longer passed down as in the old days. The knowledge system associated with sewing activities is gradually collapsing. This activity internalized as physical practice may eventually be “deskilled”. When people enjoy the convenience of scientific and technological progress, they, nevertheless, also forgot their own cultural characteristics and values. The scientific and technological development without integrating the local use experience will render the originally diverse and creative activities homogeneous, unified and lifeless.

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