

THE GENDERED MOTORBIKES HOW DOES HISTORY MAKE MOTORCYCLE/SCOOTER MASCULINE/FEMININE?

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ABSTRACT

Most promoters of 'emotional design' emphasize that design should surpass the usability of products. However, the product experience is complex. Krippendorff claims that: 'the question of how and which emotions are invoked while using artifacts naturally follows the question of what artifacts could mean.' Besides personal psychological attributes, the social and historical effect could operate in a reflective level and be hard to find. So, the studies about cultural or symbolic meanings of products, such as gender, are limited. Gender seems ambiguous or uncertain in the sets of positivist research. Consequently, an alternative approach seems necessary.

This research explores gender issues of the transition of motorcycle in Taiwan around the period of World War II, exploring how meanings are embedded in objects through history. By analyzing the design of motorcycles/scooters through time, the implications of gender to everyday life are further examined, the meanings attached to products and related emotional processes incorporated. Emotion research is helpful in understanding the invisible psychological structure behind product design, and bringing gender consciousness into this area helps to fill in the gap that has long been ignored, which is of great potential to future studies.

Keywords: emotional design, gender, motorcycle/scooter, semiology, design history.

1. INTRODUCTION

1.1. Roland Barthes: The interpretation of objects

French semiotician Roland Barthes once conducted a series of semiotics on 'the new Citroën' to explore how humans and vehicles establish imagined relationships and generate titillation through physical experiences such as touching and driving.

'The Déesse is obviously the exaltation of glass, and pressed metal is only support for it... the hard thinness of a substance more entomological than mineral... as if one was proceeding from the

category of propulsion to that of spontaneous motion, from that of the engine to that of the organism' (Barthes, 1972: 89).

'There are in the D.S. the beginnings of a new phenomenology of assembling, as if one progressed from a world where elements are welded to a world where they are juxtaposed and hold together by sole virtue of their wondrous shape', the smoothness of its appearance is always an attribute of perfection, 'one keenly fingers the edges of the windows, one feels along the wide rubber grooves which link the back window to its metal surround' (Barthes, 1972: 88-89).

'The bodywork, the lines of union are touched, the cushions fondled; before the wheel, one pretends to drive with one's whole body. The object here is totally prostituted, appropriated: originating from the heaven of Metropolis, the Goddess is in a quarter of an hour mediatized, actualizing through this exorcism the very essence of petit-bourgeois advancement' (Barthes, 1972: 90).

'The material the construction methods of automobiles and the desire of the petit-bourgeois are intertwined into worship towards automobiles; 'cars today are almost the exact equivalent of the great Gothic cathedrals' (Barthes, 1972: 88).

Roland Barthes extends the subjects of structuralist/linguistic analysis from language/culture to everyday substance and establishes strategies to comprehend material culture. Through analysing signs, he extends the denotation of reality and reasons deeper cultural meanings of material substance: connotation and myth (Figure 1; Fiske, 1990), and this dichotomy is commonly found in his works.

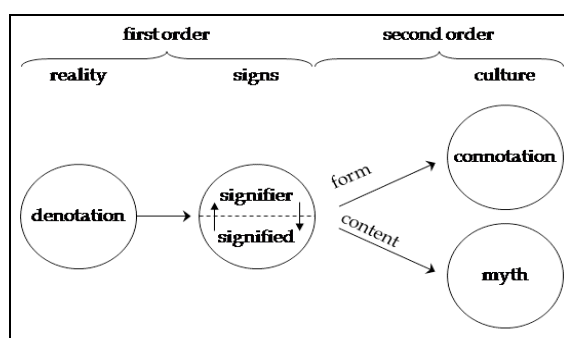


Figure 1: Barthes' two orders of signification. **Source:** Fiske (1990: 88)

In cognitive science, there are different interpretations of Barthes's literature imagination. Cognitive psychologist Norman's research on emotion studies finds that human attributes result from three different levels of the brain: visceral level, behavioral level, and reflective level. These three levels could rival each other, thus can explain why we love or/and hate everyday things at the same time. This contradictory phenomenon is demonstrated by BMW's Mini Cooper car; its dynamic attributes do not satisfy all people, but it does bring much more laughter unprecedented (Norman, 2004).

Besides Norman, most promoters of 'emotional design' emphasize that design should surpass the usability of products. For example, Jordan (2000) suggests a pleasure-based approach to replace usability-based design approaches, which becomes an alternative human factor that enables the consideration of the relationship between people and products to be much more comprehensive.

This perspective coincides with Krippendorff's viewpoint that 'design has to shift gears from shaping the appearance... to conceptualizing artifacts, material or social, that have a chance of meaning something to their users' (Krippendorff, 2005) .

Krippendorff further claims that: 'The question of how and which emotions are invoked while using artifacts naturally follows the question of what artifacts could mean.' (Krippendorff, 2005: 4) In fact, semantic differential method (SD method; Ogden, Richards, 2001), which is one of the data-collection methods and is widely applied in kansei engineering research, is derived from the measuring of meanings in linguistics studies.

Actually, when we discuss how users elicit the emotional relationship with products, some scholars emphasize products' visible or tangible elements of form, such as material, shape ,color, and so on, while others focus on users' points of view. For instance, Jordan (1999) argues that product pleasures are derived from physiological and psychological sources. The aforementioned factors roughly cover products' elements or physical/psychological factors of human beings that can apply positivist method to find quantitative evidence to identify the correspondence between two things. However, there are two more sources-related product pleasures: sociological and ideological pleasures in Jordan's theory. Few literature in design research, especially in emotional design, concerns these issues. How does emotion express objects and make them meaningful and special? (Csikszentmihalyi & Rochberg-Halton, 1981) Cupchik (1999) considers that there are three levels of meanings attached to products and related emotional processes. This article is important because of the limited studies about cultural or symbolic meanings of products, such as gender.

'Gender' factors are widely used in many articles for collecting or analyzing emotion research. Alcántara et al. (2005) take gender as one of the independent axes that forms a sound basis for evaluating shoes' perception. In Hsiao et al. (2006), gender adjective was taken as emotion factor to explain the product image. Shang et al. (2000) inferred that gender factor as one of the constituent elements of product form. Besides, there are some studies arraying gender dimension in collecting data (Hsiao, 2002; Ishihara et al., 1997). In Kang's opinion, how a user's behavior and interaction with an interface are related to their life experience, previous experience and gender (Kang, 2003). To accommodate the diverse needs of users, gender can not be neglected (Khalid, 2006). It seems that the notion gender connects to the interaction between user emotion and products has been taken for granted. Gender is seen as a strong social identity, and sometimes with an obvious effect in product preference. Based on Hirokawa's (2008) research about the taste of different tea, gendered information may inference on sensory, hedonic, and familiarity ratings.

Nevertheless, there are some surveys with contradictory results. For example: Wang and Holden (2000) find that gender is not a significant factor effecting the craftsmanship assessment. Gender seems ambiguous or uncertain in these sets of positivist research. Consequently, an alternative approach seems necessary.

Actually, gender consciousness does exist in daily-live objects and reflects in design marketing and advertisement. For example it was full of femininity in the pottery work of Susie Cooper (Buckley, 1996). But, firstly we should explore why/how people project gender consciousness onto objects, what the mechanism is, and how it operates. To deal with these problems, 'it is necessary to locate them both historically and within the sphere of consumption in which the appropriation

of goods into peoples' lives is part of the cultural process of making meanings with and through thing.'(Kirkham, 1996)

Barthes's analysis provides logical tools for analysing the reality, as well as introspecting hidden ideologies that affect our everyday lives. These kinds of observation not only enhance the delight to interpret industrial products, but also delineate the construction of gender consciousness derived from intentional manipulation, which can be found anywhere. When in reality the world is loaded with motorcycle advertisements that influence our understandings of the real world, we need to decompose and demystify these myths, which is the main purpose of this study: to analyse how motorcycles exercise their gender connotation through the processes of representation.

1.2. Who rides motorcycles/scooters? The ownership of motorcycles/scooters in Taiwan

Research on household vehicles in Taiwan shows that the main means of transportation of breadwinners is automobile that accounts for 54.65%, followed by motorcycle/scooter that accounts for 29.75%, whereas public transportation only accounts for 8.21%. As for other members of the household, the most frequently used vehicle is motorcycle/scooter that accounts for 42.72%, followed by automobile (27.48%) and public transportation (14.9%) as shown in Table 1 (廖仁哲, 1996)。As such, after average household income has increased, the ownership of automobile has also increased, yet the ownership of motorcycle has not decreased but transferred to non-breadwinners of the household.

Table 1: Means of transportation of household members

Means	Automobile	Public transportation	Motorcycle	Car pool	Other	Total
Breadwinners	54.65 %	8.21 %	29.57 %	0.66 %	6.90 %	100.00 %
Non-breadwinners	27.48 %	14.90 %	42.72 %	6.79 %	8.11 %	100.00 %

Source: 廖仁哲(1996).

Aside from the distinction between high and low income, do there exist gender differences on choices of the means of transport vehicles? According to research on gender and choices of transport vehicles¹, it is claimed that males have higher rates of both automobile and motorcycle ownerships (shown in Table 2), and the difference of male and female automobile ownership is larger than that of motorcycle ownership (林佐鼎1984, 張淳智1987).

Table 2: Gendered choices of transport vehicles

	Male		Female	
	林佐鼎(1984)	張淳智(1987)	林佐鼎(1984)	張淳智(1987)
Bus	31.8%	21.5%	68.2%	79.5%
Automobile	84.7%	88.1%	15.3%	11.9%
Motorcycle	79.8%	70.1%	20.2%	29.9%
Bicycle	63.2%	48.9%	36.8%	51.5%
Taxi	63.6%		36.4%	

Source: 林佐鼎(1984), 張淳智(1987).

If we look at the growth of the ownership of different vehicles, statistics show that males have higher percentages of ownership of both automobile and motorcycle between 1997 and 2005: in 1998 male automobile drivers were 4.15 times more than female drivers, and in 1997 male motorcycle drivers were 1.66 times more than female drivers. However, within the same period of time, this gender difference was decreasing, and female ownerships of both the two vehicles were increasing: in 2006 male automobile drivers fell to 2.35 times of female drivers, and in 2005 male motorcycle drivers were 1.41 times of female drivers. Generally speaking, the difference of male and female motorcycle ownership is smaller than that of automobile.

Table 3: Percentages of male and female automobile drivers

	Male	Female	Ratio (male/female)
1998	80.6%	19.4%	4.15
2000	75.8%	24.2%	3.13
2002	74.1%	25.9%	2.86
2004	71.7%	28.3%	2.53
2006	70.1%	29.9%	2.34

Source: Taiwan Ministry of Transportation and Communications

Note: Data gathered every two years

Table 4: Percentages of male and female motorcycle drivers

	Male	Female	Ratio (male/female)
1997	62.4%	37.6%	1.66
1999	59.4%	40.6%	1.46
2001	57.8%	42.2%	1.37
2003	55.7%	44.3%	1.26
2005	58.5%	41.5%	1.41

Source: Taiwan Ministry of Transportation and Communications

Summarising the usage of automobiles and motorcycles, generally speaking, male users outnumber female users, but female motorcycle users are increasing rapidly, and the difference between the percentage of male and female motorcycle ownership has been diminishing. As such, we need to further analyse why the percentage of female motorcycle users has been increasing.

2. THE GENDER CONNOTATION OF MOTORCYCLE

The first motorcycle in the world was made by Nicholas Cugnot from France, using steam engine. In 1883 a German engineer Gottlieb Daimler fixed a petroleum engine on a bicycle, then Karl Benz added to it an ignition plug to ignite the fuel. This history shows the technology and invention of motorcycle all started with bicycle (林淑真, 1998).

This history of the technology development of bicycle and motorcycle also records how women use vehicles. In the West, in the beginning the users of bicycles were dominantly males; and when women started to try this new technology that 'opens a happy new field for men', it aroused great debates. At that time the reason to oppose women riding bicycle was based on the concern that women were losing their female characters: 'Half of men's interests on women are based on the urge to protect fragile females, and when a lady rides a bicycle this interest collapses right away'; those who oppose women's mobility even thought that the freedom derived from riding will seduce women to be addicted and will result in the corruption of morality (Willard, 2000). In 1884, the design of open frame bicycles (shown in Figure 2) entered the market with existing gender dichotomy (Oddy, 1996), which was when women started to ride bicycles. The skills to ride bicycles help women to gain access to motorcycles.

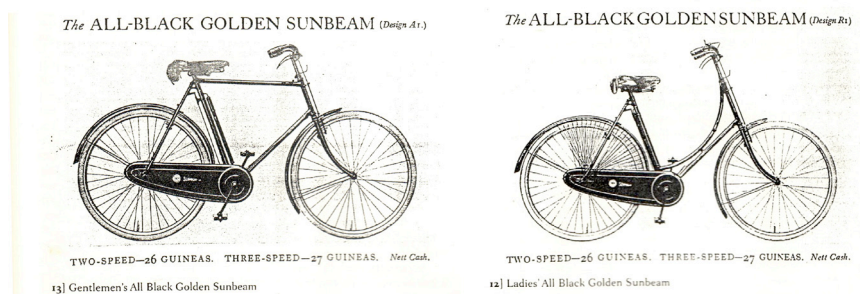


Figure 2: The design of open frame bicycles

Source: Oddy 1996, pp. 64-65

In fact, in 1920 there were smaller motorcycles that were designed for women, which was 'scooter'. After the Second World War, the company Piaggio re-designed the prototype, and in 1946 manufactured a new type of motorcycle called 'Vespa motor scooter' to consume over-produced engines. The original idea came from a helicopter designer Corradino D'Ascanio, who used the prototype of scooter in the 1920s and combined with it the principle of flight vehicle design, using streamlined metal cover engine to form its minimumistic appearance. Scooters were lighter and cheaper than motorcycles, and it gradually replaced bicycle that were mainly used by pre-war workers (Sparke, 1988).

The success of scooter threatened the British motorcycle industry. Although scooter did not intend to target female users, still its gender characters created a dichotomized image: motorcycle

represents male, practical, and aggressive that are categorized as masculine, and scooter refers to women and children and represents feminine characters.

During the 1950s and the 1960s, when scooter threatened the British motorcycle industry, scooter was interpreted as 'alien intrusion' that threatened masculine culture on the road, which was also treated as the feminisation of the public space (Hebdige, 1988). Yet even though this gender stereotype was imposed upon scooter, there was still a group of male fashion frenetics who thought scooters could help them show their taste.

In 1958 Honda Cub C100 was launched (shown in Figure 3). This design moved the fuel tank under the seat and lowered the frame of the vehicle, so that women in skirts could also drive it. And also, this model was automatic and did not include a clutch, so that drivers could use only one hand to drive the vehicle. This set of new design lowered the barrier for driving skills, so both males and females could easily drive the vehicle. Cub is a multi-purpose vehicle that covers professional usage through to a vehicle for women, which had an influence to social structure and living style (武井浩介, 2002). Cub breaks the limitation on motorcycle drivers' clothing; and with one hand free, motorcycles can be even more multi-purpose. As such, both males and females can use it for different purposes.

However, there is another story about the war between motorcycle and scooter in Taiwan.



Figure 3: Honda Cub C100 motorcycle

3. TAIWAN: NATION OF MOTORCYCLE

During the period of late World War II, in 1946 there were only 236 motorcycles in Taiwan. After that period, the growth of motorcycle ownership has been increasing dramatically. It kept increasing after the late 1960s, which reached its peak during the 1970s. It slightly slowed down in the 1980s, although the annual growth rate still kept around 8%. In 1990, registered motorcycles in Taiwan totaled 8,460,138; every one thousand people owned 415.67 motorcycles. During the same period, only Japan, the US, and Thailand also had similar growth rates; other countries such as France, Italy, the Netherlands, Poland, Spain, Britain, Austria, Argentina, Belgium, Switzerland, Indonesia, India, and Malaysia did not have dramatic growth (王志弘, 1998; 張育豪, 2006). In the 1990s the growth rate of motorcycle ownership slowed down, and in 1995 the number of motorcycles in Taiwan was 8,500,000, which was only second to Japan in the world (陳文生, 1996). In 2005, the number of motorcycles in Taiwan reached 13,190,000 (MOTC, 2006), which means almost everyone had experiences of driving motorcycles.

In the past the Ministry of Transportation and Communications did not officially define the rules on motorcycle driving, for they regarded motorcycle as a transitional vehicle and would be phased out after the increase of GDP and automobile ownership. However, when the planning and building of roadways and public transportation were still on the way, motorcycle became the main vehicle for the general public because of its availability and convenience, and for this reason it was dubbed 'the informal sector of urban transportation', which filled in the gap between transport policies and public investment (楊子葆, 1989). This is the reason why motorcycle did not become a transitional vehicle as expected by the government but kept a similar growth rate with automobile (張育豪, 2006).

In Taiwan, motorcycles are also called 'auto bikes'. It was imported to Taiwan immediately after Japan colonized Taiwan, although it was not popular due to the rising fuel price. The period between 1953 and 1963 saw the emergence of 'auto bike', which was basically a bicycle with an engine (唐富藏, 1993): adding a fuel tank on the frame and an engine on the treadle, as shown in Figure 4.



Figure 4: The prototype of motorcycle: motor bike

In 1972 a Taiwanese company PGO cooperated with the Italian company Vespa-Piaggio and manufactured scooters. At the same time, Japan imported Scooter from Italy and covered the metal frame with plastic skin, which was named 'Scooter', and as a result Honda and Yamaha had arguments over the patent. Afterwards, 'Scooter' entered into technological cooperation with Taiwanese companies.

After the second World War, motorcycles in Taiwan were all imported from abroad; because imported goods are purchased with foreign exchange reserves, they were treated as luxury items and were levied a luxury tax, therefore the main users at that time were from the upper class. Since at that time motorcycles were rare, it signified social statues i.e. 'conspicuous consumption' defined by Veblen (Veblen, 1969). From the 1960s, due to the needs for economic development, the Taiwanese government started to encourage investments in the motorcycle industry. After motorcycle/scooter was mass-produced in Taiwan, it became the main transport vehicle for the lower class (唐富藏, 1993).

The popularity of motorcycle plays an important role in our everyday lives. Because of the diversity of motorcycle users, a range of different subcultures were generated, such as street racing. These subcultures derived from motorcycle-driving consist a set of different myths; and in addition to life styles, gender also constitutes a main issue of the social connotation of motorcycles.

4. MEN AND WOMEN IN MOTION: GENDER STEREOTYPES OF THE MOTORCYCLE MARKET

From the 1960s, Taiwanese companies started to manufacture and sell motorcycles. To increase their market share, companies imported different types of motorcycles and began to advertise this product. These advertisements not only show those companies' market orientations, but also reflect people's imagination on this technology and stereotypes imposed upon users.

In 1974, Sanyang Industry Co., Ltd. launched its first Wolf series. On its poster shown in Figure 5, the male driver is hugged by a female with happy, satisfactory facial expression. In women's eyes, motorcycles are: 'its elegant appearance, it's perky presence, its Steelite heart, all made me love it deeply. Oh Wolf, so lovely! Lovely him, lovely Wolf, lovely life!' And for men: 'she loves it so dearly: Wolf. I will drive it, bring her to the mountain, beach, to see the sunrise and the moon. Oh! Lovely her, lovely Wolf, lovely life!' Under this context, motorcycle is anthropomorphized as 'wolf' (it); and since 'she' loves 'it', therefore 'he' drives 'it'. Women are not seen as drivers of motorcycles, and they do not need the mobility to use technology, whereas men need to have the ability to drive this vehicle, carrying women and show masculinity due to women's aspire after motorcycle. Through motorcycle, gender and social relations are defined, and the gender connotation implies: women do not need to drive a motorcycle by themselves, they only need to rely on men to travel around and gain their mobility, whereas men need to drive a motorcycle in order to protect and carry women.

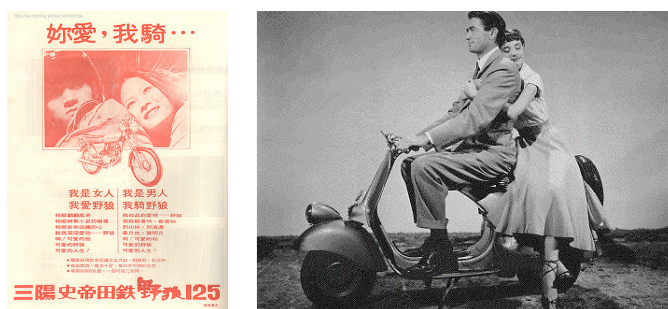


Figure 5: Men as driver and women as passenger

Source: Chinese Taipei Film Archive

It was not until 1958 when Honda Cub C100 was launched that women started to become users of motorcycles and be in control of their mobility. As such, since motorcycle has been dominating the motorcycle/scooter market, does that mean engineers and designers who are dominantly male have sex blindness and exclude the possibility that women can be drivers? In 1977, Sanyang Industry's advertisement used a female model wearing bikini (shown in Figure 6), which implied a metaphor that the female body represented the motorcycle; through the gaze of men, women were objectified as the target of men's desire.

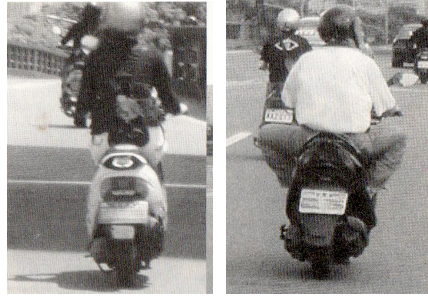


Figure 8: ‘) ’ shaped women and ‘ < ’ shaped men

Source: Bih, 2004

5. CONCLUSION – THE SOCIAL SHAPING OF OBJECTS IN HISTORY

The product experience is complex and hard to find the reasons behind it. Besides personal psychological attributes, the social and historical effects could operate in a reflective level. Emotion study opens a brand new discipline of design research, which is helpful for us to understand the invisible mental structure, assisting designers to bring to users more pleasure as well. People's emotion towards objects is temporary and dynamic. However, the meanings of objects are stereotyped by society, culture, and history, even the product is taken for building self-identity (Heskett, 2002). Although cultural factors, like gender, are difficult to be analysed explicitly through quantitative methods, they are either easily concluded as a universal and consistent result and be applied to relevant studies. Consequently, a variety of methods would be welcome in an attempt to obtain more thorough understandings of human emotions. There are some pilot studies, e.g. Peranginangin & Chen (2009) and Shen et al.(2000), which concern Kansei issues through cross-cultural comparative research. These studies show that this area of research is of great potential.

This paper explains how gendered meanings are embedded in objects through historical analysis. Only when the correspondence between motorcycles and the social structure is comprehended will design not be caught in the trap that replicates biased ideologies. Besides, the gender connotation of motorcycle is not just a metaphor of marketing; it concerns power relations in everyday lives, which is another ‘myth’ of gendered power relations of motorcycles this research aims to discover, aside from interpreting the sources of product emotions through historical meanings.

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