GENDERING OF PRODUCTS: IN INDUSTRIAL DESIGN

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Approval of the Graduate School of Natural and Applied Sciences

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ABSTRACT

GENDERING OF PRODUCTS: IN INDUSTRIAL DESIGN

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This study examines gender typing of industrial products in the activity of industrial design. Thus firstly, the meaning of gender, related theories and gender stereotypes have been reviewed through the literature survey in order to pinpoint the stereotypical attributes assigned to men and women through society and culture. Secondly, the effect of the stereotypical gender attributes on the act of possessing products have been examined. In return, a literature survey on the cognitive aspects of design has been conducted in order to question whether these gender attributes might have a similar impact on the design activity. The findings of the literature survey pointed towards categorical information processing theories as an appropriate tool to gender type products and also as a tool to measure the gender qualities of a product. To test the applicability of the methodology of categorization a study has been conducted with industrial designers and industrial design students in which the students were asked to design gender typed products and industrial designers were asked to rate their perceptions of genderedness of the designs. The test revealed the existence of a

mental library consisting of categorized images corresponding to stereotypical gender attributes in the individuals, thus preparing the grounds for the use of this process in the industrial design activity.

Keywords: product design, product form, gender stereotypes, gender typed products, categorization

ÖZ

ENDÜSTRİ ÜRÜNLERİ TASARIMINDA ÜRÜNLERİN CİNSİYETLENDİRİLMESİ

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Bu çalışma endüstriyel tasarım eylemiyle endüstriyel olarak üretilen ürünlere nasıl cinsiyet kazandırıldığını inceler. Çalışma öncelikle kadına ve erkeğe atanmış kalıplaşmış sosyal ve kültürel rolleri incelemek için, cinsiyetin anlamı, cinsiyet ile ilgili teoriler ve cinsiyetin kalıplaşmış örneklemelerini açıklayan literatür taraması ile başmalaktadır. Literatür taraması devam ettirilerek cinsiyetin ürünleri sahiplenme eylemi üzerindeki etkisi araştırılmıştır. Cinsiyet ile ilgili kalıpların tasarım eylemi üzerinde olabilecek etkisi literatür taraması yoluyla sorgulanmıştır. Literatür taramasının bulguları doğrultusunda bilgileri kategorize ederek işleme teorisi, ürünlere hem cinsiyet kazandırmak hem de varolan cinsiyet faktörlerini açıklamak için uygun bir araç olarak bulunmuştur. Kategorizasyon metodolojisinin uygulanabilirliğini test etmek için, endüstriyel tasarımcılar ve endüstri ürünleri tasarımı öğrencilerinin katıldığı bir araştırma hazırlanmıştır. Bu araştırmada öğrencilerden cinsiyet özellikleri vurgulanmış ürünler tasarlamaları istenmiş, profesyonel tasarımcılardan ise tasarımların kazandırılan cinsiyetlere

göre puanlanması istenmiştir. Profesyonel tasarımcıların ve tasarım öğrencilerinin katıldığı bu çalışma, bireyler için kullandığımız cinsiyet özelliklerini oluşturmamıza yarayan kalıplaşmış zihinsel resimlerin ürün tasarımında da istemsiz olarak kullanıldığı ortaya koyulmuştur.

Anahtar kelimeler: Ürün tasarımı, ürün formu, cinsiyet kalıpları, cinsiyet kazandırlmış ürünler, kategorizasyon.

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CHAPTER 1

INTRODUCTION

1.1 Problem definition

Industrial design is responsible for creating products with instrumental functions as well as uploading meaning on to the products that will correspond to the needs of the individual's identities. Identities are formed through social interactions and cultural factors, thus while a person's identity develops it is constantly confronted with social norms and values that are ingrained into the society. These values, accumulated in society collectively are hard to dislodge once they are formed. One such group of values are those concerning gender and the notion of how a typical man and a typical women should be. Gender identity is an important part of most people's self concept because our gender regulates our social relationships on certain levels of communication.

Thus the designers' design activity must be carried out with this fact in mind. The design activity can be enhanced by using social values and norms as a point of reference. So, the designer must consciously develop a strategy to make use of such points of reference through an analytical method. Accepting the notion that social norms affect the visual and functional qualities of products, points of reference could be used to investigate previous and current products with regard to gender. In return, through the design activity more finely calculated products may be produced.

Since the market of consumer goods is naturally biologically split into two as targeting the male and the female, the act of designing is critical not just for designing consumer goods but also transmitting images supporting our communication, the designers must be conscious about the images they inscribe into their designs with regard to gender.

1.2 The Aim Of The Study

The aim of this study is to explore and discuss the way that industrial design captures and may capture the “male identity” and the “female identity” based on social conventions of gender in designed products.

1.3 The Structure Of The Thesis

The following chapter discusses the concept of gender, its stereotypes, how stereotypes are generated from a historical perspective and how individuals develop gender identity in the light of gender socialization theories.

The third chapter firstly focuses on the relationship between technology and gender, the remainder of the chapter discusses symbolic meanings of possessions for male and female consumers after a brief section on gender and advertising, the chapter concludes with a general review of products gendered by design.

The fourth chapter begins by discussing design definitions and creativity in design to find out how products are created, followed by a discussion on the effects of social norms and values on the creation of new products also building

up a mind library in the individuals. And finally in the light of previous sections, the methods of giving a character to artifacts has been discussed.

The fifth chapter defines categorization of objects as an explanation to how products are gendered. Group resemblance of products and prototypical categorization issues are revealed to explain the perceived imagery of objects in individual's mind. Following this section atypicality and typicality of products is explained with regard to gendered products by means of examples. Following taxonomic relations of products, razors as a gendered product category has been examined, concluding with character modeling in user and metaphors.

In the sixth chapter, the research conducted on gendering of products has been explained; beginning with the reason why a test is needed, followed by the design of the test and finally findings of the test.

CHAPTER 2

GENDER IDEOLOGY AND THEORIES

2.1 The Meaning of Gender

Sex refers to the biological distinction that defines people as either male or female according to their sexual organs and genes (Basow, 2). Gender on the other hand, refers to the social meanings attached to being male or female in any given culture or society, expressed in terms of masculinity and femininity (Richardson, 14019). A person's gender identity refers to the degree to which a person identifies oneself with masculinities and femininities.

When a child is born, his/her biological sex is used as the basis for the assignment of gender (Philips, 6016). Once the baby's sex is determined, he/she will firstly be given a gender appropriate name, will be dressed in gender appropriate clothes, and will be presented with gender appropriate toys. Thus, the society begins to impose sex typed attributes to children from the moment they are born. Though one's biological sex is the first determinant of gender, one's gender identity is culturally and socially constructed and develops through social interactions in time. Definitions of masculinities and femininities, distinct from the biological terms of male and female, vary across cultures, vary in any one country over time, change over the course of a person's life, and vary within any one given society at any one time (Kimmel, 9318). It is the culture and society, which the individual is a part of, that defines masculinity and femininity in terms

of, for example, personality traits (e.g. instrumental and agentic for masculinity / communal and expressive for femininity), social roles (e.g. head of household / caretaker of children), occupations (e.g. truck driver / secretary), and physical characteristics (broad shoulders / grace). Thus people are viewed as masculine and feminine to the extent that they comply with the societies' definitions of masculinity and femininity. These definitions are compiled in what can be called a "gender belief system". Such a belief system, which is constituted of opinions about males and females and the purported qualities of masculinity and femininity shapes the way we perceive and evaluate others (Baslow,3). Two fundamental aspects of this system are the stereotypes of women and men, and the roles assigned to women and men.

2.2 What are Stereotypes?

The simplest way to define stereotypes is to refer to them as "pictures in our head" that refer to an internal, mental representation of social groups in contrast to their external reality (Banaji, 15100). Stereotypes are cognitive beliefs that associate groups of people with certain types of characteristics/traits (Brehm and Kassin, 146). Stereotypes mainly operate through a categorization process. As perceivers, people naturally sort different objects into groups on the basis of common attributes rather than thinking of each object as unique. Similarly people sort each other into groups based on gender, race, age, and other common attributes, a process referred to as social categorization (147). Once categorized, attributes believed to be associated with the group are generalized to individuals who qualify for group membership. Thus, for example, women may come to be

seen as nurturant and nice, men as strong and competent whether they as individuals, deserve those ascriptions or not (Banaji,15102).

The process of categorizing objects and people differ in that people themselves are members or non-members of the categories they employ. Groups with which we identify ourselves are referred to as ingroups, while those we do not are called outgroups (Brehm and Kassin, 148). The membership of the individual into a group also brings a tendency to assume that there is greater similarity among members within outgroups than within ingroups, referred to as the "outgroup homogeneity bias" in social psychology (148). Thus, as generalized beliefs stereotypes provide quick convenient summaries of social groups, however as overgeneralized beliefs, stereotypes cause people to overlook the diversity within categories and to form inaccurate impressions of specific individuals (149).

Stereotypes emerge spontaneously from initial categorization and continue to have a life of their own independent of conscious will, that is, they may operate without conscious awareness, conscious intention, and conscious control (Banaji, 15103). Moreover, stereotypes can be activated by the mere presentation of symbols of social group or group-related attributes (15103).

The fact of the matter is that every person or different types of objects may be considered unique in their own way. Nevertheless, we tend to unconsciously categorize people and objects into groups so as to allow quicker processing of information, leading us to be more prompt in making judgments. However, during this process it is also possible that many of the associations we form in our minds are only slightly correlated or not correlated at all. The tendency to overestimate the association between such variables is referred to as illusionary

correlations (Brehm and Kassin 149). For example, many people could easily form an association between beer and chips, or a lion and a tiger. Similarly, in social categories, desirable behavior could be associated with the majority group, and undesirable behavior with a minority group (150). In a test conducted by Hamilton and Rose (1980), subjects were presented with twenty-four sentences each linking someone from a familiar occupational category (accountant, doctor, salesman, stewardess, librarian and waitress) to a trait (perfectionist, timid, wealthy, thoughtful, enthusiastic, talkative, productive, attractive, serious, comforting, busy, loud) (Brehm and Kassin, 150). Though each occupation was paired equally often with each trait, the subjects later overestimated the number of times they read about wealthy doctors, talkative salesman, attractive stewardesses, serious librarians, and loud waitresses. Thus, misdirected by their preconceived notions, the subjects perceived correlations that were expected but did not exist. "Once a stereotype is in place, people are more likely to notice the supporting evidence, and even imagine events that confirm the stereotype" (151).

2.2.1 Gender Stereotypes

Gender stereotypes are structured sets of beliefs about the personal attributes of men and women. In *Gender: Stereotypes and Roles* Susan A. Basow demonstrates how deeply ingrained gender stereotypes are in societies through a riddle:

> A boy and his father were involved in a serious automobile accident. The father was killed instantly; the son was severely injured. An ambulance rushed him to the nearest hospital, and a prominent surgeon was summoned to perform an

> immediate operation. Upon entering the room, however, the surgeon exclaimed, "I can't operate on this boy. He's my son." Question: how can this be? (Basow, 2)

Basow reveals that if the individual comes up with answers involving a stepfather, reincarnation, a mistake and so forth, than they are part of the majority that who think of surgery as a male occupation (2). The answer of the riddle is that the surgeon is the boy's mother. "The fact that most people do not guess the answer demonstrates the pervasiveness and strength of certain gender stereotypes – in this case, occupational ones" (2).

Gender stereotypes are those adjectives that come to mind when we try to list descriptors for the words masculine and feminine. In a study conducted by I. Boverman, Vogel, Broverman, Clarkson and Rosenkrantz (1972) regarding the existence of different personality traits in men as compared with women, more than 75% of those asked agreed that 41 traits clearly differentiated males and females. Table 2.1 lists these traits in the two categories suggested by statistical analysis: 29 male-valued items (competency cluster) and 12 female-valued items (warmth expressive cluster) (Basow, 4).

Another study (Williams and Best, 1982, 1986) which sought to reveal traits attributed to men and women covering 25 countries in North America, South America, Europe, Africa, Asia and Australia revealed that stereotypical attributes to males and females were quite consistent throughout the world (Brehm and Kassin, 155). Table 2.2. reveals the universal gender stereotypes as concluded in this study.

Competency Cluster: Masculine Pole Is More Desirable	
Feminine	***Masculine***
Not at all aggressive	Very aggressive
Not at all independent	Very independent
Very emotional	Not at all emotional
Does not hide emotions at all	Always hides emotions
Very subjective	Very objective
Very easily influenced	Not at all easily influenced
Very submissive	Very dominant
Dislikes math and science very much	Likes math and science very much
Very excitable in a minor crisis	Not at all excitable in a minor crisis
Very passive	Very active
Not at all competitive	Very competitive
Very illogical	Very logical
Very home-oriented	Very worldly
Not at all skilled in business	Very skilled in business
Very sneaky	Very direct
Does not know the way of the world	Knows the way of the world
Feelings easily hurt	Feelings not easily hurt
Not at all adventurous	Very adventurous
Has difficulty making decisions	Can make decisions easily
Cries very easily	Never cries
Almost never acts as a leader	Almost always acts as a leader
Not at all self confident	Very self-confident
Very uncomfortable about being aggressive	Not at all uncomfortable about being aggressive
Not at all ambitious	Very ambitious
Unable to separate feelings from ideas	Easily able to separate feelings from ideas
Very dependent	Not at all dependent
Very conceited about appearance	Never conceited about appearance
Thinks women are always superior to men	Thinks men are always superior to women
Does not talk about sex freely with men	Talks freely about sex with men
Warmth-Expressive Cluster: Feminine Pole is More Desirable	
Feminine	***Masculine***
Doesn't use harsh language at all	Uses very harsh language
Very talkative	Not at all talkative
Very tactful	Very blunt
Very gentle	Very rough
Very aware of feelings of others	Not at all aware of feelings of others
Very religious	Not at all religious
Very interested in own appearance	Not at all interested in own appearance
Very neat in habits	Very sloppy in habits
Very quiet	Very loud
Very strong need for security	Very little need for security
Enjoys art and literature	Does not enjoy art and literature at all
Easily expresses tender feelings	Does not express tender feelings at all easily

Table 2.1. Stereotypic sex role descriptors. (I.Boverman, Vogel, Broverman, Clarkson and Rosenkrantz, 1972) Reprinted (Basow, 5).

MALE	FEMALE
Active Adventurous Aggressive Autocratic Coarse Courageous Daring Dominant Enterprising Forceful Independent Inventive Masculine Progressive Robust Rude Severe Stern Strong Tough	Affected Affectionate Anxious Attractive Complaining Curious Dependent Dreamy Emotional Fearful Feminine Gentle Mild Prudish Self-pitying Sensitive Sentimental Sexy Soft-hearted Submissive Superstitious Weak Whiny

Table 2.2. Universal Gender Stereotypes: Traits commonly attributed to men and women in gender stereotype studies conducted in 25 countries around the world. (Williams and Best, 1982) Reprinted (Brehm and Kassin, 155)

2.2.2 Activation, Endurance and Basis of Gender Stereotypes

Deaux and Major identify three factors which determine the activation of a gender stereotype: the perceiver, the target, and the situation (Brehm and Kassin, 157). Perceivers who have distinct masculine and feminine gender role orientations will accept gender as a dominant social category and consequently will have the tendency to divide the world into masculine and feminine categories (157). Those who are more balanced in their orientation however, will not be inclined to categorize the world first and foremost by gender. The second factor that may activate a gender stereotypes is the characteristics of the target. People

who are highly masculine or feminine in their physical appearance reinforced by certain clothing that heightens attention to gender, will give the impression that they are masculine or feminine in their character as well (158). Even titles could change perception, for example Ms. Miss and Mrs. The last factor that effects gender stereotype activation is the situation. Certain situations are more likely than others to make gender considerations salient. For example, nursery schools, mechanic workshops and single bars may automatically prompt perceivers to make gender distinctions.

The reason gender stereotypes endure is identical to why stereotypes endure in general. Since people expect male and female differences they are prone to perceive illusionary correlations, overestimating the percentage of masculine men and feminine women (Brehm and Kassin, 161). Also people tend to dismiss individuals that do not match the stereotype as exceptions to the rule or representatives of a subcategory. "For example, people distinguish at least five types of women: housewives, career women, athletes, feminists and sex objects" (152). Thus, if one is confronted with a woman who does not stand out as particularly nuturant or warm, the mismatch can be tossed into a subcategory like "career woman" (152). Still another reason proposed by Brehm and Kassin in concern to the endurance of gender related stereotypical roles, is that they are continually reproduced through children's books, cartoons, music, movies, magazines, and TV shows that constantly portray traditional male and female stereotypes (161).

Basow explains two basic views on the basis of gender stereotypes. The first, "the kernel of truth theory", suggests that real differences exist between males and females and that these contribute to the birth of exaggerated, perceived

differences. "This approach suggests that differences exist first and that the stereotypes simply reflect them" (Basow, 9). The second theory, the "social role theory" asserted by Eagly, maintains that stereotypes arise from the different social roles typically held by women and men (9). Figure 2.1. illustrates the process of gender stereotyping according to the social role theory.

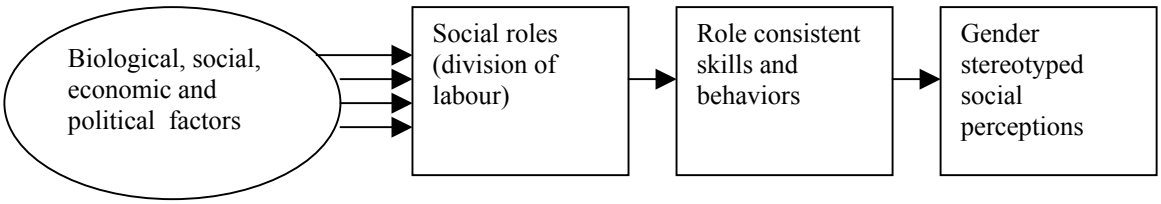


Figure 2.1. Eagly's Social Roles Theory of Gender Stereotypes (Brehm and Kassin, 163)

According to this theory, stereotypes of men as dominant and women as subordinate persist because men tend to occupy higher-status positions in society. The division of labour, a product of various biological and social factors, leads men and women to behave in ways that are consistent with their social roles.

> These behavioral differences provide a continuing basis for social perception, leading us to perceive men as dominant 'by nature' and women as domestic 'by nature', when in fact men are dominant and women are domestic because it is consistent with the roles they must play. In short, gender stereotypes are shaped by – and often confused with – the unequal distribution of men and women into different social roles. (Brehem and Kassin, 162).

In the light of the view that a gender based division of labor gives rise to gender stereotypes particularly with respect to personality traits, it is necessary to examine the initiation of the division of labor in western societies.

2.2.3 The Division of Labor as a Contributor to Gender Roles and Stereotypes

A survey of world cultures throughout history reveals that gender stratification (male dominance) and a division of labor between the sexes, as well as the existence of gender stereotypes are nearly universal (Basow, 106). In a study covering more than thirty countries J. E. Williams and Best found that nearly everywhere males are characterized as adventurous, forceful and independent while females are characterized as sentimental, submissive and superstitious (106). From a behavioral point of view further studies indicated that males often see the world in more instrumental and agentic ways and act in more aggressive, dominated, independent and achievement oriented manner than females. On the other hand, females often see the world in expressive and communal ways and act more nuturantly, responsibly, obediently, and expressively than males (107). Evidence suggests that such a difference in behavior and worldview are the result of the division of labor between the sexes. In the western world the division of labor as it began in the modern world finds its beginning in the industrial revolution.

The industrial revolution, which began in the mid-eighteenth century in Britain, had a tremendous effect on social roles of men and women in society. As Ann Oakley states in *Housewife* for men the revolution "enlarged the world outside the home, chiefly by expanding the range of occupations available to them" (32) while for women it meant "an involution of the world into the space of the home" (32).

Before the revolution began, women in Britain, except for those of the aristocracy, had an important role in contributing to the income of the family. They engaged in many fields of occupation, especially in the areas of textile and agriculture (14). The work place for the seventeenth century family was the home where all members of the family would work together to earn a living through the family trade. Men and women were equal partners and productivity was expected of both. Children were treated as adults from a very early age and would begin to engage in the family trades from the age of four and were often sent away for apprenticeship in other forms of trade by the age of eight (25).

With the industrial revolution the situation changed immensely but gradually for both sexes. The emergence of factories shifted the place of work to outside of the home. At first, in accordance with the tradition of family labor, whole families were hired as workers where they could all work together (37). However, factory conditions were proving to be hazardous for the children's health and gradually laws were passed that limited the hours children could work and criteria were placed for workplaces that employed children. Factories began to refuse employing whole families and parents were presented with the problem of who would care for the children (46).

By the 1840s the upper-class and middleclass women had been denied of productive work for some time and were occupied at home with housework and child care, whereas the working class women were still trying to support their families despite poor wages and spreading unemployment for women (43). The 1840s began to bring women under the "protected persons" classification, similar to the conditions of children (44). Women labour was excluded from mines and work hours were gradually decreased. Oakley reveals that there were four main

reasons that were asserted as grounds for restricting or preventing women from working outside the home. "Female employment was condemned on moral grounds, on grounds of damage to physical health, on grounds of neglect of home and family, and lastly, simply on the grounds that it contravened the 'natural' division of labour between the sexes" (45). Factory environment was starting to be considered as inappropriate for women and those who worked in these factories were considered to be vulgar and indecent. It was asserted that factory conditions also affected women's health and consequently her ability to bear children. Since children were excluded from employment, it was asserted that working married women should be at home taking care after them. Finally, women labor was considered as a competitional threat for male employment (45).

For the middleclass women the doctrine of feminine domesticity had long been established, and by the nineteenth century marriage had become a full time occupation. The idea that working outside the home was a misfortune and disgrace for women, reached the working class in the second half of the nineteenth century (50). Thus, women who had been excluded from economic productivity were now in their homes, bringing up their children and doing the housework.

Today, though women have gained equal rights with men and are able to achieve economic independence in many fields of occupation, the legacy of the industrial revolution, which excluded women from industrial fields of occupation resulted in a chain reaction determining stereotypical roles and attributions for men and women. As Lopata notes, the process of industrialization and urbanization, the organization of work into jobs within economically motivated organizations, the development of nation-states and a series of accompanying

cultural changes split the conceptualized world into many ways, including into two spheres, private and public (232). Jobs, or occupational roles in public life became defined as masculine, while the private sphere consisting of the home and family became the domain of women. The role of women as a member of a cooperating family integrated within the community in all institutions was reconstructed to that of a homemaker, wife and mother in a privatized home (232). "In the meantime, the men's sphere was separated from this territory and simultaneously expanded to all institutions of public life: economic, political, religious, and higher educational" (232). The result of this conceptualized two-sphere world is still visible today in stereotypical images of men and women. "Women had become defined and socialized into motherly, caregiving, empathetic, expressive and cooperative persons, while men became defined and socialized as rational, efficient, strong, and competitive" (233).

2.3. Theories of Gender Socialization

Since our concern is gendered products, or how products can be seen as promoting gender, mainstream gender theories must be referred that attempt to explain how the concept of gender, gender identity and sex typing is established in individuals. In order to understand where the designer comes up with conscious or unconscious effects that hint to gender and how the consumer selects and analyzes these hints or finds meanings in the design even if none was intended, we must understand how one becomes aware of gender and how it is interpreted in the first place. Thus the following theories offer explanations to how, as children, we are firstly confronted with the fact that there exists two biologically different sexes,

how we react to this knowledge, how we choose to express ourselves through this knowledge, how we are reinforced to act in certain ways, or how we choose to imitate certain people with respect to this knowledge, how we make decisions based on this knowledge etc. Among the four theories that will be referred to for the purpose of understanding the initiation of sex-typed behavior, our main argument will be based on the Gender Schema Theory which will be explained thoroughly in this chapter.

2.3.1 Psychodynamic / Psychoanalytic Theory

The psychodynamic theory as a theory of gender socialization finds its roots in Freud's psychoanalytical theory and can be roughly divided into two different perspectives. In general, the theory emphasizes how early childhood experiences with the primary caretaker effects the child's gender identity and personality.

The traditional scholars follow Freud in adopting the Oedipus complex for boys and the Electra complex for girls, as grounds for gender socialization. From this respect gender is determined initially from a biological standpoint. At the ages of 5 or 6 children realize that only boys have penises. Fear of removal of the penis, the Oedipus complex, leads boys to detach themselves from their primary caretaker, the mother, and to identify themselves with the father (Basow, 118). The fear, posits this group of scholars, results in a stronger gender identity for the male child, because of a stronger superego (Stockard, 222). The Electra complex on the other hand, refers to the female child's feeling of inferiority to boys because of the lack of penis. Thus it is asserted that the girl also detaches herself

temporarily from her mother, also considering her inferior, and becoming closer to the father. However, when the female child realizes that this attachment will not be feasible due to the lack of the penis, she once again identifies herself with her mother and dreams this time of childbearing (Stockard, 222). Also called penis envy, the Electra complex, results in the female gender identity to be weaker, due to a weaker superego.

The second and more recent perspective which also finds root in the psychoanalytical theory asserts that the first identity for both boys and girls is feminine since they are firstly closely attached to their mother. Thus achieving gender identity for boys is harder than for girls because they must reject their first identity as feminine (Stockard, 223). And knowing what feminine is already, they define masculinity as everything which is "not feminine".

With respect to biological factors and the asserted views on how children deal with this difference psychologically, this view asserts that by the age of 5 or 6 male dominance and female subordination become part of male gender identity and the model of relationships between the sexes.

2.3.2 Social Learning Theory

The social learning theory emphasizes the importance of environment in a child's development and views gender identity as a product of various forms of learning in his/her social environment. According to this theory the child learns his or her role through the way he/she is treated, the rewards and punishments received as well as observation and modeling.

The main focus of this theory was initially "reinforcement" by agents of socialization, which was asserted, caused children to develop sex-typed behavior since they were reinforced by others to activities conforming to the expectations of their sex groups (Stockard, 217).

However, in the 1960s the focus of the theory became "modeling", which suggests that children develop sex-typed behavior because they choose to copy the behaviors of same sex individuals (217). While initially the theory focused on the "agents" in the "reinforcement" view, the "modeling" view focuses on the "targets", and their ability to imitate the actions of their chosen agents.

2.2.3 Cognitive Developmental Theory

The Cognitive Developmental Theory focuses primarily on the child's active role in acquiring sex role behaviors. Once the permanence of gender is grasped at the age of 5 or 6, this self-categorization becomes a reference point for future actions. Thus the child begins seeking out models and situations in accordance with the categorization to maintain consistency. The initiator of this theory, Kohlberg, asserts that the establishment of gender identity guides the perception of gender stereotypes and the consequent development of gender attributes (Basow, 123). As children develop cognitively, their rigid stereotyped views of appropriate behaviors for males and females begin to change until adulthood due to greater cognitive ability and capability for complex thought (Stockard, 218).

2.3.4 Gender Schema Theory

For the purpose of the current study, particular emphasis will be placed on the Gender Schema Theory introduced by Sandra Bem attempting to explain how sex typing occurs. However, to understand how gender schemas work we must firstly explain the social psychology of schemas, what they do and how they work.

2.3.4.1 The Social Psychology of Schemas

"Schemas are generic knowledge structures that summarize past experiences and provide a framework for the acquisition, interpretation and retrieval of new information" (D. E. Carlston and L. Mae, 13526). On encountering a person, object, situation etc. a schema will be activated to begin processing information. Once the schema is activated, our attention will firstly be directed to schema relevant information. If we are confronted with new information, our schema will affect how we interpret it by providing a framework that will shape our expectations and judgments. By recalling information from previously acquired knowledge and past experiences we will eventually come to some sort of conclusion about the new encounter. This process is usually functional and leads to a more rapid, accurate and detailed information processing (13527). However, it is also possible that we might recall inaccurate information which would lead to flaws in information processing and cause the final judgment to be faulty.

We can give the example of an encounter with a doctor to explain how schemas work. Firstly, on seeing the doctor, our "doctor schema" based on our past experience and knowledge, will be activated. Next, our attention will be directed to schema relevant information. Thus we would notice his white coat and the stethoscope around his neck. To explain how inaccurate information may be processed let us assume that the doctor does not have a stethoscope at all. Nevertheless, on recalling the encounter we would inaccurately "remember" him as having a stethoscope because we would associate stethoscopes with doctors in our "doctor schema".

2.3.4.2 Gender Schemas

The gender schema theory contains features of the social learning theory and the cognitive developmental theory, combines this with schematic processing and acknowledges the importance of cultural factors (Basow, 125). According to this theory sex typing derives from gender schematic processing, a readiness on the part of the child to encode and to organize information according to the culture's definition of gender roles (Basow, 125) . Children form gender schemas through observing distinctions made between males and females in their culture. These gender schemas become more elaborate as the child develops a gender identity and begins to understand gender roles. The outcome is that when encountered with a situation that pertains to gender children use their gender schemas to interpret and process new information. Since the gender schema is used to organize information, when the self is incorporated into the schema, the stored information is followed through to maintain the consistency of gender

identity. For example, a male child aware that he is a boy, will match his attributes and behaviors with those he stores in his gender schema so as to evaluate himself and maintain his gender identity as masculine (Basow,125).

To give a specific example of how schematic processing takes place we can refer to Martin and Halverson's (1981) article on schematic processing of sex typing who present a model of how the schematic process would occur if a young girl was presented firstly with a doll and then a truck. According to Martin and Halverston, upon encountering a doll, a girl would "decide first it was self-relevant, second, that dolls are 'for girls' and 'I am a girl' which means 'dolls are for me'" (1120). The result will be that the girl will play with the doll and obtain further information which will be elaborated and remembered. On the other hand, if the girl was presented with a truck, she would decide that the truck is not self but schema relevant as in trucks are "for boys" and "I am a girl". Her decision would be "trucks are not for me" and this would lead her to avoid trucks and to obtain no further information about trucks other than "for boys, not for me".

Like all schemas, gender schemas remain with individuals through life as an outcome of culture and social interactions, though to what degree a person may refer to gender schemas in processing information will vary according to their worldview. Gender schematic individuals will spontaneously sort information, attributes, behavior etc., into masculine and feminine categories even though other dimensions for categorization exist and despite the fact that the clustered items may have differences with respect to a variety of other dimensions, because gender connotations will be especially salient for them (Bem,1192). So a gender schematic person would spontaneously place items like "assertive" and "eagle" into a masculine category and items like "tender" and "nightingale" into a

feminine category (Bem, 1192). “A gender aschematic person however may firstly prefer to place “nightingale” and “eagle” together as birds, and “assertive” and “tender” together as adjectives. Forming the clusters with respect to gender would come to their mind secondarily or not at all.”

2.3.4.3 Self-Schemas and Gender

Another point of view concerning the schematic processing of information and its gender related angle come from Markus, Crane, Bernstein and Siladi in “Self Schemas and Gender”. Their research, though does not create a direct conflict to that of Bem’s gender schema theory, suggests and alternative view of how the individual’s self schema and gender interact. Markus and her associates define self schemas as “summaries and constructions of past behavior that enables individuals to understand their own social experience and to organize a wide range of information about themselves” (38). They note that there are universal schemas which everyone has to one degree or another with respect to the aspects of one’s self that are particularly salient and available for social evaluation and comment. Among these is a person’s sex, which becomes a distinguishing trait early in one’s life and remains as an important parameter of a person’s social interactions (39). In most cultures one would assume that everyone would have some kind of understanding and representation of attributes and meanings that could be characterized as either masculine or feminine. Markus and associates assert that for some individuals these meanings may be a means of describing, contemplating about and evaluating the self. Thus, as an important component of the self, it is likely that a gender schema will be highly

available and centrally implicated in information processing about gender in general and about the gendered aspects of the self in particular (39). Markus et. al. name gender identities as masculine, feminine, high androgynous (what Bem refers to as simply androgynous, Figure 2.2) and low androgynous (what Bem refers to as undifferentiated, Figure 2.2)

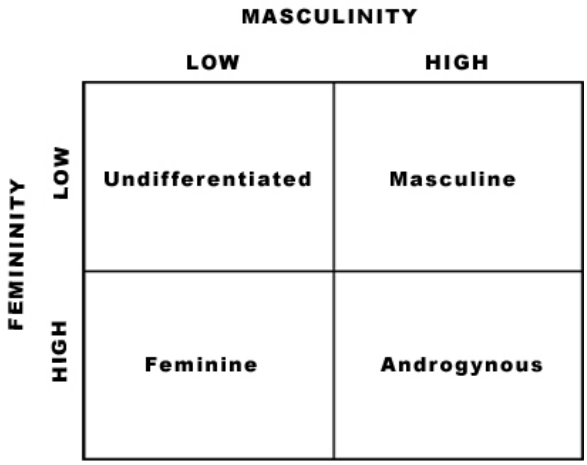


Figure 2.2. Bem's fourfold classification of sex typing. (Basow, 13)

According to the results of a test that they have carried out, Markus et al conclude that for example a masculine schematic responds with confidence to masculine adjectives and is able to recall and cluster them with great ease, and while they may be able to cluster feminine adjectives too, they are unconfident in this process and require more time to decide. Thus, instead of applying one single gender schema into the schematic process of individuals they assert that people have gender schemas responding to their gender identity. For example a masculine male would have a "masculine schema" incorporated into his self schema and the feminine schema would not be available to them in their self schema (Markus, 48). Figure 2.3 reveals the relationship between gender schemas and self schemas.

The main difference between Bem and Markus is that Bem posits that gender connotations of both masculine and feminine stimuli are highly available, while Markus claims that sex typed individuals are not "gender schematic" because masculine and feminine stimuli are not equally available and are not processed with equal efficiency. To compromise the matter we can assert that it could be considered natural for a gender schematic male or masculine schematic to process masculine stimuli with greater ease than feminine stimuli, or vice versa. However, what is important for our study is to conclude that people have some sort of schema with relation to gender that is formed from past experiences, learning, observation, social and cultural factors which enables them to define masculine or feminine stimuli as masculine and feminine. The fact the matter is that people are able to process information on the basis of gender when presented with gender related stimuli in one way or the other, either by forming male and female categories or by way of omitting in a "for me" and "not for me" basis.

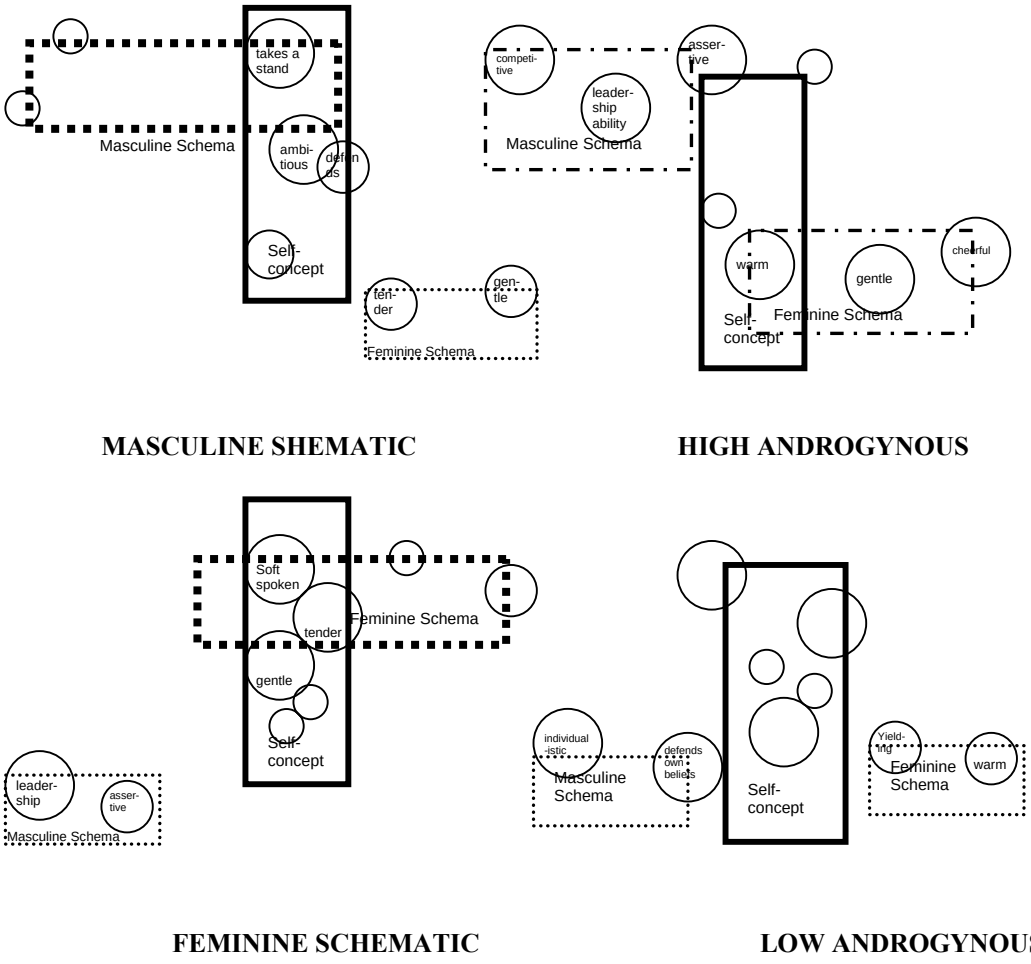


Figure 2.3. Relationship between gender-relevant knowledge structures and the self-structure for masculine schematics, high androgynous and low androgynous (Markus, Crane, Bernstein and Siladi, 41).

CHAPTER 3

GENDERED PRODUCTS

3.1 Technology and Gender

The question of technology and gender as a new field of study emerged in the 1980s when feminists claimed that the male monopoly of technology was an important source of men's power and females' lack of skill and exclusion from technological areas except as end users, was an important element concerning their dependence on men (Wajeman, 5976).

The definition of technology is cast very much in terms of male activities, such as in terms of industrial machinery and cars, ignoring other technologies that are used in everyday life by women, for example, in the kitchen (Wajeman, 5976). Since the history of technology still presents the prototype inventor as male, researchers in the area have tried to uncover women's contributions to technology that have been hidden from history. However, since technology research was firstly male oriented and women's inventions were not acknowledged, the cultural stereotype of technology as an activity appropriate for men was reproduced (5976).

The reason of women's exclusion from technology and for example, sex segregation concerning technologies in the workplace, can be found from a historical perspective in the industrial revolution. As we have noted in the

previous chapter women were excluded from labor in the factories due to various reasons. As a consequence of this, the craftsmen who invented the factory machinery designed the machinery with only men in mind (Wajeman, 5977). The seperation between women and technology is thus a legacy of this history.

By contrast, in the domestic sphere, women are the main users of technology (Wajeman, 5977). Since housework was recognized as work, though unpaid, in the 1980s, domestic technology was placed under scrutiny, for example, to reveal if a relationship existed between the domestic technologies and the time spent on housework. "Dominating the debates is the knowledge that the amount of time women spend on housework task has not decreased with "mechanization of the home" (5977). Nigel Whitely quotes Goodall who questions the use of mixer as time saving devices, "The use of mixers to provide omelettes for 200 saves time, and effort. With the same operation for a family of four a proportionally large time is spent preparing the machine for use" (143).

One explanation concerning this comes from Peter Dormer who asserts that in an effort to make things lighter and more 'feminine' domestic tools are frequently rather flimsy in contrast to powerful and efficient industrial and commercial equivalents. Whitely quotes an associate who asserts that:

> Men's tools – DIY – are taken seriously and designed sturdily; women's tools are not. Vacuum cleaners, brooms, and dustpans are plasticy, flimsy, and brightly-colored with 'taste' in mind in spite of the fact that women use these tools much more frequently than, say, a man might use a power drill or hedge-trimmer. These items are not made to the same standard (144).

In addition to this, since male designers do not use these tools as much as women, they make their decisions more on appearance than on the daily function of these tools, neglecting to consider quieter motors or sound insulation; thus they are often noisy (e.g. vacuum cleaner, washing machine, food grinder). Margret Bruce complains that:

> …irons are uncomfortable and heavy to use for sustained periods of time, tools for putting up shelves and mending cars are often heavy and are designed with the 'macho' man in mind, food mixers are clumsy, awkward to clean and clutter up work-tops, and the fridge door and seals perish long before the useful life of the appliance has ended. (Whitely, 141)

Goodall further posits that women may be put off using power tools, such as drills, because they are heavy (Whitely, 141). Since a vast majority of products are designed by men for women or for other men, the products intended for females end up being designed from a male perspective that do not completely consider the actual users' (women) expectations, and the power tools designed with men in mind do not consider that woman might want to use them, too. For example, a man could easily operate a food processor because it does not require extra capabilities, however, a woman could have trouble using a power tool because its weight might be too heavy for her to lift. Whitely notes that the experience women could have with such tools, confirms the negative attitude to machinery, equipment and technology that many women form during childhood and school and is reinforced by advertising and design in consumerist, patriarchal society (141). Whitely further asserts that:

> Men can be insensitive designers for women as users in two ways: First, by disregarding the physical characteristics of women; and second, by assuming that women feel as 'at home' with advanced technology as men – some do, but the majority will have developed less confidence through negative socialization processes. (142)

Another point worth noting in concern with the alienation of women to advanced technology concerns the style of the products. According to Whitely, the visual appearance of many technological products compounds gender difference and discourages potential or actual female users by making the device look more difficult than they actually are (144). Whitely quotes one of his colleagues who explains that:

> Many products I find alien and therefore inaccessible because of the way they *look*. Cars, stereos- and video-equipment is designed for male customers: shiny, black, hard-edged, machine-like, technological. Women do use machines but they have a less aggressive look, e.g. vacuum-cleaners, cookers, sewing machines, and some unisex typewriters. Machines used by men are considered 'technology'; whereas women's machines are not (144).

In the light of those said, the relationship between technology and gender can be summarized as such: The division of labor in the industrial revolution excluding women from factories and committing them to their homes, was the first step of separating women from technology and equating technology with men. The second reason technology came to be recalled together with the masculine sphere is due to the neglect of technology researchers, who were initially men, to acknowledge technological innovations of women in history, thus

once more portraying technology as a purely male domain. As technology advanced and was brought into the domestic environment, it was the male monopoly that designed and manufactured domestic tools for women. Since the men were designing with women in mind as the users, the designs usually ended up with stereotypical connotations of gender and were not sturdy enough for frequent use in contrast to their industrial equivalents. Also women were alienated from those products designed "by men for men" since the possibility that they might want to use them too was not taken into consideration. Finally, it can be argued that, many of the industrial designs for women, were gendered replicas of the initial male prototypes. Thus, men's monopoly of technology and the cultural stereotype of technology as an activity appropriate for men did not change with the introduction of technology into the women's sphere of the home.

3.2 Technology and the Social Relations

In the field of science and technology studies, artifacts play an important role in stabilization and naturalization of social relations (Oudshoorn, 471). Schneider defines an object as the result of a compromise between people rather than the accomplishment of one's creative vision or will (173). Law, goes one step further claiming that all relations should be seen as both social and technical. Accordingly he denotes that purely social relations are found only in the imagination of sociologists, among baboons, or possibly, just possibly, on nudist beaches; and purely technical relations are found only in the wilder reaches of science fiction (Law, 290).

Therefore, our social relations are formulated by a kind of heterogeneity of the technical and the social. People are surrounded by different sorts of technology in their homes, on the streets and at their places of work, which makes it impossible for social interactions to take place without being surrounded by some sort of technology, whether it be music transmitted from a stereo during a conversation between two people, the wristwatch used to regulate the beginning of a meeting we are to attend, or the furniture in our homes produced through technology. As Law depicts, what we call the social is bound together as much by the technical as by the social (290). Thus, our living environment, our working environment, and our material possessions are all technologically and socially defined. Our relations cannot be purely social and will inevitably have some sort of technology involved, so there must exist some sort of relationship between humans and their possessions which we will attempt to argue in the following sections.

3.3 Symbolic Meanings Of Possessions: Self-Enhancement and Social Values

Evidence from psychological and sociological research strongly supports the role of an individual's self-concept as a partial determinant of human behavior (Grubb and Grathwohl, 100), and thus provides an area of research in consumer behavior attempting to explain why people chose to buy the products they buy.

One's self-concept or self-image, evolves through social interactions with people one associates with, like parents, peers, teachers, and significant others. "Recognition and reinforcement from these persons will further strengthen the conception the individual has of himself" (101). As one's self-concept is not an

isolated process, the social interaction process is also not isolated. According to Grubb and Grahwolh, during the interaction, individuals will be affected both by the environmental setting and the personal attire of each individual present (101).

> Therefore, the individual will strive to control these elements to facilitate proper interpretations of his performance. Items of the environmental setting or the personal attire become the tools or a means of goal accomplishment for individuals in the interaction process (101).

Many of the tools referred to above are consumer goods which serve as symbolic communication devices (106). Halle, explains symbols as something which stands for or represents, something else: 'a visible sign of an idea or quality or of another object.' According to Halle, symbolism of artifacts is closely associated with the notion of meaning, for the link between the artifact/symbol and what it stands for or represents in most cases goes through the mind of observers (52).

Today, material goods are consumed not only for their functional benefits, but also as symbolic signifiers of taste, lifestyle, and identity (Dittmar, 1995). Thus, modern goods are recognized as psychological things, as symbolic of personal attributes and goals, as symbolic of social patterns and strivings. In this sense all commercial objects have a symbolic character, and making a purchase involves an assessment - implicit or explicit - of this symbolism, to decide whether or not it fits. Energy (or money) will be given when the symbols are appropriate ones, and denied or given parsimoniously when they are not (Levy, 4).

In his article "Symbols by Which We Buy" Levy explains the product appropriateness as follows; A symbol is appropriate—and the product will be used and enjoyed when it joins with, meshes with, adds to, reinforces, the way the consumer thinks about himself. In the broadest sense, each person aims to enhance his sense of self, to behave in ways that are consistent with a set of ideas he has about the kind of person he is or wants to be (Levy, 4). Self-enhancement through symbolic meanings of products can be achieved in two different ways. The first way, as mentioned earlier, is by using products as symbols while interacting with others, causing the desired response and thus reinforcing and enhancing one's self-concept. The second way, involves an intra-action process whereby an individual communicates with himself through the medium of symbolic products, thus supporting his self-concept (Grubb and Grahwolh, 106). Similarly, Lunt and Livingstone portray in *Mass Consumption and Personal Identity* that the goods people possess affect their social reputation, their image of themselves and their self- esteem, as well as their desires for future purchases, and their assessments of their relative standard of living and status in relation to others, both present peers and past upbringing (59).

Goods which people possess are clearly considered to be necessities, likewise the telephone, the washing machine and the car. However, besides their basic role, allowing for the daily management of a modern household, they provide the connections with dispersed social networks with their symbolic qualities.

3.4 Differences in Male and Female Attitudes in Relation to Symbolic Meanings Of Possessions

According to Csikszentmihalyi and Rochberg-Halton (1981) the symbolic meanings of objects balance two dynamic forces: differentiation, "separating the owner from the social context, emphasizing his or her individuality" (38), and similarity, where "the object symbolically expresses the integration of the owner with his or her social context"(39). Complying these two forces Csikszentmihalyi and Rochberg-Halton, also describe two dimensions of object orientation: the dimension from action to contemplation and that from self to other.

With concern to gender differences, their foundings suggest that men and younger people expressed a more differentiated and action oriented sense of self in relation to possessions while women and older people tended more towards contemplation and similarity or other-orientation" (Lunt and Livingston, 60). Relevantly, Csikszentmihalyi puts forward interesting responses given by individuals for his experimental study where 315 individuals in 82 families were interviewed (118).

In one of the interviews he made, Csikszentmihalyi describes a woman who showed them with pride a plastic statuette of the *Venus de Milo.* As it is told in the article, the specimen in question was tacky, with thick seams and blurred features. When the interviewer asked the woman why the statuette was so special to her, the answer given by the respondent was, the statue had been given to her by a Tupperware regional sales manager as a prize for the quantity of merchandise she had sold. Csikszentmihalyi notices that whenever she had looked at the Venus

replica, she did not see the cheap goddess, but an image of herself as a capable, successful businessperson (119).

Predictably, the responses given to interviews portrayed a difference between gender which indicates stereotyped sexual roles influence the way we perceive and respond to objects in the environment. Csikszentmihalyi indicates that, men were similar to the children that they had interviewed, preferred things that could be interacted with. For the products that men preferred the rankings are as follows: The first being unnoted, television sets ranked second, stereos ranked third, musical instruments ranked fifth and sports equipments ranked seventh. The products which women preferred are objects of contemplation and their rankings are as follows: photographs ranked second, graphic arts ranked third, sculpture ranked fourth, books ranked fifth, and plants ranked sixth (121).

3.5 Meanings Attached to Objects through Configurations of Color and Form

Csikszentmihalyi asserts that in our social environment objects do not create order in the viewer's mind by embodying principles of visual order; they create order by helping the viewer struggle for the ordering of his/her own experience (121). In other words, a person finds meaning in objects in which he/she finds the concrete symbols of the foremost goals he/she has, and finds symbols in objects indicating the most outstanding actions and events in his/her life. Thus, it has to be noted that a respond to an object's symbolic quality, as like or dislike does not evoke because of the purely perception of organization of patterns in mind.

Psychological theories of aesthetics like Berlyne's model (1971) are moderately useful in explaining simple aesthetic choices. This theory suggests that "a person is attracted to visual stimuli that produce an optimal arousal of the nervous system - stimuli that are neither extremely redundant nor entirely chaotic. Explicitly, optimal arousal results from a design that has a basic pattern or order, but with enough variation to require an active perceptual struggle on the part of the viewer to recognize and maintain the pattern (124). What is meant by 'Enough variation'refers to ambiguous objects. Thus, it is assumed that an ambiguous object will produce greater arousal than a less ambiguous one, where the reduction in the novelty of an object with increasing familiarity will decrease arousal (Corzier, 62).

In this sense Berlyner's theory consists of two elements; complexity and familiarity. According to Corzier if an object is complex in a moderate level, and has uncertainty to some degree but still can be predictable, it is also associated as pleasing (65). On the other hand, it is predicted by theory that people will most like objects and places that are moderately familiar and will be more averse to the novel and the over familiar (67).

As noted previously, reaction given to objects are not direct natural responses to color and form as concrete patterns, rather they are responses to meanings attached to configurations of color and form (Csikszentmihalyi, 125). Concerning an object's inherent qualities being not sufficient to trigger a response for the meaning identification Csikszentmihalyi gives the following example:

> What happens instead is that some people in a given culture agree that straight lines (or curved lines) are the best way to represent universal order. If they are

> convincing enough, everybody will feel a greater sense of harmony when they see straight lines (125).

Apparently, visual data which we tend to deem as valuable are created only collectively. Collectively built consensus on the public taste as visual qualities are indeed the visual values of the public that are related to the norms that regulate our life (Csikszentmihalyi, 125). Hence in this sense design object will be a visual statement bearing the unanimous norms and statements of the public, or a subset of the public. Accordingly, objects inducing meaning in everyday life often uses trite symbols—kitsch rather than originality(126).

3.6 Gender and Product Advertising

In her paper "On Gender and Things", which describes the findings of the exhibition organised in Netherlands and Norway, Oudshoorn asks the question, 'Do Artefacts have Gender?' (Oudshoorn, 471). Presumably, the answer to the question as she gives is 'yes'. Since the products cannot abandon their sign qualities inevitably it would be impossible for the products not to carry gender information as parts and elements of communication of social domain. As Lunt and Livingstone depict, goods do not simply reveal social relations; they are also participants in social relations. And they continue:

> For example, while the computer means only what we, as a society, give it to mean, from the point of people's response to or use of the computer, it arrives as a given, with a specific history, 'personality', even a masculine gender, and it is

> by accepting or negotiating with this given meaning that people appropriate such an object into their everyday lives (Lunt and Livingston, 60).

There are a number of factors that determine a product's gender identity. Firstly, it must be decided to which segment of the market the product will be aiming at. Since gender is socially and culturally constructed, a general market segment may be male or female consumers. Once the general segment is chosen, it can be narrowed down to specific targets. One way to do this is to divide the general segment by the criteria of the lifestyle of the consumer, such as the general segment of women as "young, upscale, working single, or married with children" (Winship, 31) or the "shy, negative, timid, indecisive" women who are "married with children, no longer young, (and has) a part time job" (31). The presumed emotions, values and beliefs of the consumer in accordance with the lifestyle will also be a factor of consideration. In fact, such assumptions formulate the modern stereotypes of gender and these are used as a basis to promote products.

Once it is decided to whom the manufacturer wants to sell the product, an appropriate advertising campaign is prepared to specifically attract the target in mind. When a product is aiming at a certain gender, it can be easily assumed that the advertising campaign will usually employ gendered messages.

The stereotypical images of women can still be clearly viewed in advertising today though maybe not as frequently as in the past. Nigel Whitely notes that women are usually depicted as mothers, cleaners, cooks, or beautiful appendages (Whitely, 137). He further adds:

They represent the general carer or dutiful servant who maintains order so that others (men and children) can get on with their lives; the provider of sustenance and primary needs; or the sex object who underlines a man's status, power or attractiveness. Women in advertising act as if the latest washing powder, floor cleaner or deodorant is the ultimate answer to their existential problems on the Planet Earth. (137)

Figure 3.1. "Simoniz Floor Wax" advertisement published in *Family Circle,* 1948.
Stereotypical example of a housewife demonstrating a cleaning product.
http://www.adflip.com

Daniel Pope agrees with Whitely on the reoccurring themes and stereotypes of women in advertising and gives similar examples such as the housewife ecstatic over a new cleaning product (Figure 3.1.); the anxious woman fearing the loss of youthful attractiveness (Figure 3.2.); the subservient spouse dependent on her assertive husband; and the object of men's sexual gaze and desire.

At this point we must mention one of the most important and effective foundation of motivating consumption, sex or sexual appeal (Fırat, 205).

Figure 3.2. "Does Your Husband Look Younger Than You Do?" Dorothy Gray Salon advertisement published in the *New York Herald Tribune,* 1951**.** Stereotypical example of "the anxious woman fearing the loss of her attractiveness". The advertisement title read, "Does Your Husband Look Younger than You do?" Offering a collegen cream, "to side step the tragedy of middle years", the advertisement promises "a fresher, radiantly confident younger look." The "Happy results" of the product is revealed together of an embracing happy couple in contrast to the main picture of the anxious woman.
http://scriptorium.lib.duke.edus

Advertisements of products targeted at men or women with the promise that upon consumption of the product, the user will be favored and found more attractive by the opposite sex was and still is one of the most common advertising strategies. Examples of this can be found both in products targeted at men such as

cars, motorcycles, and clothes (Figure 3.3.), as well as those targeted at women, such as cosmetic and personal care items (Figure 3.4.).

In "Gender and Consumption" Fırat brings to attention Bauldrillard's suggestion that the female, representing the feminine, has the power of seduction as the object of desire (222). The feminine has been objectified over and over in advertising to suit masculine desires. Images of women in products advertised to men do not only come in the form of promising that those using the product will be found more attractive by women.

Figure 3.3 To the left, advertisement of **"Ducati 916"** motorcycle published in *Car,* 1997. The print on top reads "CARL FOGARTY. LUCKY MAN." Carl Fogarty is a well know motorsports-pilot. http://www.adflip.com To the right, advertisement for "**Angels Flight Fashions"** published in *National Lampoon,* 1978. The advertisement reads as, "Ladies' Choice. Women can't keep their eyes – and their hands – off of guys who wear Angels Flight™. Small wonder. Nothing in years has made men look as good. The fit is so snug and provocative – it's downright sinful. The feeling is positively sensual. The silhouette started the discolook. The material is dressy gabardine – a welcome relief from jeans, but at about the same price. So give yourself a competitive edge – get into Angel Flight™ pants, vests, and blazers." http://www.adflip.com

Figure.3.4. "A Skin You Love to Touch" which advertises Woodbury's Facial Soap published in *Ladies Home Journal* for May, 1911. Several historians of advertising have called the "Skin YouLove to Touch" campaign the first to use sex appeal in modern advertising. http://historyproject.ucdavis.edu

Women's sexuality is also used to attract attention, to turn heads towards the products, keeping in mind that male consumers might be seduced by the image of the women to buy the product (Figure 3.5.). Forming an equation with a product and a woman as in the case of a car advertisement (Figure 3.6.) where we see a fiat convertible, a woman in a bikini with her back turned to us, and the bold print, "The second best shape in Italy".

Figure 3.5. An advertisement of a car motor block by **BAP/GEON** published in *Car and Driver*, 1977. The advertisement encourages car owners to modify their car. This is a typical advertisement targeted at male users with promises of excess performance, power, and speed. The women in the advertisement is objectified to attract attention as to equate the product with an object of desire or to suggest that the powerful new modification to one's car will display the user as a man desirable by women. http://www.adflip.com

Figure 3.6. "The Second Best Shape in Italy" advertisement for Fiat Spyder published in *Road and Track,* Oct. 1964. The caption reads "The second best shape in Italy", obviously referring to the woman in the forefront as the first "best shape". A typical car advertisement using the image of a woman, in this case one in a bikini whose back is turned to the viewer thus concealing her face and bringing attention to her body. Once again the image sends the

message that the owner of the car will attract pretty women and through the woman in the advertisement portrays the car as an object of desire.
http://www.adflip.com

3.7 Gendered by Design

Gender is imprinted on objects with advertising, associations through the gendered division of labour and gender symbols. In this section examples of how gender is imprinted on technical objects through design will be given.

In *Design for Society* Nigel Whitely notes that any shop or catalogue with a range of product lines will almost certainly offer 'feminine' versions of a product. "Mugs with delicate pictures of flowers or sentimentalized cuddly animals, and casserole dishes and saucepans with romantic images of nature in contrived patters or vistas, are all aimed at the conventional 'feminine' woman" (Whitely, 138). The "blue for boy, pink for girls" gender distinction in childhood evolves and varies in adulthood where many gendered objects give away these clues through black, grey, and military green for men and light pastel colour for women.

In "On Gender and Things" Nelly Oudshoorn and her colleagues describe an exhibition in the Netherlands and Norway where technological objects inscribed with gender were displayed. Through their study, Oudshoorn and her associates conclude that the designer and the consumer are of equal importance in shaping the gendering of artefacts:

> Designers are important by shaping the initial forms, functions and meanings of objects. Users, by their different way of interpreting, using, talking about and

> technologies further contribute to their social shaping. They define whether they experience things as gendered and whether they find them useful in articulating and performing their (gender) identities. (471)

Two examples of products used by Oudshoorn et al. will be given to reflect how technological products are gendered through their design. The products we will be discussing are men's and women's electric shaver and the microwave.

3.7.1 Male and Female Electric/Battery Operated Shavers

Whitely notes that personal technological products utilize form and color to denote femininity or difference (Whitely, 138). Women's electrical/battery operated shaver, relatively new in comparison to its male prototype, is one of such products that Whitely refers to. Without referring to any specific brand, Whitely reveals that, "Male shavers are almost invariably 'masculine': Matt black and/or silver, sometimes with red line highlighting like a sports car; monolithic and chunky; and sometimes with a 'rugged' texture, supposedly to improve handling" (138). On the other hand the female electric shavers are gendered through their color and form. Female shavers usually come in the colors of white symbolizing purity or hygiene and added pastel colors for fashionability; their form is less monolithic, more curved and more 'elegant' compared with their male counterparts. Thus, the male electric shavers signify masculinity through signs of technology and powerfulness, while the female shaver connotes hygiene, prettiness and fashionability so as to signify femininity (Whitely, 138).

In addition to this, apart from the different coarseness of body hair and different location, shaving is a common activity for both sexes. However, Whitely further asserts that the extra power that the male shaver needs for facial hair would not damage the female skin, and the ergonomic differences of design resulting from body location are minor (some female shavers are ergonomically identical to male shavers) (138).

Figure 3.7. On the left, the **Philips HP6443 Satinelle** women's epilator. Right under the brand name, we see the word "beauty" implying that the device is a tool to become beautiful. We also see the phrase "super sensitive" implying that it is suitable for the 'sensitive' skin of women. The pastel pink and white color and the curved shape are in accordance with gendered views. http://www.tiscali.co.uk On the right, **Philishave HQ5846 Reflex Action** male shaver. In comparison with the women epilator's single button, there is a lighted indicator as well as a button. The midnight blue color and the shape of the device comply with typical views concerning the masculine gender.
http://www.electricsavers.co.uk

In their exhibition Oudshoorn et al. used electric shavers by Philips to indicate the differences in design for men and women. Supporting Whitely, Oudshoorn also notes that although both shavers are made for the same use (to remove hair), the design and possibilities for use are very different, as evident in

the ladyshave's rounded shape and pastel colors, in contrast to the philishave's right-angle and dark colours. Apart form the colors and shapes, the interface of the products also differ:

> The philishave has buttons with inscriptions such as ''charge control'', a digital display of functions, and can be recharged in any wall socket. The ladyshave has only two pictograms displaying its functions and can only be recharged in its bulky, stationary holder. (Oudshoorn et al, 475)

Another difference that is referred to is the usability of the products. According to Oudshoorn the battery system of the philishave enables the user to take it with him wherever he goes, whereas the ladyshave is designed to be recharged in the bathroom at home (475). The final visible difference is that the philishave usually has visible screws, whereas the screws of the ladyshave are hidden. Moreover, the packaging of the shavers emphasizes all these differences: The packaging of the philishave shows gadgets and the packaging of the ladyshave shows functions.

These difference say a lot of what the designer thinks of the female and male users respectively:

> Women are represented as users who prefer pastel shades and round shapes, don't want to tinker with technological objects; don't like gadgets and prefer to stay at home. In contrast, men are represented as users who prefer dark colors and right-angled shapes; like to tinker with technological objects, love gadgets, and have a mobile life style (475).

Another important point to be considered concerning the gendered design is presence of visible screws on the philishave and the lack of them on the lady shave. According to Oudshoorn the shavers attribute technical competence to men and not to women; enabling the male user to open the shaver to repair or clean. These gender difference suggest that objects specifically designed for, men or women are likely to become subjected to stereotypical attributes of gender (476)

3.7.2 Microwaves

One of the most cited artifacts concerning gender and technology is the microwave. The microwave owes this attention to the fact that during its life it changed gender in terms of design, function, the place it was sold, and the target aimed at.

At first the microwave was sold alongside stereo equipment and video records in brown goods stores (Oudshoorn, 476). It was designed to heat food and its display and instructions suggested that it was a very complicated and high-tech (476). As can be imagined, it was targeted at young and active men who did not want to spend time for cooking (476). When the microwave did not sell as expected, the manufactures decided to change its gender. Pictograms were used to display how it could be used, the functions of grilling and roasting were added, and was sold in white goods stores along with refrigerators, washing machines, and stoves (476). It was asserted that it was the perfect cooking instrument for women (476).

The story of the microwave and how it changed considerably when it was decided to be targeted at women gives another example of the cultural and social view of gender integrated into the design of the object, as well as the marketing strategies. In this case, men are represented as individuals that do not like cooking, who are attracted to high tech instruments as being technologically competent (Oudshoorn, 476). Women, on the other hand, are represented as users who prefer to cook meals and who don't like apparatus with a high-tech image. Oudshoorn adds that the microwave also distributes different competencies and tasks to women and men:

> Men should not prepare meals from scratch and should be very efficient in managing their time. Women are expected to be responsible for providing healthy and nutritious meals and are supposed to spend energy and time in mastering a new cooking instrument: the use of the micro-wave required learning new cooking skills and mastering new recipes (477).

As noted in the first few sections of the third chapter, technology and social life are in constant interaction, effecting each other and becoming inseperable. From this respect personal possessions also become an integral part of this interaction. As seen in the advertisement examples, female and male stereotypes are effective in assignment of a gender image to the product through the ad so as to attract the desired user. However, in many cases products already have a gender image in the minds of people with respect to the area of use and functions. Though configurations of form and colour during the design process by the use of gender traits may deem an object more masculine or more feminine, the initial social images of products based on conventional gender attributes, as in

the case of kitchen tools recalled as feminine products and power tools as masculine products, take presendence in the processes of identifying an object as masculine or feminine. The failure of the microwave to attract male users as originally intended, though its form coincided with what a male user was expected to like through the use of masculine attributes, is one such example of how effective social norms can be.

CHAPTER 4

DESIGNING AS A SOCIAL ACTIVITY

4.1 Discussions On Design Definitions: How Creativity Proceeds

In this chapter, considering the fact that "gender typing a product" is imposing meaning upon products within the constraints of social domain, which makes the industrial objects a definitive interface, the systems which make this procedure come about will be explained.

As a matter of fact, there are few findings and research in the literature about the role of design in giving the ideal form to a product so that the product is perceived as a form designed for an intended purpose and with a target meaning. What has been truely set clear through the literature survey about design as an act, is its social and intuitive nature in the process of form giving or identity up-loading to a product rather than it being a scientific process. The lack of scientific evidence about giving shapes or contributing to the meaning of shapes has directed the study to cognitive information processing, that is, "design" as an act at this level can be regarded as the outcome of the former processed information. At this point the definitions of "design" should be discussed.

When the definitions of design are examined we are confronted with what design does in the end without the knowledge of how it does it. John Walker explains the act of designing as:

> Industrial design is a process of creation, invention and definition separated from the means of production, involving an eventual synthesis of contributory and often conflicting factors into a concept of three dimensional form, and its material reality capable of multiple reproduction by mechanical means. (28)

As it can be seen from the definition of John Walker, it is the big picture that is drawn oftenly. The critical terms which are *creation, invention and definition* are not widely explored. Since the objective of this study is about how meanings and definitions are contributed to objects, then it becomes critical for the terms like *creation, invention and definition* to be clearly defined. However, the mechanisms of creation and projecting meanings onto objects are usually not explained and left blurred in such design definitions.

Another definition made by F. Mercer depicts the industrial designer as:

> ...is a technical specialist in visual appeal is retained by a manufacturer with one object only: to increase the demand for his products through their increased attractiveness to the consumer. He is paid by the manufacturer according to his success in achieving that object. The industrial designer stands or falls upon his ability to create and maintain profitable trade. He is first and foremost an industrial technician and not primarily an educator of public taste. Under existing conditions his business must be to make profits his employers. (Walker, 28)

When analysed, this second definition is more explanatory than the previous one for the fact that the borders of the work environment are drawn roughly. Unlike the first statement, the terms of creativity and definitiveness are

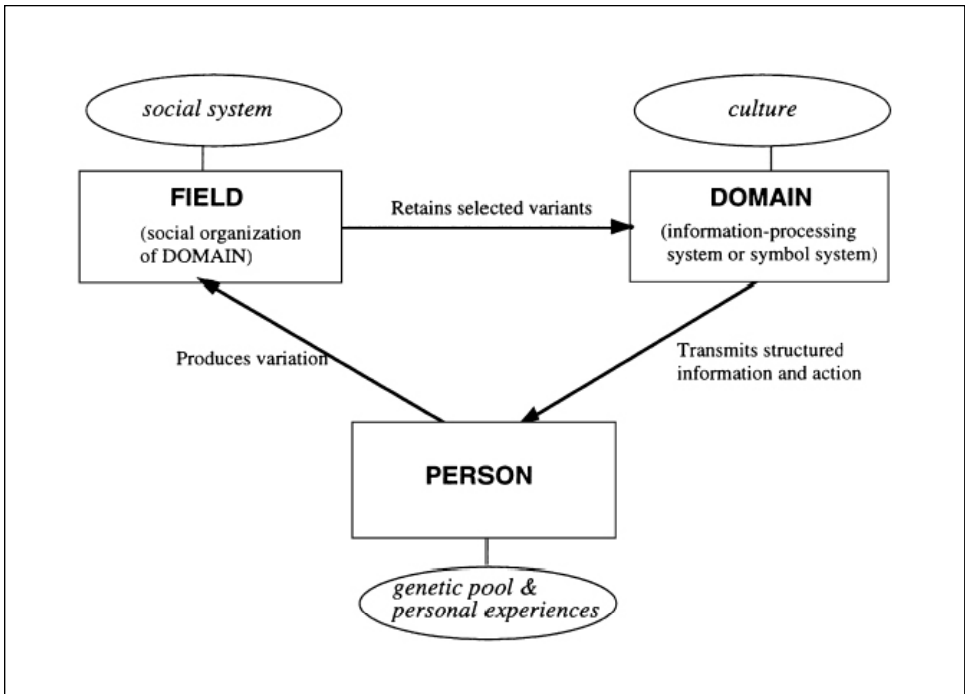
not solely used. In addition to the designer's profession of being "*a specialist in visual appeal*", the phrase *"under existing conditions"* is used, which gives us second thoughts about the issue of creativity and invention. These terms may mislead the information about design and the nature of the act. As a matter of fact, rather than being always novel, design is re-interpreting, re-organising the existing information. So that "*eventual synthesis of contributory and often conflicting factors"* can be calculated and "*profit*" can be guaranteed with the "*increased attractiveness to the consumer*".

4.2 Creativity: Cognitive Re-Organising

The issue of creativity should be discussed, so that the process of how a designed product is made meaningful in terms of its form and function can be explained. Vasilije Kokotovich in his article of "Mental Synthesis and Creativity in Design: An Experimental Examination" tries to reveal the issues of creativity. Citing B. Lawson, he denotes that, "Design involves a highly organized mental process capable of manipulating many kinds of information, blending all into a coherent set of ideas and finally generating some realization of those ideas"(437). Kokotovich interprets this statement as, 'manipulating and synthesizing abstract ideas, concepts, or knowledge to create a design proposal, as manipulating and synthesizing forms to create a new form, or both'.

Similar to what Kokotovich depicted previously, Csikszentmihalyi defines a dynamic framework composed of three major elements made of the *person, field and domain*. According to Yu-Tung Liu, these three systems jointly determine the occurrence of a creative idea, object, or action (262). He states that, the

information provided by the public is taken by the individual to be transformed, if the change is deemed valuable by society, it will be included in the domain, thus providing a new starting point for the next generation of persons. Therefore, the designer is the person who is responsible of being aware of his/her material and social environment, having the capability to collect fair amount of data and to adapt them to procedures and projects. Hence, creativity, novelty, and invention like proceedings are available and valuable within the constraints of social



domain.

Figure 4.1 Dynamic Frame Work Of Creativity Csikszentmihalyi (Yu-Tung Liu, 265)

Hereby, we can look at the aspect of "designing" as a cognitive action. Elzbieta Kazbierczak, similar to Csikszentmihalyi's advance, approaches design as a semiotic phenomenon, dependent on cognitive and developmental processes, and which coexists with cultural codifications compromising collective and individual environments (45). Denzin demonstrates that, first human beings act

toward things on the basis of the meanings that things have for them; second, that the meaning of things arise out of the process of social interaction; and third, that meanings are modified through an interpretive process which involves self-reflective individuals symbolically interacting with one another (xiv). So according to Kazbierczak, design is the activity that directs the process, and enables the correspondence between intended, constructed, and received or re-constructed meaning (45). In the light of previous statements design objects are reconsidered from finite fixed objects of aesthetics within their practical nature to semiotic interfaces enabling the reconstruction of meaning by receivers. In Kazbierczak's paper the "fixation of designs on aesthetic justification" has been rejected. Thus the objects are regarded as entities having semiotic functions of cognitive interfaces proposing that all designs must be considered as "diagrams of mental maps of individual and collective cultures". Accordingly, regarding the objects of design as conveyors of considerable amount of information and data simulating the structure of cultural and individual domains, then it would not be wrong to take Kazbierczak's definition of 'what a designer does' as an enlightening definition to clarify the matter:

> The designer's role is to provide the form needed to make a pre-defined content/information/data/meaning, perceptually accessible in other words, to translate from one form to another. (46)

Consequently, design of a form and content cannot be thought of separately. Designers are not merely form providers. Like the form, designers cannot escape the content provided intuitively by social, cultural, and biological

domains. Thus, content, accessible data, or perceived information that the design provides is the basic source for the justification of the end product. From another point of view, when design is conceived as an interface for meaning making, "*meaning represents the thought induced in the receiver, which is originated by the contact with design*" (47). Kazbierczak explains this eventual situation:

> When the receiver faces a reasoning task, such as the reconstruction of a meaning of a design, she/he organises—consciously or not—the physical patterns into patterns of relations. So it is in the patterns of relations or in "gestalts," that the receiver finds the meaning, and not in individual signs for and in themselves. (47)

4.3 Artifacts Deploying Meaning: Constituting the Mind Library

Cupchik, explains the types of meanings attached to industrial objects as *sensory/aesthetic, cognitive/behavioural,* and *personal/symbolic* (75). His view point is that, these types of meaning implications integrate the structural, functional, and ergonomic functions of tools with user expectations and knowledge (75). According to Cupchik, the behavioural component relates to performance and ease of use of the designed object. Secondly, sensory information provides object identification (76). And finally, personal/symbolic features relate to self concept and dynamic processes affecting both a person's motivation for engaging an industrial design object and also how it is seen (76). In addition to their relation with self concept, personal/symbolic features of objects may compensate for an unconsciously felt inadequacy, which are stimulated as a

result of social values and norms, for example, about appropriate masculine or feminine styles.

For Cupchick, another view for the design object, is its nature of being created for practical usages as a tool. Consequently, the design process is governed first and foremost by goal orientation (Cupchik, 79). The object is created for a certain purpose in everyday life, which is contained in its design. Once its idealized conception and its design and purpose matches its structure and function, the object then is regarded as successful. In accordance with the designer's approach, the user similarly tries to set about a match between a mental model of how to use the object and the actual experiences with it. The second process Cupchik outlines, is the cognitive operation about the creator or the user's overall image of the object and how it is perceived and interpreted (79). Giving the example of short stories and novels he depicts that the designer can lead the user along by suggesting certain images. It is also noted that, since the range of personal meanings can be quite broad, there is always the possibility for indetermincies in the interpreting process to occur, for individuals can differentially attend to sensory qualities of the design object where they may attach diverse personal meanings onto it. Thus, he suggests the designer to have in mind the needs and expectations of the target population. In addition to the focus of industrial design on structure and function of the object, to stimulate the cognitive/behavioural skills in the user are also requisites. Associated with the outset he states that:

> The skilled designer has in mind a library of accessible images and ideas of which the new object is a transformation, incorporating new features in an original expressive way. (Cupchik, 79)

Stacey and Eckert, who have prepared a study on knitwear design and design cognition assert that: "almost all design proceeds by transforming, combining, and adapting elements of previous designs, as well as elements and aspects of other objects, images and phenomena (524). According to their explanatory research, designers use a variety of types of source: comparable designs, other types of designs, images and works of art, and objects and phenomena from nature and every day life. The heading of the article "Sources of Inspiration" is being connected at two functions, first is they define the context in which new designs are created. It is the challenge of selecting the location within the envelope of each product that would fit the customer's self image, or to create distinctive products by stretching the envelope without breaking it.

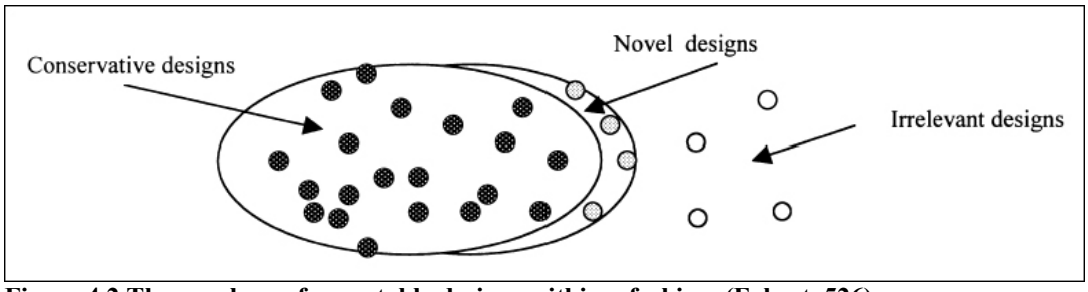


Figure 4.2 The envelope of acceptable designs within a fashion. (Eckert, 526)

The second, is sources of inspiration or the mind library, informs the creation of new designs, which are adapted from one or more sources of inspiration. Complying that, designers employ a number of adaptation strategies,

in which the synthesis of a new design is either triggered by the source or the designers select a source based on a plan for their designs.

Citing Schon, Stacey and Eckert assert that, for many designers sketching is an essential part of creative design. And creation is driven by making and perceiving sketches. Hence design is depicted as an interactive conversation between mind and sketch (526). The rationale is that designers directly appreciate different types of information in their own sketches, alternating between seeing "*that*" and seeing "*as*". Also citing N. G. Cross and McFadzean, it is denoted that, ambiguity in sketches facilitates re-interpretation triggered by dissatisfaction with the current design (526). And in case of the active usage of mind library or the sources of inspiration in designing, similar to the interaction between mind and the sketch, these sources or images have the ambiguity important for triggering reinterpretations. Thus, adaptations are triggered by mismatches between visible or imagined design elements, and between designs and goals. Giving reference to Kossyln, they denote that, mental images and spatial representations are not bitmaps: they comprise organized structures of meaningful information: chunks. How well they are remembered depends on how meaningful the information is and on how richly it is structured. Designers who are very strong visualisers create and recall very complex visuospatial chunks (526).

Associated with chunks, recognizing similarities is an inherent part of visual perception and people group similar objects into categories (526). The visiospatial structures of individual items are encoded not just geometrically but in terms of category memberships and deviations from typical forms. Consequently as it is already put forward, designers develop both a stock of categories of designs and design elements with typical forms and ranges of

variations, and a stock of instances they can remember and refer to by where they came from (527*)*. These provide a vocabulary for their mental representations of new designs. The rationale raised in the article is that, individual designs provide a wide and open ended range of subtly differentiated concepts, accessible in memory but with no names other than references to their origins. The advantage which has been set is that, existing designs incorporate far more information than any designer can think about at once, and with stocks of remembered idealised artifact representations, enables them to use these combinations and imagine and reason about complex structures, by treating pre-existing chunks as units. Such outcomes as stated, inherit the structure and detail of their sources, so that small and simple sets of sources generate complexly structured designs, whose details are imported into consciousness as part of larger chunks, or can be generated at need (527). Thus complex forms as the author demonstares, do not need to be created or remembered, instead they can be re-constructed from the original chunks.

4.4 Characterization of Objects

After a successful usage of the mind library, one may then confront objects having characters, depicting the purpose of what they are for. In their essay, "The Character of Things", Janlert and Stolterman, explain projecting character to inanimate objects as a mental tool to handle a complex reality, stating that ascribing certain character may not be just the functional aspects of the artifact's behaviour, but as much its appearance and 'demeanor' (298). The principle traced is that, physical appearance sometimes reveals important

information about the inner structure and the way the artifact will behave. Accordingly, a designer, by manipulating the appearance, exploits dependencies between appearances and perceived character, and in return, may evoke certain emotions or induce certain beliefs in the user. Therefore the user accepts the possibility of having stable relations between certain appearances and certain characteristics. Of course, appearance and character are not just visual implements. Janlert and Stolterman state that; *"the sound of the car door and the car engine are parts of the car's appearance, as are the smell and feel of the upholstery."* Likewise the sound of the car door and the engine or the smell of the upholstery, *"the attribution of character to an artifact can also be based on its style of conduct, the way it moves, the way it performs its task, the way it reacts to your touch"* (299).

Janlert and Stolterman build an analogy between the designer and the director of an act in theatre:

> The director, as designer of the performance, will employ the physical appearance, as well as the behaviour of the actor (the way the actor moves, talks) in moulding the character. With the right kind of clues and cues the audience will form a deep and powerful, yet fairly simple manageable picture of the personage. A mass of information is thus condensed and focused that otherwise would be very difficult to transfer to the audience. The theatre makes frequent use of symbols that the audience should recognize and integrate into a rich and coherent character. However in drama, the point is not only to create characters easy to recognize; the purpose may be to expand and complicate already known characters to shake the attitudes of the audience and break down their preconceptions. (300)

The correspondence between theatre and design activity is also visible in car design area in which designers perform their tasks with a repertoire of symbols which will indicate certain things to the prospective buyer, which is a very delicate task. Janlert and Stolterman remark that the car designer who wants to convey the character of a smart, powerful and expensive sports car, has to be careful not to unintentionally introduce some symbols that might clash with the desired overall character. Some small detail usually associated with the traditional family car could spoil the character or the image the designer is striving to create (300).

According to Micheal Towey, who explicated designer's intuition in automotive industry, styling process is holistic. Emphasizing the organic or functional relation between parts and the whole, the designers are concerned with envisaging the overall design solution as a visual entity. At such an instance, they move from an initial unfocused concept to detailed design proposal. Thus their visual talents is to display the essential and changing formal vocabulary in automotive industry. At the first stages of the design process the designers employ an unfocused perception, in which the initial proceeding ends up with an undetailed, hazy figure. Later, the unfocused parts are brought into focus, so that the image is gradually made detailed. The hazy sketch is the proposal made by the designers to trigger their vocabulary. Accordingly these proposals are quickly and frequently changed to increase the possibility to find the correct visual stimuli. After the decision is made for the initial sketches, then the details are worked out. Hereby, it has to be explained that, a designer who is to convey a message through the product makes his/her brain work in two modes.

1. Verbal, analytic, and linear mode.

2. Synthetic, concrete, and holistic mode (Solution focused).

Tovey expands this way of design thinking in five aspects:

1. Designers tackle ill-defined problems.
2. Their mode of problem solving is solution focused (holistic).
3. Their mode of thinking is constructive.
4. They use codes which translate abstract requirements into concrete objects.
5. They use these codes to both read and write in object languages. (Tovey, 12)

Tovey asserts that appearance design problems are frequently ill-defined, not being describable in words. In advance, their approach is solution focused and constructive, which employ visual graphic languages with a combination of words and images to communicate. The in-house vocabulary used in automotive design industry often points out our everyday objects and shapes, *like slippery, exciting, fluid, soap bar, bath tub, tailored, sheer, razor look, taut, splined line, blitz line (zig-zag), whiplash line, Tiffany, sweep spear, windsplits, etc.* Tovey portrays the comments made for the VW Golf in the studio as; *a sphere trying to get out of a cube* (13). Thus, such vocabulary is neither technical nor far from the daily life we live in, they are the common objects and adjectives we all share and use to handle objects in order to characterize.

Janlert and Stolterman point out that, both theatre and car design rely on the idea that the audience or the buyers recognize a certain number of established, standard characters. The rationale is to start with a known character and then

expand or change that character into something new and different. Hence, with the advent of such moves our conception of characters keep changing; the repertoire of characters we recognize constantly evolves and the designers have to keep up with this development, since we always change and adapt our relations to people and artifacts by constantly redesigning their characters. From the user's point of view, in assigning a certain character to an artifact, the user makes a simple, but powerful description which will be usually accurate to him/her to manage the task of handling the artifact and to appreciate the consequences of the interactions with it(Janlert and Stolterman).

> A character is a unity of characteristics. That is, one character combines several characteristics, not as a simple collection, but with related characteristics integrated into a relatively coherent whole. (302)

4.4.1 Complete And Partial Characteristics

Janlert and Stolterman separate the character issue into two parts. The first of these is the "complete characteristics", which may be interpreted as the characteristics of the entities very close to the ideal and powerful as concepts. Such an attribute may be found in unique objects. The second is "partial characteristics". According to Janlert and Stolterman, partial characteristics cannot be used beyond their limited scope and if the scope is uncertain the outcome will also be generally uncertain. Since the "complete characteristics" are rarely found, a trade-off occurs between power (complete characteristics) and frequent partial characteristics. Besides they assert that in a design artifact to

strengthen the power of meaning intended to be deployed, usage of many characteristics, each of limited scope, would be counterproductive. Another point which has been remarked about the issue is that the cognitive power of a characteristic does not depend only on its comprehensiveness, but also on how much restriction it imposes on the objects it is applied to.

To give an example, the swing arm lamps designed to be used for technical purposes, nowadays are being produced in a delicate flair, with chrome plated surfaces and sleek details (Figure 6.1). Although they are as elegant as any prestigious object, with the aid of "springs" exposed on the construction arms it manifests the purpose of design. Hence, the appeal and the "spring" details restrict its environment for the object to be placed in. We can see that such a detail does not have much power in terms of comprehensiveness, however it ascribes "do's" and "do not's" in a general manner.

Figure 4.3: Swing arm lamp http://www.artstoreonline.com

Janlert and Stolterman outline the "complete characteristics" issue as providing soft expectations and predictions that are not very precise and detailed, whereas "partial characteristics" as making hard predictions and expectations, giving precise and detailed information, requiring greater cognitive effort, they are also narrower in scope (304). The swing arm lamp is an example of an artifact having "complete characteristics". Its manifestation comes from its unique

structure. However, in product categories like personal care, more specifically in products like razors etc, which have gender qualities, the characterisation method used is partial characteristics. The degree of hardness of the message given through the product are increased intentionally.

4.4.2 Context Dependency of Objects

Moreover as it is portrayed, the peculiar manifestation of a certain characteristic is content-dependent in at least there ways:

1- It depends on the type of action or property concerned.

2- It depends on the individual.

3- It depends on the situation. (Janlert and Stolterman, 304)

On the other hand, when cutting across different types of attributes, characteristics may also cross over different value systems. Particularly, they may apply to ethical, aesthetical, as well as technical aspects of an individual (304). More explicitly, a characteristic that is aggressive, used on a person or a car, may apply to the individual's mechanical behaviour, attributing technical values to it; the same characteristic may also apply to its social and moral relations to its surroundings, attributing ethical values to the individual; and it may simultaneously apply to its looks, attributing aesthetical values.

In its advertising campaign Audi, in 1995 and 1996, used a sexist and macho slogan verifying Janlert and Stolterman's normative description of how characteristics may cross over some other values. Audi's slogan was; "He has the car, he'll have the woman!" (Hetzel, 4). This slogan clearly defines that the owner

of the car and the car itself are power oriented figures. Having the car is presumed to change the owner's social attitudes, as well as adding the car's aesthetical values to its owner.

As it can be seen in this chapter, design activity makes use of certain images which are collectively found valuable and which denote collectively the same meaning. By usage of these images or clues both the designer and the user may interpret the meaning of product in the same manner. In the following chapter, a more detailed information of how we make use of certain images for certain purposes will be disccussed through the explanation of the categorization process.

CHAPTER 5

GENDERED PRODUCT CATEGORIZATIONS

5.1. Categorizing Objects

As a matter of fact, a product is an input to the mental world of the individual. As mentioned in the previous section, mental world within a culture, forms the basis of the individual's thought process through extensive childhood learning conformed to culturally accepted notions. It has to be remarked that this mental world does not comply a mirror image of the real world which the individual lives in; it rather deals with concepts in lexical terms (Athavankar, 1). Athavankar, gives the example of "telephone" as a new product which is recently introduced to the market, to explain the situation of recognizing, accepting and evaluating a product in the mental world. He depicts that, to recognize the item "telephone" is only possible when a concept of "telephone" has been already formed and labeled, then we are able to see a connection between the new input and this concept. It seems that specific, often visual clues in the new example trigger a mental search that inevitably activates a class of similar examples that we have coded, structured and labelled with a lexical term previously (2).

This solution based processing that takes place in the mind for accessing the meaning of the new input is called "categorization". As Athavankar suggests, it is a process of assimilating experiences in a more general form. Because our concern is design and visual evaluation of designed objects, it is essential here to

note that, typically seeing involves categorization. Thus some artefacts can be evaluated as belonging to male category and some other to female category.

Once the characterization of mental concepts about objects have been completed and the unique structure of these concepts have come along, then the categorization process generates the object's links with the primary object category. The point to be emphasized is that the categorization process is seen as a strategy leading to cognitive economy, which makes the individual handle reality more easily. Referring to Rosch, Athavankar explains that most object's perceptual and functional features occur in unique bundles which helps the individual to build clear correlations and classifications and offer predictability. With the assistance of these bundles clustered in the mind, even partial exposure to concepts, objects or qualities of objects is sufficient for us to guess their category. Hence, as suggested, the mind chooses the economical option of neglecting infinite differences between objects by treating non-identical objects as equivalent at two states:

1. these differences are irrelevant to human response
2. the behaviour and properties of the objects within the category remain predictable.

As it can be seen from the previous statements, higher order attributes of objects are validated in the mind. In other words, the mind associates information which is induced as atomic concepts to the higher order chunk (phrase) concepts. Such an association means that the lower order concept "is a constituent of" the higher order concept. Moreover, all of the concepts in a single proposition are

associated directly or indirectly to a single higher order atomic cluster that represents the entire proposition (Wickelgren).

5.2. Group Resemblance of Products Belonging to Male or Female Categories

To put it in terms of gender coded products, it can be said that, there is no relevant difference between a "food processor" and a "vase" or a "women's shoe" since all of the products are associated with females and being a constituent of female product category, each of them may re-call one and another. It has to be noted that associations are assumed to be unidirectional. For the purpose of the study, the higher order concept chunks which are assumed to contain gender coded products underneath the tree structure as their constituent clusters are masculinity and femininity. Since "maleness" and "femaleness" concepts constitute two categories in question, then the basis of study, industrially designed objects with regard to gender which are the components of each set, should likely to follow the attributes of male and female.

By referring to Figure 2.2 given in Chapter 2, at this point which type of products are matched with male and female categories can be emphasized. In a study conducted by Allison et al in 1980, aiming to assess the relationship of sex role self concept to masculine and feminine product perception, twenty-four product categories were used. In the test the first section of the questionnaire was to elicit the masculine image of the twenty-four product stimuli. Each product was presented with a nine point horizontal scale with the extremes labelled, "not at all masculine" and "extremely masculine" and the mid-point labelled "moderately masculine". The second part of the questionnaire obtained feminine perceptions of

the twenty-four stimuli by using the same type of scale. Reading down the list of products in Table 5.1, the products are arrayed in order of decreasing masculine perceptions and increasing overall feminine perceptions according to their mean values obtained from both male and female participants (Allison, 606).

Table 5.1.Summary Of One Way Analysis For Masculine And Feminine Product Image By Sex (Allison, 1980 Sex Typed Product Images… Advances in consumer research Pg:606)

PRODUCT	MASCULINE IMAGE MEAN	FEMININE IMAGE MEAN
Pocket Knife		
Males	7.33	1.72
Females	7.74	1.86
Tool Kit		
Males	7.50	1.95
Females	7.52	2.32
Shaving Cream		
Males	7.28	2.25
Females	7.27	2.53
Cuff Links		
Males	6.93	2.25
Females	7.35	2.98
Poker Chips		
Males	6.83	2.30
Females	6.80	2.39
Brief Case		
Males	6.49	2.30
Females	7.07	2.56
Mechanical Pencil		
Males	5.62	2.69
Females	5.38	3.07
Blue Jeans		
Males	5.81	4.29
Females	5.36	4.35
Tennis Shoes		
Males	5.59	3.94
Females	4.95	4.41
Nail Clippers		
Males	4.60	4.40
Females	5.08	3.65
Key ring		
Males	4.49	4.17
Females	4.50	4.44
Umbrella		
Males	4.59	4.79
Females	4.34	4.93
Mouthwash		
Males	4.07	4.30
Females	3.56	4.51
Fountain Pen		
Males	3.68	3.97
Females	3.23	3.96

Table 5.1 (Continued)

Sun glasses		
Males	4.90	5.03
Females	4.31	5.62
Sandals		
Males	4.73	4.92
Females	4.26	5.88
Gloves		
Males	4.10	5.50
Females	3.44	5.96
Bedroom Slippers		
Males	3.36	5.55
Females	3.38	6.17
Silk Shirt		
Males	3.67	6.63
Females	3.42	7.01
Hair Spray		
Males	2.84	6.70
Females	2.67	6.99
Hand Lotion		
Males	2.74	6.69
Females	2.48	7.11
Baby Oil		
Males	2.46	6.37
Females	2.12	6.68
Nylon Underwear		
Males	2.40	7.19
Females	2.16	7.85
Scarf		
Males	1.73	7.32
Females	1.71	7.53

Although the data evaluated is an old one, it still gives the common view of how individuals are oriented according to sex typed imagery of products and their own sex. With the data, it is emphasized that males are attributed with action oriented products having instrumental functions, while females are attributed with products of contemplation. On the other hand, the selection of product stimuli in the design of the test, also show how stereotypical the categorization process occurred for the researchers. Debevec, discussing the test carried out by Allison, argues that products may be sex typed based on the gender of the group most likely to use the product. In addition she states that cultural norms related to sex roles may dictate the types of products most appropriate for men and women to

use (Debevec, 211). Referring to Bem's study, in which individuals rated themselves on a series of masculine, feminine and neutral trait dimensions and were subsequently categorized as high masculine - low feminine (masculine orientation), high feminine - low masculine (feminine orientation), high masculine - high feminine (androgynous), and low masculine- low feminine (undifferentiated), Debevec suggests that if people could be classified along these dimensions based on their sex role orientation, products may be perceived along these dimensions as well (211). Debevec further suggests that a typology of products along gender dimensions which may provide insight into how classes of products may be characterized by exploring the roles men and women play in society, trait characteristics are commonly assigned to men and women in accordance with potential usage situations (211). For example "house-hold" cleaning products may be perceived as highly feminine because of women's traditional role as homemaker. Financial services may be considered as masculine because of men's perceived knowledge or expertise in handling financial matters and their traditional assumption of this role. High technology products may be perceived as masculine following similar logic (211). In a similar manner Dormer portrays the situation of remote controls as masculine. As Dormer states, they are essentially designed to save physical effort and time. However they are also considered fun to handle and also imply power. Dormer associates remote-control devices with objects that are essentially associated with men, such as the television, video recorder, automobile and the garage door. He draws attention to the fact that electronic kitchen tools such as the electric cooker, electric kettle, the dishwasher and the washing machine that are frequently and usually used by women do not have these devices. One basic arguable reason for this lack is that

these machines already need filling and loading, thus a remote-control device for these would be a minor bonus that is uneconomic to manufacture or buy. However, Dormer also asserts that as long as the general male notion that men's time is more valuable than women's persists, it is unlikely that remote-control devices will make their way into the kitchen. He also notes that remote control devices are a decadent waste of resources other than that they may be essential for the disabled and elderly, but these devices are rarely designed with these consumers in mind (Dormer, 35).

Apparently, it can be seen that, categorization of products starts with the product usage and to whom it is intended for. The user's gender identity and the way the user conducts the product, determines the product's gender identity in the first place. Related to the issue, Dormer puts forward critical points about washing machines with the fact that, engineers and designers have eased the woman's work with the washing machine, tumble dryer and lightweight electronic irons but the presence of the devices have also made housework a daily and constant task. Dormer quotes Adrian Forty, the author of *Objects of Desire*, and states that the styling of domestic appliances seek to deceive women in to spending more time than necessary on housework by persuading them that the work is noble because the tools of the work are beautiful. Another point of discussion is that the industrial and commercial equivalent of almost any household tool is always more powerful and efficient. In an effort to make things lighter and more 'feminine' domestic tools are frequently rather flimsy. This of course is an outcome of the reality that many people would not prefer to live in an atmosphere that resembles their work places. Thus the ruggedness and efficiency of factory and commercial tools are sacrificed in the domestic environment for the sake of more pleasing

designs (Dormer,36) Thus, starting with the product usage and product's capabilities, product appearances come about to be stereotyped, complying with the social norms and values, consequently product categories' overall image becomes part of the social norms and values.

Returning back to the "categorization" topic, referring to Wittgenstein 1979, Athavankar, points out the difficulties in the shared features within item groups. However, Wittgenstein proposes that, the members within a category are united on the basis of family resemblance rather than a common shared property. He also suggested that it is essential for the members of a category to be linked together, but these links need not be a common property shared by every member within the category (Athavankar, d6). This may explain, the attitude of Peter Dormer about "remote controls", "washing machine" and why some products are connotated with males and why some products are connotated with females. More explicitly, in the case of gender typed artefacts, the ways of conduct, the user groups who facilitate the product and the product's capabilities create a family resemblance along the products as "male" or "female".

5.3 Prototype Categorization

When a single line of product is considered, comparison of potential members with a well characterized central member creates prototype effects within the category (Athavankar, d7). Then as Athavankar states, other members are evaluated on the basis of their 'closeness' to the central member, giving these members a 'goodness rating' or a 'degree of legitimacy'. However, this grading system takes place in two accounts going along separately; "real world - product

hardware layer", "mental world - communication layer." Athavankar suggests, a designer is to satisfy specific expectations of the real world through the physical shape and features of a product belonging to the hardware layer. Whereas, the second layer independent from the first one is associated with the abstract property of that product. When a product, whether new or not, satisfies the needs of the real world, it may automatically lead to an expression of that product(Athavankar,d8). It has to be noted that, being partially interdependent, mental concepts are influenced by the objects and activities of the real world but are not dictated by it.

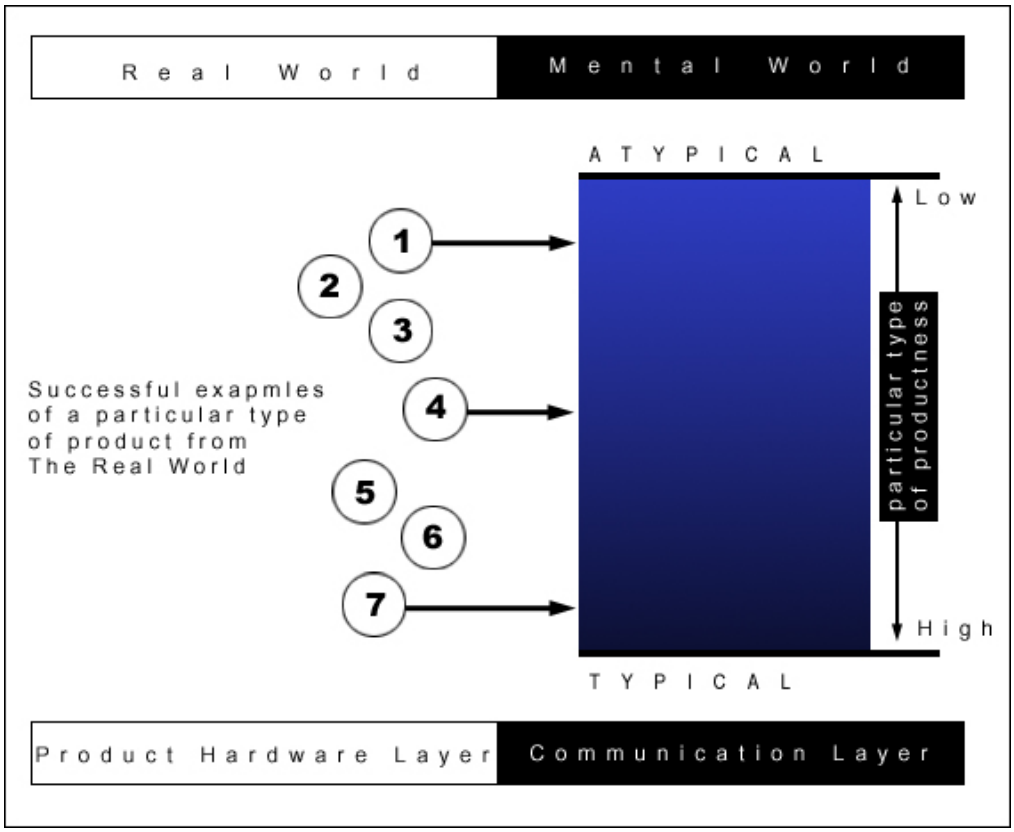


Figure 5.1 Illustrates Real World and Mental World Processing (Athavankar Modified , 7).

As illustrated above by Athavankar but revised for the sake of this study, in product categories, the degree of legitimacy for a particular type of product is demonstrated in the way visual features and clues vary along the linear scale, as do the products. Emphasized by Athavankar, considering the product form as a set of behavioural and perceptual visual clues, the central member will be selected by the presence of the frequent visual clues that portray the essence of the particular concept. In Figure 5.1, the central member is defined with the circle with number seven close to the lower 'typical' end in the graded area. According to Athavankar, these clues that are carried by the object are semantic devices that specify the concept of the core meaning (Athavankar, d8). The rationale of the scale asserts that, objects carrying visual clues and behaviour along the graded area and away from the core appear to be semantically less effecting in category membership. In Figure 5.1 this is indicated by circles with number 1 close to the upper end 'atypical'.

When the graded area on the right hand side of Figure 5.1 is considered solely, it refers to the semantic space associated in mind with the central member. The boundary of the space is drawn by the semantic profile of the non central extension along the gradation. Athavankar, splits the semantic space into three degrees interdependently as; most frequent clues, less frequent clues and the clues that are potentially legitimate for the category. As it is proposed, an object with 'most frequent' semantic clues would bring the form closer to the central member. However, an object with less frequent semantic clues, would stay avantgarde with respect to the central member of the category. Since the clues that are bestowed by the avantgarde object are not generated and are not deviated following a rule from the central member, clues must be learned independently, that is to say, the

product and its visual values will not be associated with the product category. This is what happened to scooters when they were first introduced to the motorcycle market.

5.3.1. The Atypicality of the Vespa With Respect to the Prototype, Motorcycle

In *Hiding In The Light* (1988) Hebdige discusses the 'scooters' alienation beginning from 1946 with the invention of Vespa.

> The scooter was originally conceived as a small-scale project which was intended to make maximum usage of available plant, materials and design expertise and to fill a gap in the market, supplying the demand on the part of consumers deprived during the war years of visually attractive, inexpensive luxury goods, for a cheap, stylish form of transport capable of negotiating Italy's war-damaged roads (Hebdige,88).

Embodying many qualities from aircraft design Vespa was introduced to market as an alternative transport. As the designer D'Ascanio was formerly specialised in helicopter design, technologies like the air cooled engine, stressed skin framework had been applied to a two wheeled transport for the first time. Another novel idea applied by D'Ascanio, inspired by aeroplane landing gear was, mounting the wheels on stub-axels rather than forks as they were in motorcycle construction. This application made the wheels easier to detach and easier to repair than motorcycle wheels. On the other hand, the most noble quality and departure from the conventional motorcycle was the spot-welded, sheet metal

frame concealing behind the two stroke engine. Platform frame was attached to central spine and extended upwards almost to the handle bars providing foot support and protection from weather. Another point is that, the two stroke engine which was mounted over the rear wheel, was chosen for its simplicity, that it was establishing the driving process to a basic set of operations. So that it could be quickly assimilated by novice drivers or people with no experience in driving a motorcycle at all.

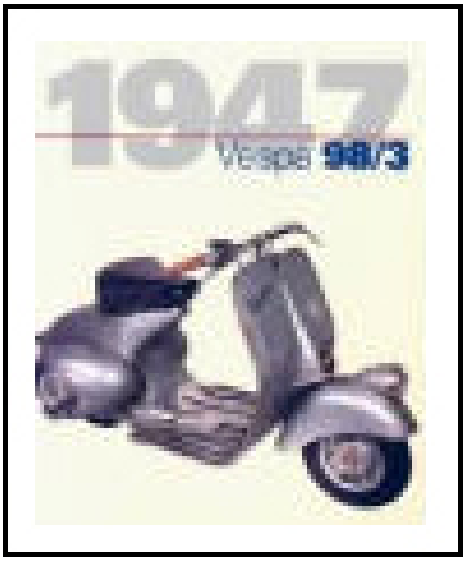


Figure 5.2 Vespa 1947

Hebdige, states that the design was apparently assigning privilege to the rider with its comfort, convenience and vanity (89). As a matter of fact the enveloping of machine parts freed the scooterist while riding the scooter, in addition the scooterist was no more obliged to wear protective clothes like the motorcyclist does. When this distinctive streamlined design began to show off in design circles, although the novel styling was found suitable inevitably it had been criticized. The points of criticisms were the soft suspensions and the instability at high speed caused by the eight inch wheels. Then one of the founder members

Piaggio argued that: the machine was designed as a small gadabout vehicle suitable for travelling short distances at low speeds (89).

> In other words, the Vespa was to be presented to the public not as a poor relation of the motorcycle but as the principal term in a new product category, as a machine in its own right, with its own singular qualities, its own attractions and its own public. (89)

With the panels enclosing the engine, needing less maintenance even being without gear controls, Vespas and other Italian scooters began to threaten the supremacy of the British motorcycle industry in the 1950's and 1960s it was seen as intruder to masculine culture of the road (89). The technical attributes and the overall image of the vehicle as Hebdige asserts created the formula, motorcycles:scooters as men:women and children (84). Referring to what Barthes has called the 'bestiary of power' Hebdige, equates motorcycles with masculinity and machismo. And he states that "Once it has been sexed, the machine functions as a material sign of (realises) imagined gender differences: mechanical sexism."

Just like in the scooter-motorcycle case objects may split into two opposed aspects as his and hers. His refers to functional, scientific, useful. On the other hand hers refers to decorative, aesthetic, gratifying. Besides, the distinction complies with the separation of design functions as his/engineering and hers/styling where engineering is perceived as superordinate and necessary styling as secondary and styling as secondary and gratuitous (84). Predictably, the user groups which are assigned to motorcycle and scooter also had been split into two:

> The motor cycle boys accepted the motor bike and allowed it to reverberate right through into the world of human concourse. The lack of the helmet allowed long hair to blow freely back in the wind, and this, with the studded and ornamented jackets, and aggressive style of riding, gave the motorbike boys a fearsome look which amplified the wildness, noise, surprise and intimidation of the motorbike. The motorbikes themselves were modified to accentuate these features. The high cattlehorn handlebars, the chromium plated mudgards gave the bikes an exaggerated look of fierce power (84).

Referring back to prototypical categorization process working interdependently in the 'Hardware-Layer/Real-World' and in the 'Communications-Layer/Mental-World' as Athavankar illustrated before, the unique structure of scooter which totally opposes the overall image of its counterpart motorcycles, forces the product to go along the semantic space upwards near the atypical. In other words, because there was no match in the mental world for the scooter's image, the scooter has been pushed to form its own category as it was not constituted of relevant semantic clues so as the social domain rejected its presence in the motorcycle category. As a matter of fact, the motorcycle was the norm for the two wheeled engine powered vehicles, under the domain of males. Thus the stylistic and structural features of the scooter require a new type of user having considerably less interest in machinery and maintenance and even the rugged look of machines. In a way the product and its user was effeminated and pushed to female product category with the drive of social domain. Figure 5.3 demonstrates the revised version of Athavankar's chart for scooters accessing through 'Hardware-Layer/Real-World' and 'Communications-Layer/Mental-World'.

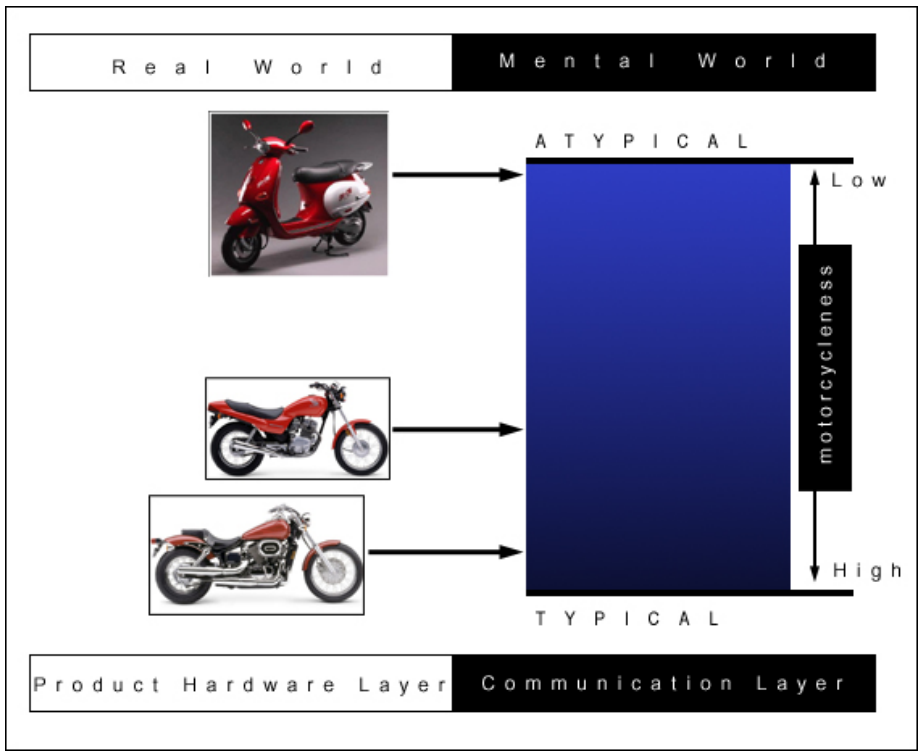


Figure 5.3 revised Version Of The Real World Mental World Processing

As it is discussed above, categorical representations by typical case or ideal case depends on the kind of relationship that people have with that category. Referring to Rao, Athavankar prompts that personal and family products are psychologically close to the users, for which they are often used to symbolically express socio cultural identity and social class. Therefore, in personal and family products to eliminate cultural pressures, individuals are tempted to be influenced by typical and ideal cases. Thus, engaging with products having unanimous qualities also reinforces the user's relations with the category which they want to be included in. In return, every individual either being in male or female category, metonymically may represent other members included in their category. In a general manner, just like it had happened as in the case of Vespa, products that are removed from the central member play a critical role in terms of changing

social perception about the category. Athavankar suggests that, they come into existence because they have a special appeal for a specific subculture and gain acceptance within such groups. Hence, they not only extend and redefine the boundary but indirectly influence the mainstream trends from a distance and in turn modify general perceptions about the category (Athavankar, d13).

According to Athavankar, in the product design area, two alternative approaches exist about the manipulation of the semantic boundary. The first is to be close to the mainstream and directly influence the central member. The second approach is to be remote, challenging the boundary and directly influencing the central member (14). With regard to gender identity of individuals as well as products reinforcing the gender identity of individuals; the nature of the competition, the current level of segmentation, resources, all play a major role in deciding the position along the gradation of Athavankar. Such a viewpoint enforces the design activity to concentrate on intentional control along the gradation of the functional and semantic profile of product form so that it can be moved along the gradation in either way but with measured steps.

5.4 Taxonomic Relations of Products

The framework which Athavankar presented, permits and encourages visual innovations while ensuring that a certain level of continuity with the present world is maintained within its dualistic structure. The interconnecting links within the semantic boundary ensure that the identity of concepts and objects are enhanced with the assist of the links to other concepts. In other words, the links give the products its identity, pointing to the potential source of new visual

clues (Athavankar, d16). Thus, human concepts and man-made products is always synthetical and connected to each other, unlike natural species in the organic environment. This system of linkage in fact is about the spatial organization of man-made items on a superordinate level. Such point of view may explain the products taxonomic relation with each other (d16).

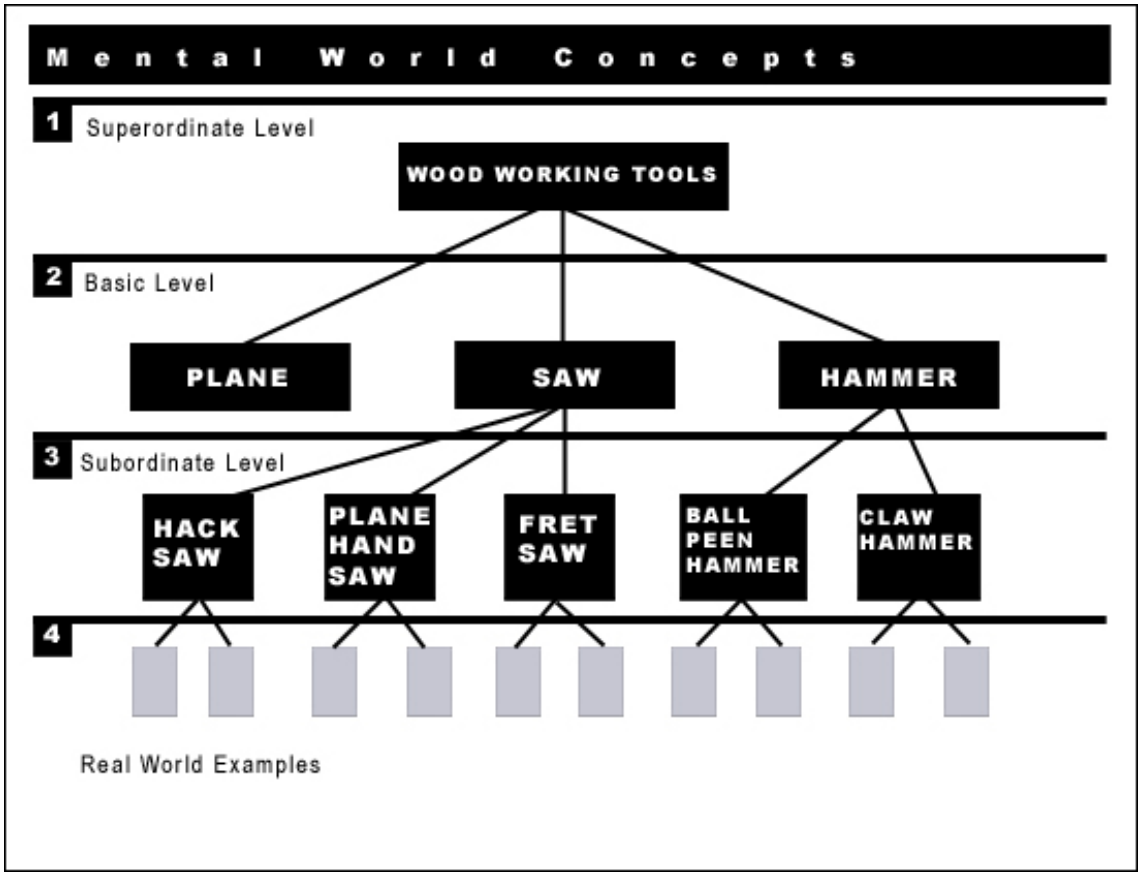


Figure 5.4 Taxonomic Structure Of Nested Human Concepts Modified (Athavankar, d17).

To explain the mechanism of 'superordinate level' and 'taxonomic membership of products Athavankar gives the following example as illustrated in Figure 5.4 Semantic space in the superordinate level consists the category of wood working tools. This broad category is partitioned into lower order concepts having 'family resemblances' such as saw, plane, and hammer. As illustrated the

concept saw, is then partitioned into plane saw, fret saw, and hacksaw. Hierarchically arranged tree-tier structure in fact illustrates, how an individual recalls concepts for one after another. Therefore in the communications level, products continuously reflect category membership to the individual.

Another striking example given in the article is the 'flash gun'. Flash gun show semantic clues borrowed from cameras and lenses. Athavankar states that, in such situation, the search for category identity is effectively reduced to options available within the superordinate class where the product form is revealed through other concepts in the superordinate route by assimilating features from cameras and lenses.

Consequently, the use of semantic devices from the primary category may increase legitimacy as well as increasing the probability of deviated products innovatively from the central member without serious effects on primary category identity. Actually, superordinate category is an invention of human mind, however it is an excellent tool for understanding existing sources of products as members of a more inclusive category.

On certain occasions products may legitimately belong to two superordinate categories. As Athavankar states, this instance is often manifested in the lexical label used to denote such a concept. The example given to explicate the concept is "photo studio light". Here the lexical term "photo studio light" announces its simultaneous membership of two superordinate categories, as "lighting" devices and "photo-studio-equipment". That means, products form will come about from two superordinate levels.

In product categories, especially in personal products to respond the user identity, attitude, social class or environment requires that products communicate

more than their primary category identity. That is to say, most products demonstrate a compound semantic statement embodying visual clues with links extended to concepts outside the primary category (Athavankar, d20).

5.5 Razors: Compound Statements Of Products

In a compound statement like ‘sports shoes’, ‘baby shoes’ or ‘Gillette for Men - razors for men’ and ‘Gillette for Women - razors for women’, in terms of communication the forms must express ‘shoeness’ as well as ‘sport thingness’, ‘baby thingness’ or ‘men thingness’ respectively. Athavankar, defines such forms as being not pseudo-merger of the primary concept with their compounds, but as forms influenced from the demanded categories. As stated there are two strategies confronting the communication issues, searching for semantic clues in the superordinate level.

To explain the strategies ‘sport shoe’ concept will be used. The first strategy is facilitated when a product emerges for the first time. When a designer confronts a concept as sports shoes for the first time, physical features prompting functional aspects of the shoe as a sports equipment will be prompted into bold visual features, assessing their potentials of being coded as the new semantic devices of the concept ‘sport shoes’. In other words, if the product is newly introduced as well as its functions, then the compound concept depends heavily on visual expressions of the new functional features as its semantic devices. When the product is accepted by the society, it will be treated as a central member, and its visual expression will tend to be associated with the core meaning of the new subcategory. Consequently perceptions and mental concepts of the people will be

influenced by the first successful product. Athavankar states that, once the perceptions are formed dislodging is not easy. This approach, forces a rigid constraint of linking functional aspects with communication needs. Thus, its limitations become obvious when the developments in the functional qualities have more or less been stabilized.

In the second strategy, even when the functional considerations do not change, it treats the expression of 'sport-shoeness' as a graded concept in the communications layer motivated by two independent mental concepts and their gradations; shoeness and 'sport-thingness'. The second definition 'sport-thingness' becomes dependent on the semantic devices used in concrete objects belonging to the category of 'sport-things'. So, as well as the influence of other sports shoes, the form comes about to be legitimately susceptible to visual influences from other sports related products in the superordinate category (Athavankar, d21).

The second approach as explained above is what has been applied to the products like 'Gillette Mach3' Turbo and 'Gillette Venus for Women' as a strategy simultaneously with other hair removal products of other brands in the same category.

5.5.1 Comments On Razors

The reason why hair removal products has been selected to explain encoded gender qualities in industrially designed products is that, among all product categories hair removal product category has binary oppositions as being for male and female. Thus, this binary opposition helps us to compare the features

employed by the products simultaneously. On the other hand, another advantage of the selected product category was, male and female products do not have differentiated instrumental functions.

On a similar study conducted about hair removal products, Martha Zarza explains the formal differences in male and female razors as deviated from social norms and stereotypes, referring to definitions of self, men's task oriented behaviour and women's and women's expressive role behaviour. Since we have already discussed the topics of gender role behaviour no further comments will be made. According to Zarza, colour and lines are the first and most basic elements of gender differentiation on shavers. Black, silver and grey are the most frequent colours on men's razors. On the opposite side, pink, white, and pastel colours are usually related to female shavers, which frequently combine certain types of prints and decoration, such as floral and water elements (Zarza, 2). Zarza depicts that, the use of colour and lines in prototypical shavers is reinforcing the conventional characteristics related to femininity and masculinity that we listed before. Pink and pastel colours, as well as curved lines are portraying the traditional image of a tender, soft, delicate and nature-related woman. Black, grey, silver colours and straight lines are reproducing the image of a tough, aggressive and dominant man (2).

Figure 5.5 Gillette Venus www.gillette.com

In products like “Gillette Venus” as having real physical differences with respect to prototypical examples the design elements that denote traditional gendered notions are emphasized in a more exaggerated way referring to women’s body under the brand name ‘Venus’. The same smooth curvaceous body in light pastel colours is also followed in this product as in other products simultaneously. As Zarza emphasizes, The transparent aqua-collared section in the handle has wave-shaped indentations for gripping, which, according to Shurtfleff (1993), the designer, is intended to “identify the product with water and cleanliness”. Although it has improved characteristics providing ergonomic advantages, these features are not emphasized especially as it is done in male razors to denote functionality. These features are left blurred not to disturb the women’s body appeal. Another razor which Zarza denotes is Schick razors for male having a tool like appearance which is usually less rounded than their female counterpart and frequently in black and metal colours. According to Zarza,

Figure 5.6 Schick Xtreme3 www.shaving.com

The Schick razor reinforces the concept of masculinity as active, athletic and aggressive in contrast to feminine razors which depict a more passive and

decorative image. As stated, the shape of this manly shaver suggests the aerodynamic streamlines of a motorcycle, which has been generally seen as a highly masculine product. Simultaneously, the electric razors follow exactly the same visual patterns that cluster around male an female versions.

5.5.2 Taxonomic Identity Of Razors

To display the reasons of making use of such connotations as machine aesthetic for males and biological and nature references for women as Zarza portrayed, once again Athavankar's model of taxonomic relations of products in the superordinate level as the communication layer will be used. As mentioned before to demonstrate the issue "Gillette Mach3" will be used.

Gillette Mach3 is a striking example for which it takes place at both of the two instances about assimilation of superordinate categories when being introduced to the market, first, with its new functional features, and secondly usage of compound concepts after the new functional features have been stabilized.

Figure 5.7 Gillette Mach3 www.gillette.com

In 1984, Gillette Company launched, “pivot disposable twin-blade razor”. This was perceived as an evolution in the grooming market for males. With aid of twin-blades, shaving speed has been increased for users, and besides long lasting shaving effects has been achieved as it was manifested in the advertisements. Since there was no other product having the same functional features, it started to exploit the market share with its advertising focusing on the twin blades and disposable cartridges. After when the other companies started to use the same functional feature, which was a significant sign that the technology had become unanimous, Gillette then launched Mach3 in 1998.

Figure 5.8 Gillette Sensor Excel www.gillette.com

The huge difference between the two products can be realized from their names. “Gillette Sensor Shaving”, as it can be understood apparently from the statement, is directly associated with the act of shaving, by intense attention and care. On the other hand, “Gillette Mach3” as a brand name, explicitly manifests the products connotations from other product categories and activities. Mach as a term, is the velocity unit of aircrafts at supersonic speeds when the aircraft exceeds the speed of sound. And the number 3 attached at the end of the phrase “mach” counts for the number of blades the razor has. On the other hand, number 3 also indicates another aspect related to mach speed; speeds beyond the speed of sound is read as, mach1, mach2 and mach3. Such a differentiation on the image

and identity of the product only indicates the extensive masculine gender coding applied on the product. Since being a pilot is still under domain of males.

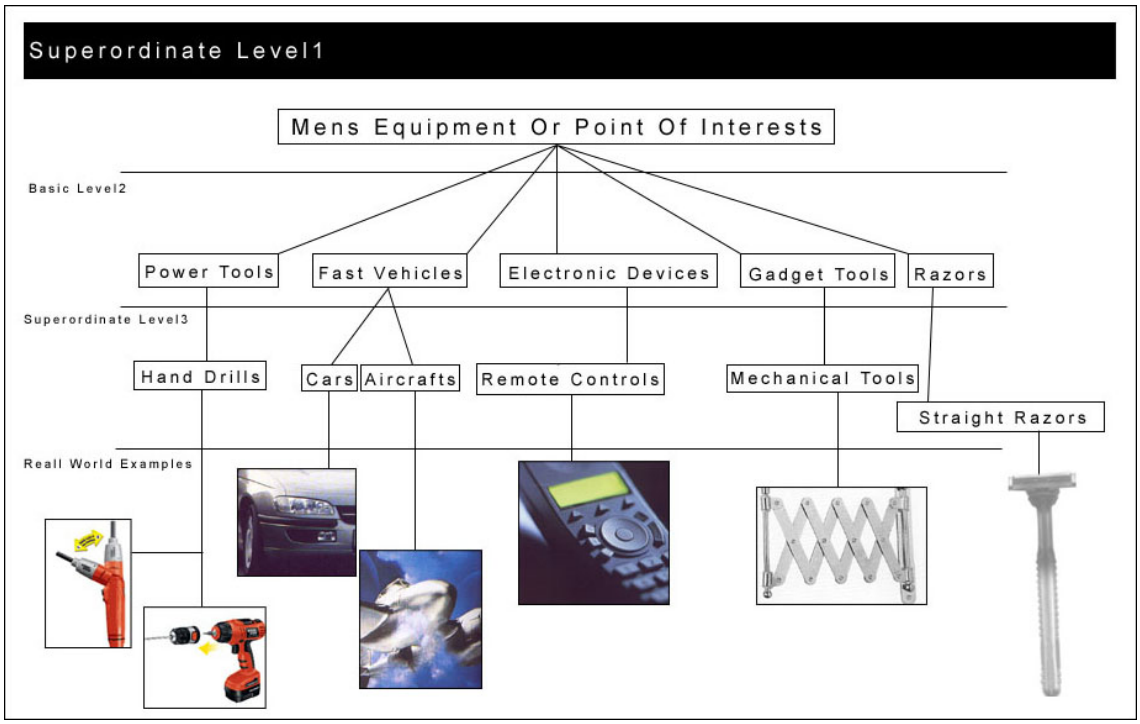


Figure 5.9 Superordinate levels of male-thingness

When the product's form and material selection is observed, assimilated visual clues from other types of male products or in other words men's point of interests become apparent. Chromium plated, sleek alloy body gives direct reference to aerodynamic structure of planes or fast vehicles. Rubber bands for gripping resembling the form of sound waves are heightened over the sleek surface. Combination of rubber and alloy may invoke resemblances of hand tools in the user. Consequently, these intentionally exaggerated implications on the product are borrowed from the products within the male domain, to emphasize the self and gender identity of the target user and to increase market share. As a product which has a cumulative sale of 1 billion mark, we may assume it as closer to the "typical" end of the semantic space.

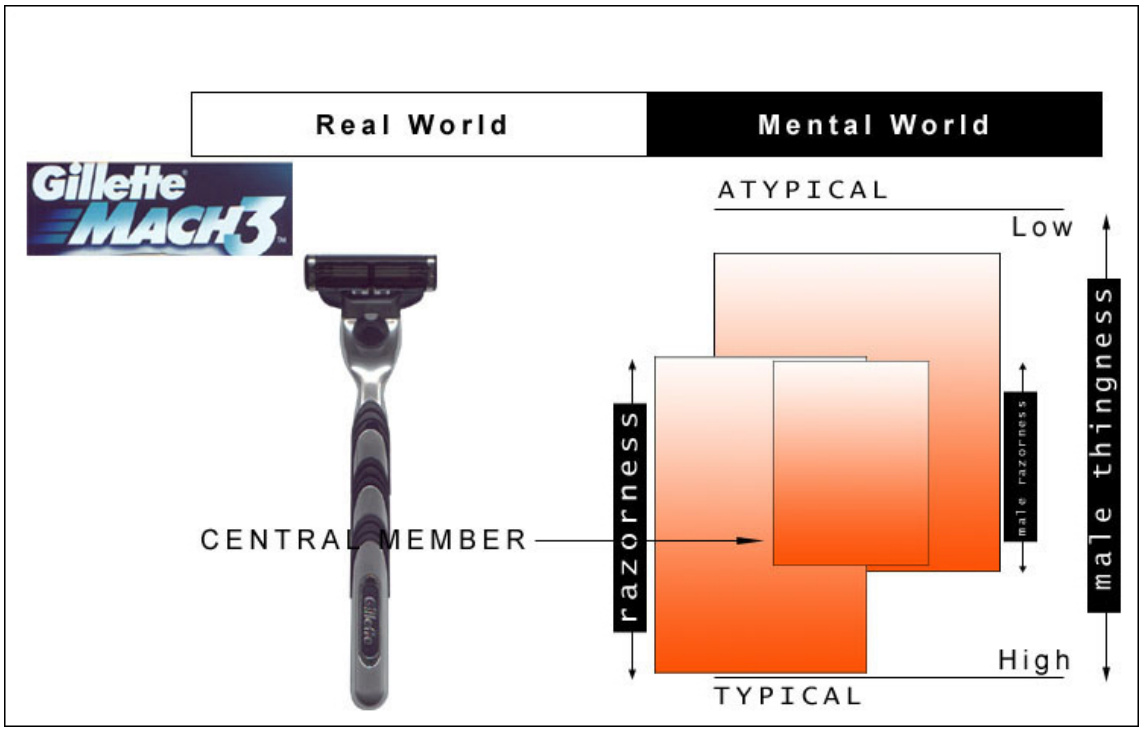


Figure 5.10 Illustrates the structure of 'Real World' and 'Mental World' and how it responds when being introduced to Mach3 like product having considerable differences than the basic prototype. Figure also illustrates the overlapping structure of mental world by means of different semantic spaces involving with male thingness, razorness and male razorness at the same time with respect to the place of Mach3 within these semantic spaces.

The explanations presented above may also be applied to the female counterpart of Mach3. Except from the elements which the superordinate levels has for the ‘women thingness’, in other words, other fields the women are interested in which the designer may recall, will remain the same. The elements presumably recalled or assimilated from the superordinate level gives direct references to women’s own bodies and nature as it is discussed in earlier chapters, to alienate women’s products with respect to men’s as technology is still seen as under male domain.

5.6 The character modelling process in users

In a supporting manner to Athavankar's model, Janlert and Stolterman additionally suggest a model which may explain the user side of accepting a new product and accepting character or identity given to the user by that product. They asserts that, attribution process of a product consists of a 'perceiver', 'situation' and a 'target person'. The perceiver is directed by interaction goals, forming the overall expectations and governing actions and thoughts. These expectancies can be divided into different classes. Category based expectancies are certain presumptions about general groupings in our society and are not richly characterised by individuating facts. However, as the perceiver who is the potential buyer, gets to know the target person better, category based expectancies will be discarded in favor of target based expectancies that are tailored to the target person. For example, before the launch of "Mach3", the perceiver who has been targeted by the company, was only familiar with straight razors without any exaggerated masculine cues on it. However, as he gets used to the identity of "Mach3" he starts to assimilate those identities within his own character. Therefore, the perceiver is also influenced by normative expectancies, that provide a framework of expectation for evaluating the person or the artifact. The setting or situation constraints and sets limits on the possible behaviour of the target person and the perceiver. Finally the perceiver shifted to the target person with their appearance and behaviour(Janlert and Stolterman, 310).

5.7 Metaphors

> To depend on functional considerations to define semantic devices may be a good starting point. But it is hardly an effective strategy for exploring the full potential of the product category. The modern movement emphasized the functional layer and treated the communication layer as an automatic extension of the first layer. This does not adequately explain the complex multi layered statements made by the contemporary products. (Athavankar, 24)

As suggested before, visual clues act as codes to reveal the nature of product concepts within the primary category and outside the primary category. Accordingly, when the concept is meshed into a complex network of concepts, the function of the active links becomes to prompt people to view the product idea in a new perspective (Athavankar, d24). Consequently, connections between the primary category and other mental concepts can be achieved through usage of metaphors (Athavankar, d25).“Metaphor is based on a proposed similarity or analogy between literal subject.”(Hawkes, 1992)

Metaphors or references facilitate an understanding in trying to make the unfamiliar become familiar (Browne, 7). In design practice, it refers to the conscious inclusion of certain features in an object –colour, form, texture, size – which make wider suggestions beyond the product. Such associative value would in turn de-alienate it for the user, bringing a layering of connotations to it, but may also communicate its status more clearly (Julier, 93). In advance, a characteristic design of an artifact may link properties of its appearance with properties of its functions and potential behaviour, besides, such a link can also be called a functional metaphor or non-functional metaphor or analogy relating to the

function and operation of one object to those of some other object (Janlert and Stolterman, 305). In other words as Hernan Casakin sates in his essay, referring to Pirece, an analogy is defined likeness of relations, as in A:B::C:D, or A is related to B like C is related D. It is implied that there is a higher order abstraction that holds equally well for A:B and C:D. So that correspondences are established between source and target, the A, B, and C terms are generally given and the D term has to be established. He also asserts that the transfer of knowledge is achieved by analogical mapping, whereby a system of relations concerning central properties is transferred from a base to a target situation. Hence, the identification of a similarity between possible relations in the target situation and known relations in the source situation leads to the creation of an analogy (Janlert and Stolterman, 307). Consequently, the visual clues rooted in the products of related categories are not used as mediating devices. A metaphor used to comprehend a complex concept itself gives access to potential visual imagery and visual clues. In this approach, individual and somewhat personal interpretations of the concept might dominate the need to conform to the social perceptions of that category (Athavankar, d26).

Athavankar summarizes the issue which we have taken as a model for interpreting the gender typing in products, about assimilating visual clues from the superordinate level of mental concepts as follows:

1. The Concept as a linguistic expression
2. Identify visual clues which manifest the concept
    a. Through products, events, activities, OR
    b. Through visual interpretation of the concept
3. Select potential visual clues

4. Assimilate them with product form
5. Effects
    a. Adds a new dimension to the current way of looking at the category –develops a new perspective and a viewpoint about that product category
    b. Product acquires its individual identity and unique position along the gradation (Athavankar, d26).

CHAPTER 6

DESIGNING KETTLES FOR MALE AND FEMALE

A TEST TO EVALUATE DESIGN INTUITION WITH REGARD TO GENDER

6.1 Why needed a test?

The information which has been gathered through the literature survey in the fields of social psychology, gender, cognitive learning, industrial design, and design semantics, portrayed the fact that; performing a designing activity is highly influenced by social norms as well as the information collected consciously or unconsciously from past and personal experiences. However, the information found on the listed aspects were theoretical assumptions. On the other hand, there was no empirical study conducting on both gender and industrial design. The empirical studies found were separate explorations solely on gender or design. Consequently, a need for a test had come about, jointly evaluating gender and design to find evidence for gender typed products.

6.2 Design of the Test

As the main emphasis of this study is gender typing on products through industrial design; it was decided that a way to analyse the issue was to give a

design task to designers to develop a gendered product. After the type of the test to be conducted was agreed upon, the second critical question remained, which was the kind of product that would be requested from the designers to design with a gender code. The answer was found in the kitchen.

Among the kitchen ware, the kettle was selected as the product to be given as a project to be gendered. The first reason for the selection of the kettle was its simplistic function when compared to other products in the kitchen. The second reason was its dimensions since kettles are smaller in size with respect to other kitchen appliances. This was an advantage because the dimensions of the product would allow the designers to draw their design in 1:1 scale, without distorting the proportions. The last and the most important reason for the selection of the kettle was its product category as being a kitchen-ware. Almost all of the products in the kitchen are connotated with women because of their role in the family. Hence as it is stated in the literature frequently, kitchen products are assumed to be female products. Accordingly, the results of gendering a product having a female gender code in the contemporary examples in the market has aroused curiosity, as it was frequently depicted in the literature that, technology products which are in the kitchen are frequently being made to appear more low-tech than they actually are to match with the attributed gender qualities of women.

Asking the designers to draw a kettle was the first phase of the test. It was decided that second year design students in the Department of Industrial Design at the Faculty of Architecture of Middle East Technical University, Ankara, Turkey, would be asked to participate in the first phase of the research.

The choice of second year design students has been fruitful for the study since it enabled us to gather a considerable amount of data and also because of the

fact that the students were active consumers. The design brief (Appendix A) was given to the instructors to be passed on to the students and the test was assigned by the instructors as a take-home project. The students were instructed to illustrate the male and female kettles on separate A3 size papers in 1:1 ration. The 48 kettle designs, of which 24 were female and 24 were male, were scanned and reduced to thumbnail sizes in preparation of the second phase of the test.

In the second phase of the test, the thumbnails of the kettles that were designed as male and female by the students, were arranged on A4 paper so that each page contained 4 designs. A total of 10 adjectives, 5 male 5 female, were chosen from the Universal Gender Stereotypes Table 2.2, and placed in a mixed order beside each design. A zero to seven grade scale was drawn for each adjective so that the participants could fill in the checkboxes so as to evaluate how effective the male and female qualities of the design were (Appendix B). A total of six professional designers of which 3 were male and 3 were female participated in the design evaluation test.

Since there was no indication to which gender category each thumbnail belonged, on the test, in the third phase of the test the thumbnails were given as cards to the same six professional designers who were asked to divide them into two groups with respect to the gender identity they thought the design signified.

6.3 The Adjectives Used to Denote Gender In Kettles

As mentioned above a total of 10 adjectives, 5 male 5 female, were from the Universal Gender Stereotypes Table and modified. The logic behind was similar to what Debevec has noted in section 5.2. She noted that if people could

be classified along the dimensions of masculine and feminine, then the objects used by people could also be classified along these dimensions (Debevec, 211). However, since it was not appropriate in the test to ask directly whether the product was masculine or female, it has been expected from the expert designers to grade the products along the 0 to 7 scale check-boxes listed above each adjective to reveal the objects masculinity and femininity. The adjectives were first listed in English, but as the expert designers nationalities were Turkish, then the adjectives were replaced by their Turkish counter-part. The list of adjectives used are given below in Table 6.1.

Table 6.1 The list of adjectives in Turkish used in the test for the expert designers to grade with their English counter-parts.

FEMALE ADJECTIVES			**MALE ADJECTIVES**
Turkish Versions	English Versions	Turkish Versions	English Versions
Duygusal	Emotional	Saldırgan	Aggressive
Figuratif	Figurative	Atletik	Athletic
Zarif	Delicate	Mekanik	Mechanical
Çocuksu	Childish	Kuvvetli	Strong
Organik	Organic	Analitik	Analytical

Figure 6.1 is an example for how product drawings, adjectives and check-boxes are arrayed in test papers. Full version of test papers are in Appendix B.

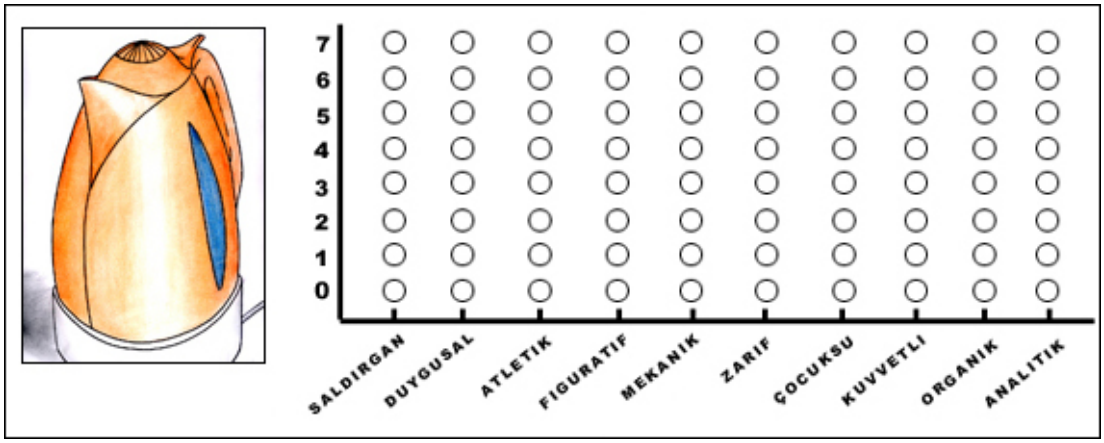


Figure 6.1 An example for the array of product drawings, adjectives and check boxes.

In the following explanations the English version of the adjectives will be used. What has been expected from the grading of the adjectives was to receive a gender value for each product. The adjectives were assumed to trigger some male or female traits in lexical terms for the experts to match with the product drawings. For example the adjective “aggressive” may trigger the aggressive behavior commonly matched with men in contrast with women. On the other hand, it may remind the aggressive look of a sports car which are usually possessed by men so that the experts could match the recalled imagery of “aggressiveness” with the kettle drawing if there is a relation. Another example which may be given to clearly define the usage of the adjectives in test is “mechanical”. This adjective may trigger other mechanical objects in the superordinate level in experts mind usually associated with men like power tools, hand drills, etc. Then the expert was expected to match those qualities stimulated in their minds with the kettle by grading the adjective “mechanical” along the 0 to 7 scale with 6 for example. Similarly if there was extensive mechanical qualities influencing the appeal of the product, the experts were expected to grade the adjective along the gradation whether the kettle drawing recalls a mechanical quality of another product or not. Thus, in the design of the second phase of the test it is assumed that the adjectives would recall traits associated with men or men’s products or traits associated with women or women’s products. It has to be noted that, the experts were aware of the aim of the test which was receiving the gender information in kettles. However, no information has been given to the experts about our assumptions on the adjectives that they were having male and female connotations.

The methodology followed is designed basically depending on the information given in Chapter 5 and about the superordinate level in mind which we use to categorize objects by reading the compound statements made by the object.

6.4 Evaluation Of The Data

After the data is collected, it is passed on to Microsoft Excel. In the first stage of the evaluation, the kettle drawings are divided into two sections as male and female according to gender which students assigned them while drawing. Then the products are labelled as M1, M2, M3,…M24 and F1, F2, F3,…F24. After the products were labelled, they had been listed in Microsoft Excel in an ascending formation from M1 to M24 on the left hand side and from F1 to F24 on the right hand side as two separate lists. Near each product label the adjectives were listed as two separate columns having 5 rows for each, consisting of male adjective in one column and female adjectives in the other (Appendix D). Following this structure, 6 rows were added consisting grades of six experts made along 0 to 7 scale for each of the adjectives under these columns.

Table 6.2 Example for calculating male and female points for kettles

F6	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**Sum**
EXP1	0	0	0	3	3	
EXP2	0	5	0	3	5	
EXP3	0	1	2	1	0	
EXP4	0	4	0	2	3	
EXP5	7	2	0	5	4	
EXP6	0	0	0	0	0	
Mean	1.17	2.00	0.33	2.33	2.50	8.3

Table 6.2 (Continued)

Duygusal	Çocuksu	Figuratif	Organik	Zarif	**Sum**
5	5	3	5	0	
3	4	4	0	3	
0	0	0	6	0	
2	3	3	3	3	
6	0	6	2	2	
3	5	0	7	3	
3.17	2.83	2.67	3.83	1.83	14.33

Table 6.2 demonstrates how the evaluation data is arranged for Kettle labeled with F6 which was drawn as female by the student. After the data is arranged for each product like it is shown above, then the mean values for each of the adjective has been calculated according to the grades given separately by experts. For example the mean value for the adjective “Saldırgan” is 1.17 according to five 0 points given by five experts and 7 points from one expert. Following the calculation of mean values for each of the adjective, to get a rough male or female point; these mean values are summed up with each other. Summation of “male mean values” for “F6” gives us the male point of F6 as “8.3”. On the other hand, the summation of the mean values of female adjectives of “F6” is 14.33. To get an absolute male or female point along the entire list female points are subtracted from males points. Thus the absolute value for kettle “F6” is “–6”. Minus values achieved from subtraction denotes that product has been graded as “female”. On the other hand, plus values denotes that product has been graded as male.

It has to be mentioned that, as the maximum grade for each adjective is 7 points, the maximum male or female points that an object could be able to get is 35 points in sum. Accordingly rest of the evaluations to decide whether the

product is male or female are made over 35 points for male and –35 points for female products.

After the absolute male and female values has been achieved with subtraction, the products are listed beginning from M1 to F24. When the list has been completed each product label had its “sum of male mean values”, “sum of female mean values” and the “absolute male or female point”. Then according to the absolute points, the products are sorted descending from the high masculine to high feminine. This achieved list is also given in Appendix C having also the product thumbnails along the grades.

List of high masculine to high feminine enables us to compare the values and validity of the data. It also makes apparent the products which designed as male but graded as female or just the opposite.

Table 6.3 List of products sorting from "High Masculine" to "High Feminine" according to their absolute values.

HIGH MASCULINE	MALE MEAN SUM	FEMALE MEAN SUM	ABSOLUTE MALE	SEPARATION
M17	21.50	0.83	20.67	6M
M2	26.00	5.33	20.67	6M
M21	21.50	1.67	19.83	6M
M9	25.33	6.17	19.17	6M
M6	20.83	3.00	17.83	6M
M19	17.83	2.67	15.17	6M
M8	20.83	6.33	14.50	6M
M15	17.67	3.67	14.00	6M
M18	16.50	2.83	13.67	6M
M3	16.67	3.33	13.33	6M
M10	13.50	3.50	10.00	6M
M12	18.00	8.17	9.83	6M
M11	19.83	10.33	9.50	5M/1F
M13	15.00	5.50	9.50	6M
M4	13.17	5.67	7.50	4M/2F
M22	14.83	8.67	6.17	6M
F7	14.83	8.83	6.00	1M/5F
M24	12.67	7.00	5.67	4M/2F
F9	13.33	12.33	1.00	3M/3F
M16	6.83	6.00	0.83	5M/1F
M1	9.33	9.83	-0.50	4M/2F
M5	10.67	11.33	-0.67	4M/2F
M23	4.00	5.67	-1.67	5M/1F
F17	13.17	15.00	-1.83	4M/2F
F19	1.50	4.33	-2.83	2M/4F
M20	6.33	9.83	-3.50	5M/1F
F12	8.83	13.50	-4.67	1M/5F
F2	11.17	15.83	-4.67	1M/5F
F6	8.33	14.33	-6.00	1M/5F
F1	6.67	13.50	-6.83	1M/5F
F11	6.67	14.00	-7.33	6F
M7	8.83	16.33	-7.50	5M/1F
F24	5.67	13.50	-7.83	2M/4F
M14	4.17	12.50	-8.33	4M/2F
F8	8.00	17.17	-9.17	1M/5F
F10	2.67	15.00	-12.33	1M/5F
F18	7.67	20.33	-12.67	2M/4F
F13	3.83	16.83	-13.00	6F
F20	3.00	16.00	-13.00	2M/4F
F23	1.83	15.50	-13.67	1M/5F
F16	4.17	18.67	-14.50	1M/5F
F3	2.50	18.50	-16.00	6F
F15	7.83	23.83	-16.00	1M/5F
F22	6.83	23.83	-17.00	6F
F4	2.17	19.67	-17.50	6F
F5	3.50	21.00	-17.50	1M/5F
F21	1.83	19.33	-17.50	2M/4F
F14	3.67	25.50	-21.83	1M/5F
HIGH FEMININE				

6.5 Findings Of The Research

As it can be observed from Table 6.3 only 7 of the products intended typed gender by the students design have not worked. The other 41 drawings of kettles have been ranked by the experts points similar with the intended gender. This gives us %85.4 predictability value among the 48 products' visual appeal and intended gender. The unsuccessful products are highlighted with green, to be discussed in following sections. On the right hand side of the Table 6.3 the "separation" column stands for the grades which the experts have separated the cards carrying the pictures of kettles impulsively as for the third stage of the test. When the separation column has been observed 9 of the products has been placed on the opposite section impulsively. The rest 39 correctly categorized kettles gives the %81.25 correct separation value. Over 24 kettles which were designed for males 18 of them granted as male by the points due the adjectives. On the other hand, 22 kettles which were designed for females had been granted for females by the points due to the adjectives values.

When Table 6.3 is observed it becomes apparent that the deficient products are gathered around the middle of the scale where the absolute male and female points differentiate nearly between +5 and –5 which is the area relatively close to 0. In Table 6.3 if the numbers denoting "male mean sum" and "female mean sum" are examined again it will be apparent that both values are very close to each other. Hence, this means that, those products around the middle has created a confusion, and this is reflected in the numbers as they almost have the same amount of "male mean sum" and "female mean sum". If we refer back to Chapter 2 section 2.3.4.3 Self-Schemas and Gender, we may reveal what Bem has

depicted. According to Bem people having low masculine low feminine values at the same time are defined as undifferentiated. On the contrary, people having high masculine and high feminine traits at the same are depicted as androgynous. Thus kettles around the middle which are apparently graded with low male and female values at the same time can be defined as undifferentiated. Hence, this methodology is applied to the whole scale. In return we may have four product categories.

The product categories according to Bem's explanation are: high masculine, high feminine, androgynous, and undifferentiated. To see the dispersion along the categories, a graph has been prepared, according to the rough "male mean sum" and "female mean sum" of products. This time these values were not added with each other. However, they were coincided along the axes created as masculine and feminine to find out the place which the product belongs to, according to the points due to the adjectives. As the maximum point that a product can collect for being male or female is 35, both axes are divided into two at points 17.5 to create 4 areas of high masculine, high feminine, androgynous, and undifferentiated. In Figure 6.2 the graph of categorization of kettles is demonstrated. Between the axes a line cutting across undifferentiated areas and androgynous area has been drawn with an angle of 45 degrees. This line will visually put forward the kettles' closeness to either androgynous or undifferentiated traits.

According to the graph, for a product to be considered as "high masculine" the intersection point should be close to the vertical axis having "male mean sums". Similarly, for a product to be considered as "high feminine" intersection point should be close to the horizontal "female mean sum axis". On other

instances, like being away from the vertical or horizontal axes, as mentioned before the product gets closer to androgynous-undifferentiated line and areas.

For a product to be close this line means it either has low male and female points at the same time or high masculine and feminine points together. On the contrary, a product which is high masculine according to the graph should have great difference between the values of male and female.

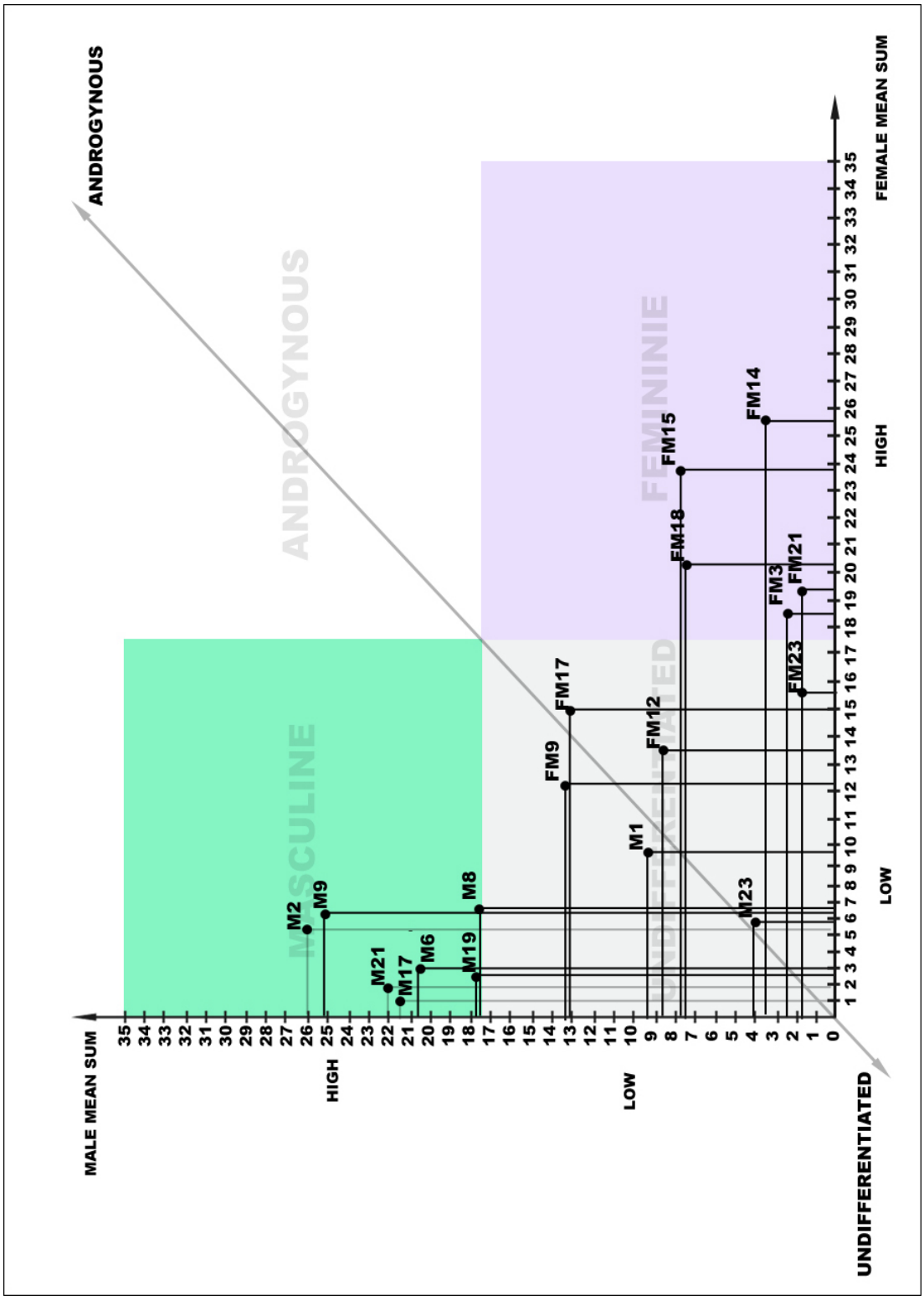


Figure 6.2 Graph of categorization of kettles as masculine, feminine, androgynous, and undifferentiated.

In Figure 6.2, 7 selected kettles which were found as male were placed in the “high masculine” area. 6 kettles which were found undifferentiated are placed in the undifferentiated area. And finally 5 kettles that were found out be female were placed in the “high feminine” area. Unfortunately, no androgynous values has been obtained from the values.

In the following section, some of the products that were placed on the graph in Figure 6.2 will be discussed according to the Table 6.3, Figure 6.2 and Appendix C.

6.6 Masculine And Feminine Kettles

When Figure 6.2 is examined, the kettles having the highest masculine values are kettles with labels M2. In Table 6.3 in the list which products are sorted from high masculine to high feminine, M2 is in the first place.

Table 6.4 Male and female points for kettle M2.

M2	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**SUM**
EXP1	6	6	5	5	6	
EXP2	5	6	6	6	6	
EXP3	0	4	3	7	6	
EXP4	5	6	6	7	4	
EXP5	0	5	7	7	5	
EXP6	5	4	5	7	6	
mean	3.50	5.17	5.33	6.50	5.50	26.00

Table 6.4 (Continued)

Duygusal	Çocuksu	Figuratif	Organik	Zarif	**SUM**
0	0	0	0	0	
0	0	0	0	5	
2	4	3	1	6	
0	0	0	0	0	
0	0	7	0	4	
0	0	0	0	0	
0.33	0.67	1.67	0.17	2.50	5.33

In Table 6.4 the male adjective cluster on the left consists of the mean values of points given by 6 experts for each male adjective with the sum 26 masculine points. The sum of the female adjective is valued with 5.33 feminine points. The subtraction of feminine values from masculine values gives us the masculine point deemed for M2 as 20.67 which is one of the highest points along the scale. When the weight of the adjectives is observed, it seems that the most influential adjective was “analytical” with the point 6.50 which is followed by the adjective “mechanical” with the point 5.50.

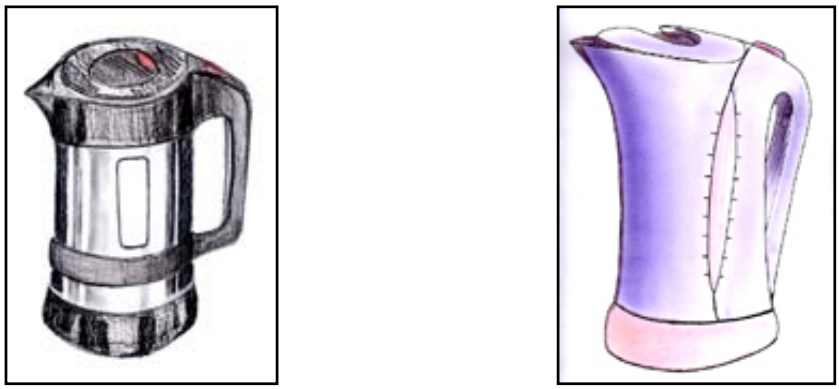


Figure 6.3 Highest masculine kettle M2 with its female counterpart F2 designed by the same designer.

The visual qualities of M2 has the potential to remind the viewer the appeal of power tools with its rugged plastic handles over a chromium plated cylinder. When the entire male category examined, it will become visible that, male kettles are mostly derived from geometrical patterns. Considering the most influential adjectives, it seems the super-ordinate categorization level has worked for the designer of M2. To see the effort and intuition of the designer to create a male kettle also the female counterpart of the kettle designed by the same student must be examined. While the male kettle is without any colour and any curvatures on

the surface, in the design of the female typed kettle, it is apparent that the strategy had been completely changed. Almost all of the surface is organic with a pink color. Even the opening to make the water level visible has been absorbed by the organic curvatures while M2 has a rectangular opening. When the male mean sum and female mean sum points of F2 is observed, with 11.17 male mean point and 15.83 female point sum F2 is considered to be a female product with –4.67 female value. However as the numbers smaller than 17.5 the product is in the undifferentiated area moderately close to the undifferentiated line. In the light of this evidence when both of the kettles are examined once again it will be seen that F2 has a common form we are mostly familiar with in the contemporary market. Thus, it can be said that the effort to differentiate both of the products from each other is mostly took place on M2 which is the male one.

If M6 is picked as an other example from the masculine area, the same finding will appear similar with the case of M2.

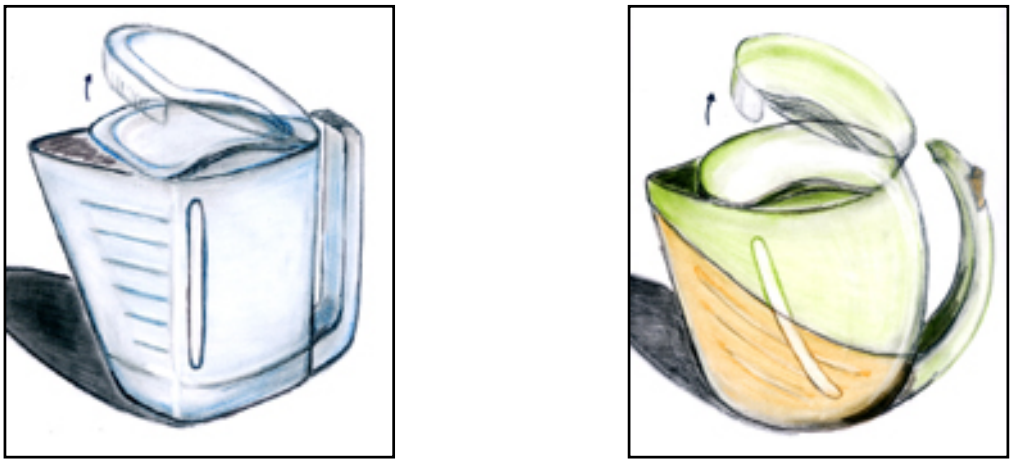


Figure 6.4 masculine kettle M6 with its female counterpart F6 designed by the same designer.

M6 has male mean sum 20.83 and female mean sum 3.00 and has been considered as a male kettle with a point of 17.83 in total. Not being as strong as the first

example, the straight lines on front line and on the handle can still be followed. On the contrary the female version of the product has again curvatures line absorbed by the overall form. Again if we compare the opening for the water level it will be visible that M6 has a straight line for the opening and straight level lines. However, the female product has a curved spline for the opening. If we take a look at the points of the female kettle it will be seen that the total sum –6 is almost near the center. Having mean male sum as 8.33 and mean female sum as 14.33 the product is in the undifferentiated area, since both of the values are smaller than 17.5. It can also be said for F6 that, the form is moderately similar to its contemporary examples. Hence the it can be suggested that the differentiated product is the male version of the couple. As a result, when discriminating the products as male and female one of the category is deemed as the norm. Then depending on that norm the other category is being discriminated with implications giving reference to other product categories and values. In the Kettle's case it seems that the products designed as female are following the norms of their contemporary examples. Since the kitchenware products are usually associated with women consumers. Therefore, to discriminate both kettles male version of the products are made male by implementing straight lines, geometrical shapes and with attributes giving reference to other product categories and other activities.

When product M5 is considered, which belongs to the undifferentiated category due to the values deemed by the experts, the issue giving references to gender type will be more clear. Having male mean total of 10.67 and female mean total of 11.33 M5 is placed in the undifferentiated area. On the other hand, the

product is considered as female with the total sum of –0.67 although it was designed as male.

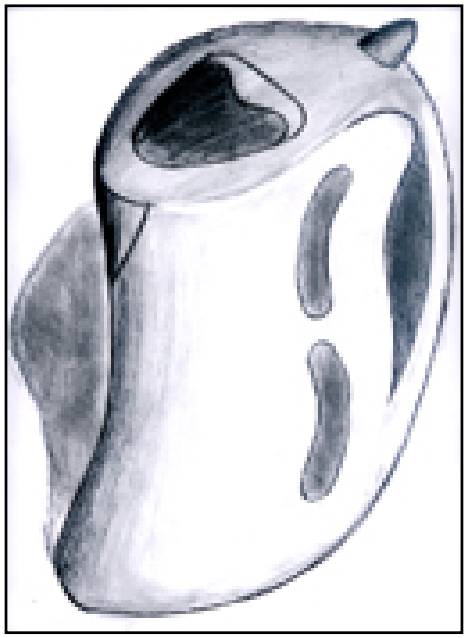


Figure 6.5 kettle M5, valued as female with a total sum of -0.67

When the products visual attributes are observed, it will be apparent that no peculiar and discriminating characteristics were projected visually on the product in contrast with the previous male examples. On the other hand, it has a monolithic smooth structure which does not surprise the viewer. Thus, it can be depicted that, the problem with this example is the lack of references or statements made by the products form. As a result it was placed in the undifferentiated area very close to the center line since it might not have recalled any information related with maleness.

F3 also being designed as female, has been noted as female due to the grades which the experts deemed for it. As the mean male sum for the product is 2.50 and mean female sum is 18.50, the product is placed in the feminine section of the categorization graph in Figure 6.2. with the total point of –16 it is in the

seventh place in Table 6.3. The influential adjectives are with the mean value of 5 points organic and with mean value of 4.50 is childish.

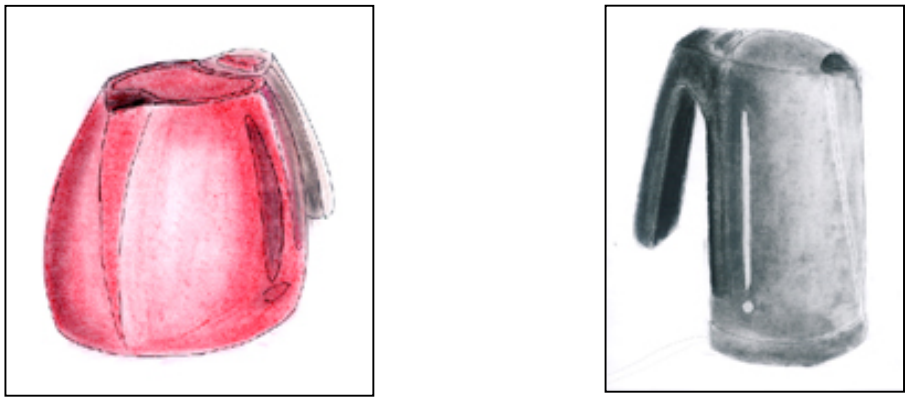


Figure 6.6 feminine kettle F3 with its male counterpart M3 designed by the same designer.

Apparently, with its rounded body and red color F3 might have given references to the teapots or to the toy teapot which is usually found in little girls toys. The reason this product is deemed as successful can be it is exaggerated features. The strategy followed to design it's counter-part M3 had been kept consistent by the designer candidate with its extensively straight surface geometry. The position of the handle in relation with body recalls the imagery of hand drills which are usually associated with men. Having the mean male sum of 16.67 and mean female sum of 3.33, M3 is to be placed in the undifferentiated area. Although it is in the undifferentiated area, the values of 16.67 male total and 3.33 female total keeps the kettle close to the boundary of the area and away from androgynous-undifferentiated line. This extent related with F3 and M3 show the use of exaggeration which increase the readability of the statement made by the product especially in M3. However, as the surface qualities of M3 is almost blurred and no projections were made reminding us other product categories associated with males it creates a failure for the product.

The highest feminine value given along the scale in Table 6.3 belongs to the products with the label F14 with 3.67 mean male sum and 25.50 mean female sum and in total with the point 21.83. The most influential adjectives are with the mean value of 6.33 figurative and with the mean value of 6.33 organic.

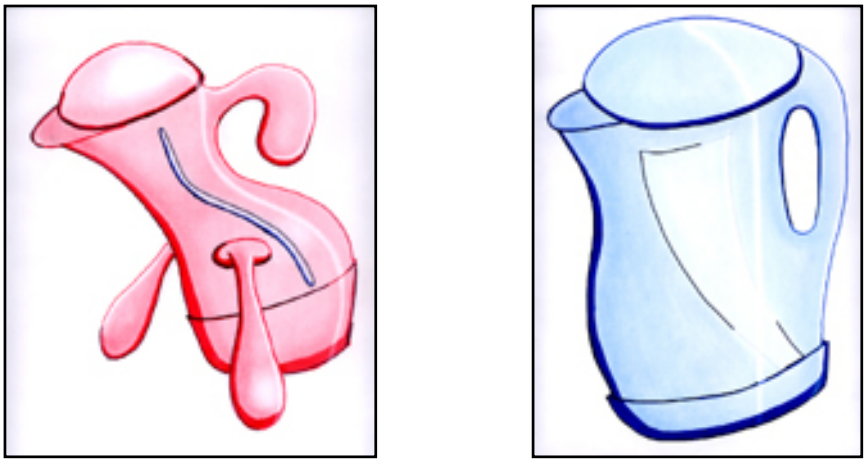


Figure 6.7 Highest feminine kettle with the point 21.83 with its male counterpart designed by the same designer.

As it can be seen in Figure 6.7 F14 is highly figurative. Almost resembling a dog with its organic surface structure. However the interesting point is that the male counterpart M14 is almost resembling nothing. The products are discriminated through the usage of color except from the highly figurative attribute of F14. Thus, the failure of M14 can be derived from norm that male products have attributes of technological connotations commonly.

Another interesting example which was found close to the androgynous-undifferentiated line is F17. With a male mean sun 13.17 and a female mean sum 15, it was placed in the undifferentiated area with a total of –1.83 female value. The closeness of male and female values tell us that there were not efficient clues to discriminate it as being solely male or female. If we examine the product drawing, it becomes visible that, the kettle is very similar to Tefal Delfina series.

However, in a test where adjectives implying the highest female and male values in mind, and forcing the viewer to seek for exact representations of the adjectives which are exaggerated metaphors, the drawing ended in undifferentiated area. It can be seen from the drawing that, there is no implications of gender with respect to other drawings participated in the test. Even no color coding has been given to the kettle to discriminate its gender value.

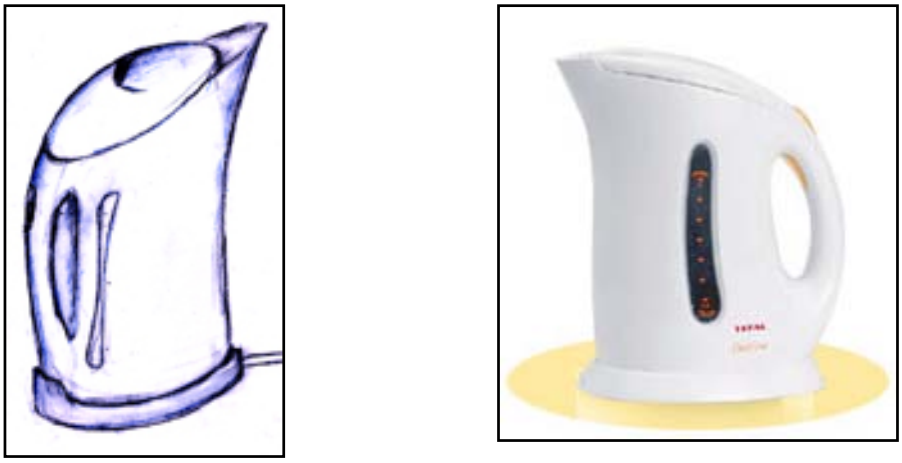


Figure 6.8 Kettle F17 in the undifferentiated area with its male sum of 13.17 and female sum of 15.00 and a total of 1.83 and Tefal Delfina on the right hand side retrieved from www.Tefal.com.

6.7 Limitations Of The Study

Although it was a right approach to start with asking the students to draw two kettles one for males and one for females, to see how a product is gendered by industrial designers, the evaluation phase of the test was dependent only on the adjectives given. And the appropriateness of the adjectives as to how they represent gender attributes have not been tested before. On the other hand, there was the possibility for the experts to interpret the adjectives related with gender qualities as the literature offered. Experts might have interpreted the adjectives according to their own experiences and values. So the right way for preparing a

form for the evaluation of the products with adjectives is to test the list of adjectives in the first place according to how well they define the male and female qualities. Secondly, in the drawing phase of the test, the designers' strategies followed during the gender typing of products tried to be followed in a subjective manner and through the points each product has collected. The designers' intentions and strategies that they had followed could have been asked to be written or could be taped. So that it would have allowed us to check the appropriateness of the adjective list that would be prepared for the second phase of the test.

6.8 Conclusions of the Test

The test conducted with industrial design students and professional designers helped the study to make visible how products are gendered consciously or unconsciously through industrial design. The selection of the already gendered product line "kettle" as a design project also had a strong effect in making visible the results of the gender typing process. When the list of products is observed, sorted from the highest masculine to highest feminine in Appendix C, it becomes clear that the products which are ranked as highly male due to their points gathered by the grades given by the proffesionals, have straight lines and rugged surfaces giving reference to other males' products. The group with the highest male points is infact the group which has been differentiated since the "kettle" product line is already considered as products related with females. So when the products' forms are observed it is clear that they hardly give reference to kettles. Rather they give reference to other products related to males. The variety of

surfaces used to build the products form in the products which were deemed as male by the proffesionals' grades, seems to be exaggerated intentionally to make the products look more complicated. On the other hand, the products in the male section of the list also have straighter lines and rectangular surfaces, giving a more powerful look, when compared with the female products. Furhtermore, almost no color is used in the group which were deemed as masculine and the surfaces are rendered as if they were metal or chrome coated. It has to be noted that only four of the products are rendered in blue and that the colour blue is also usually associated with men. However, at the middle of the list in Appendix C as the female grades start to ascend, the surfaces begin to get rounded, organic, and colored. The products which are in the middle of the list, are the products having closer grades to zero. Thus, these products are placed in the graph in Figure 6.2 in the undifferentiated area since they did not have enough references or metaphores to be included in either the male category or the female category because of the low points they received from the professional designers. In the female products, at the bottom of the list, only five of the products were rendered in grey, the rest of the products were rendered in bright colors like, pink yellow, red, orange etc. It can be observed that the forms of the products also have continuous curves giving reference to other products belonging to the kitchen like teapots and tea glasses or decorative objects such as vases. It must be noted that the products which have high female points are also exaggerated through their forms to look more feminine. This attempt can be considered as an effort to make a product, which is already regarded as a product belonging to female category, look even more feminine.

As a result, the students seemed to follow and apply the stereotypical gender attributes in the gendering of kettles. Although the drawing were not typical examples of kettles, the strategies that were followed while gendering the kettles are consistent with the contemporary examples of gendered products which are discussed in Chapter 3 and Chapter 5. Moreover, although, what the adjectives recalled in the professional designers had not been tested and could have different meanings according to their own understanding and personal experiences, the results achived by the grades according to the adjectives of males and females respectively also confirmed the stereotypical behaviour of the students in designing gendered kettles.

CHAPTER 7

CONCLUSION

This study discusses the gender information that products might channel through their designs. As a starting point for the research, first of all the meaning of gender as different from biological sex and its construction in individuals through the influence of society has been retrieved through the literature survey and it was found that, gender refers to the social meanings attached to being male or female in any given culture or society, expressed in terms of masculinity and femininity. The subject was then extended to the issue of stereotypes which are referred to as internal pictures and mental representations of social groups in contrast to their external reality and it was revealed that individuals tend to refer to stereotypical gender images and attributes while interpreting gender roles. Thus, these gender stereotypes initiate a list of adjectives as descriptors for masculinity and femininity as listed in Chapter 2. It was further noted that these prescriptive images, which start to form in early childhood, also effect the roles assigned to men and women in the social and labour environment.

As we live in a social environment which absorbs technology and technological products, the second phase of the study argues the relationship of gender and technology. As made apparent by the literature survey, with the influence of industrial revolution, men were assigned the role of inventors of technology and women were assigned the role of potential users of domestic

appliances. Consequently, men were categorized as outside the home, in the public sphere with access to technology at work as users as well as decision makers in the process for the innovation and use of technology. On the other hand, women were inside the home in the private sphere, with access to technological home appliances as users but with no role in the decision making processes. Thus, technology was determined as a male domain and as a stereotypical gender attribute, the technological was considered masculine.

As further noted, just as women were alienated and kept away from technology, the domestic products designed for women by men were also alienated by appearance and lack of sufficient function. Domestic tools which were frequently used by women were made as flimsy duplicates of their powerful industrial and commercial counterparts. When the relation between a power tool and a food processor is examined the issue is clarified. To operate a food processor, usually marketed to women, does not require extra capabilities both from men and women. However, a woman could have trouble using a power tool because its weight might be too heavy for her to lift. Such experiences women could have with such tools, confirms the negative attitude to machinery, equipment and technology that many women form during childhood and school and is reinforced by advertising and design in the consumerist, patriarchal society. Such examples confirm the affect of the stereotypical image of women in relation with how a woman's' product should be. Alongside the affects of social perceptions, it was founded by the literature survey that, products have a similar impact in our social relations by conducting the meanings which we assigned to them back to us as a means of communication.

Since it was asserted by the theorists that a product may be possessed as a means for self enhancement, in the following sections it was discussed whether gender could be emphasized by products. It was asserted that men and women have different types orientations towards objects in that men's attitude towards objects is explained as action to contemplation where women's orientation were from self to other. Thus, effects of stereotypical gender roles can be followed even in the object possession behavior of men and women. The literature survey showed that, the symbolic qualities of modern goods were also reinforced by advertisements, thus the biologically divided market forced the advertisement agencies to recapitulate the gender differences and emphasized stereotypical images of men and women respectively. Also in the advertisements women were depicted as mothers, housewives, or as a sexual object used to attract attention, whereas men were shown as adventurous and action contemplated. Thus it was seen that a factor of appropriateness of products has been emphasized to men and women also through advertisements.

In the following sections, in such a framework where gender has been socially constructed and reinforced through division of labor and advertisements, the stand point for industrial design has been argued as the main concern. As it is depicted in the literature, designers and the consumer are of equal importance in shaping the gendering of artefacts. In other words, designers are responsible for shaping the initial forms, functions and meanings of objects, whereas the users are equally responsible by interpreting, using, talking about and contributing to their social shaping. To make visible the exact discrimination made by the designers in gendering of products, a product group which has binary oppositions has been selected as battery operated shavers. As both male and female shavers are

identical in function and usage, it was an advantage for the study to make one to one comparison. In shavers the first significant differences about the gender they denote are the form of the products. While the male shavers are usually in matt black or silver colour having a monolithic and chunky form with a rugged texture, the female versions of the product are in white or pink having a more curved surface and an elegant look. However, the form and the surface qualities are not the only differences about male and female shavers. The male shavers usually have buttons with inscriptors as "charge control", a digital display of functions, and the ability to be charged in any wall socket whereas female version have only simple pictograms and can only be recharged in their stationary holders. In literature and according to some researchers the differences were assumed to be the stereotypical attributes of gender.

Since it was seen that the design of shavers were also influenced by the stereotypical attributes of gender in product design, in the next chapter the effects of social norms on design activity, design intuition, and the inspirations taking place in design activity has been argued. It was founded that, design manipulates and synthesizes abstract ideas, concepts, or knowledge to create a design proposal, as manipulates and synthesizes forms to create a new form, or both. Furthermore, through the literature survey, design was found out to be a cognitive process which coexists with cultural codifications compromising collective and individual environments. Thus, in the study, the design activity was not only taken as a discipline creating functional items but also meaning inducing objects. As well as structural and functional information, the design object also carries the user expectations and knowledge through its form.

Accordingly, design activity makes use of certain images which are collectively accepted as appropriate. Consequently, the object that has been created by the designer would mean the same to the user. In this sense objects are seen as items whose characteristics are retrieved in the user through their appeal and form. These characteristics that are recalled in the user about the object, may cross over different value systems like ethical, aesthetical and technical aspects of an individual and gender respectively. In other words, when a product crosses over different value systems, the product is making statements to the user. For such products this process is theorized by Athavankar as categorization, which was found as the most suitable methodology to explain how products were gendered through design. As it was asserted before individuals tend to consciously and unconsciously group objects, items and people around them according to their family resemblances, just like in the case of gender stereotypes. Therefore individuals may develop a tendency to group objects according to which gender they think the objects are appropriate for. As an example, a pocket knife and a sports car can be grouped as male objects and can be categorized under the category of males as they are usually associated with males.

The methodology further explains that, in such cases products have taxonomic identities making compound statements. The phrase "women's shoes" is a compound statement that the products make for the user. It explains that the shoes made for women has a relationship with any other object in the women's products category. As it is explained by the theory, for any product we use, there is a mental image in our minds for that particular product. That specific image of the product that individuals have in their minds is the prototype image for that category. Therefore, when we confront a new product belonging to that category

we tend to validate the new product according to the initial image in our minds to see whether it is close to the prototype or not.

By this means, for products which can be deemed as gendered, individuals have prototype product images which explains that category best to the individual. In other words, individuals firstly come to a decision about the products according to their lexical labels as in the compound statements “womens shoes” or “mens razors”. When individuals are confronted with a phrase like men’s razors, they tend to visually relate the product with any other object belonging in the males category like a sports car or like a power tool.

To test the methodology offered by Athavankar, a test has been prepared in which second grade industrial design students were asked to design two kettles, one for males and one for females. The projects were then graded by professional designers with a group of adjectives explaining the qualities for males and for females.

The results of the test were considerably successful in that the students projected the stereotypical images of gender on both of the kettles which were categorized for males and for females respectively. For each product drawn by the students a total amount of male value and a total amount of female value were received with the grading system designed by the use of adjectives. According to the total points that each product received, then the products were sorted from the highest male to the highest female to sustain an image library related with the gendering of kettles.

The test also had some weaknesses; the adjectives which were used to put forward the gender identity of products had not been tested before, and although they were considered as adjectives explaining the male and female stereotypes

respectively, there was the possibility that they may have different meaning for every individual according to their own personal experiences. On the other hand, the design students intentions and their own comments were lacking about the products they had submitted. Similarly, the professional designer's comments on what kind of qualities they concentrated on to categorize the objects as male or female were also lacking in the test.

However, when we consider the test and its results as a whole, the method proved successful in categorizing the kettles into two groups as male and female respectively without too much conflict despite the weaknesses of the chosen adjectives and grading system. Though the adjectives used in the forms distributed to the expert had not been tested before, they still served the purpose of depicting gender qualities in products as evident in the grading of the experts. When the projects drawn by the students are examined it can be seen that the students followed the same strategy that is followed in the contemporary market with razors and battery operated shavers and the drawings also revealed a potential to be explained by means of Athavankar's methodology which was taken as a basis for this study.

As it was found in the literature survey and in the examination of shavers and razors the reason why products for males and females differnetiate with respect to each other lies in their points of references. As a consequence of the industrial revolution and social roles the look of machinery is correlated with males and thus males' products. On the other hand, womens' products are correlated with womens' own body, natural references and other products related with women that bring to mind adjectives like nurturance, warmth, fragility, etc which are used to describe womens' qualities. The reflections of these references

in products manifests as making the products for males seem more complicated than they are. In other words, they are intentionally or unconsciously made to look more scientific or analytical, as in the example of battery operated shavers which the screws are visible in contrast to female shavers in which the screws are hidden. Also, the colors of black, silver grey, and matt grey are frequently used to create a machinery resemblence. To make the products look more complicated also the number of visible parts building the form of products are exaggerated in males' products and rugged surface structures are used more frequently. However, in females' products the torso of the womens body and other products having smooth surfaces seems to be the more frequently used points of reference. To make such objects look much softer and related to nature than they are, like the battery operated shavers example, the parts related with the technical aspects of the product are hidden beneath the surface. Even indicators about the functions of the products are less frequently used, and if used, pictograms are preffered. Also the colors used in womens' products are pastel colors in contrast to males'products. The surfaces also seem to be more continuous and smooth which can also be called as biomorphic that even the products having multiple parts do not reveal visual interruptions and look complete and organic in themselves. The qualities of products listed previously for males and females respectively can be observed in Appendix C in the list where kettles were sorted from highest masculine to highest feminine.

As a result, this study shows that social norms and values are consciously or unconsciously integrated into the design discipline. Thus, designers should be aware of the fact that these values could be used as a reference point while designing products for specific user groups since what we call aesthetics is not

just the visual appeal of the product but it is the “collectively accepted visual appeal” to which we respond to.

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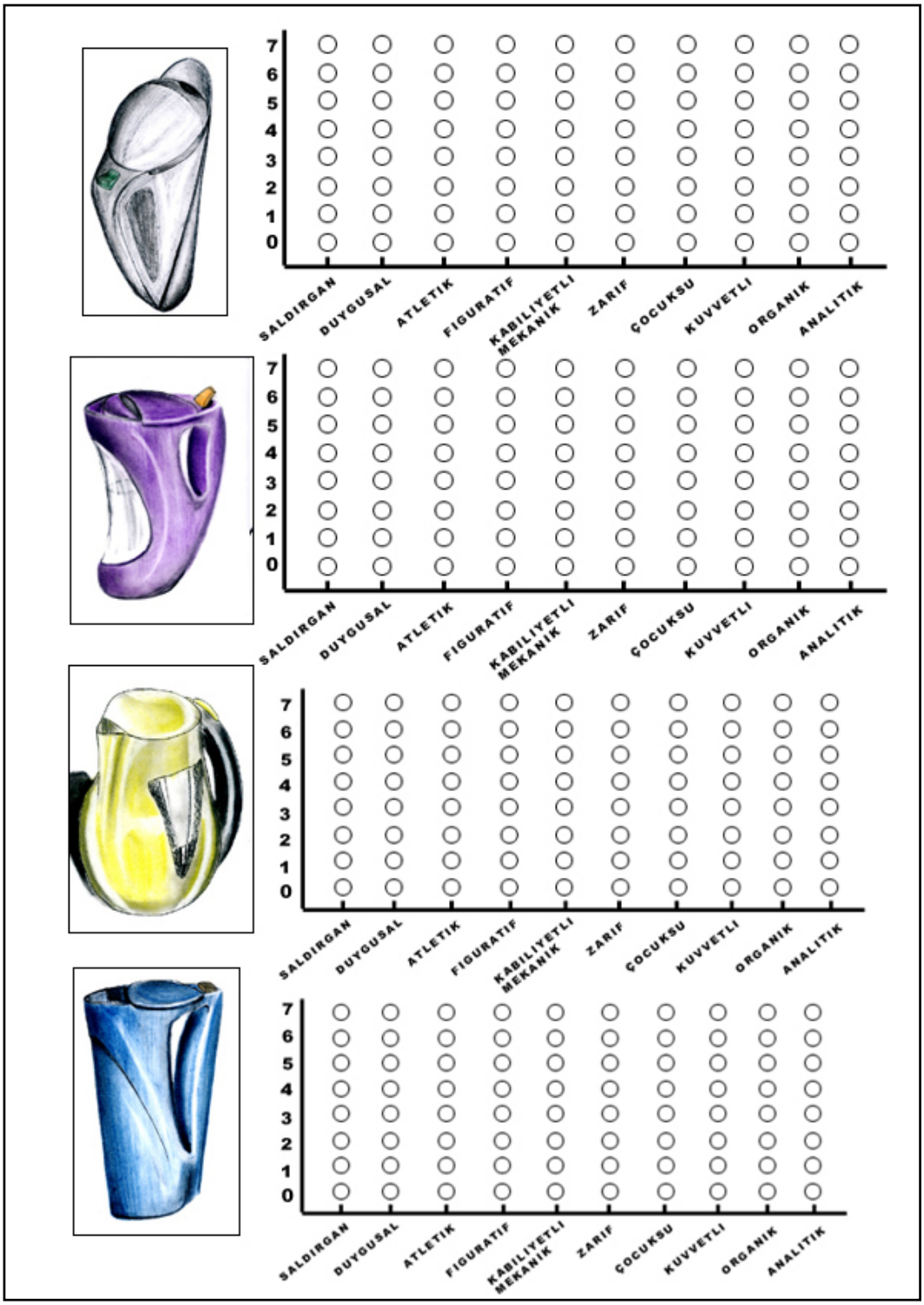
APPENDIX A

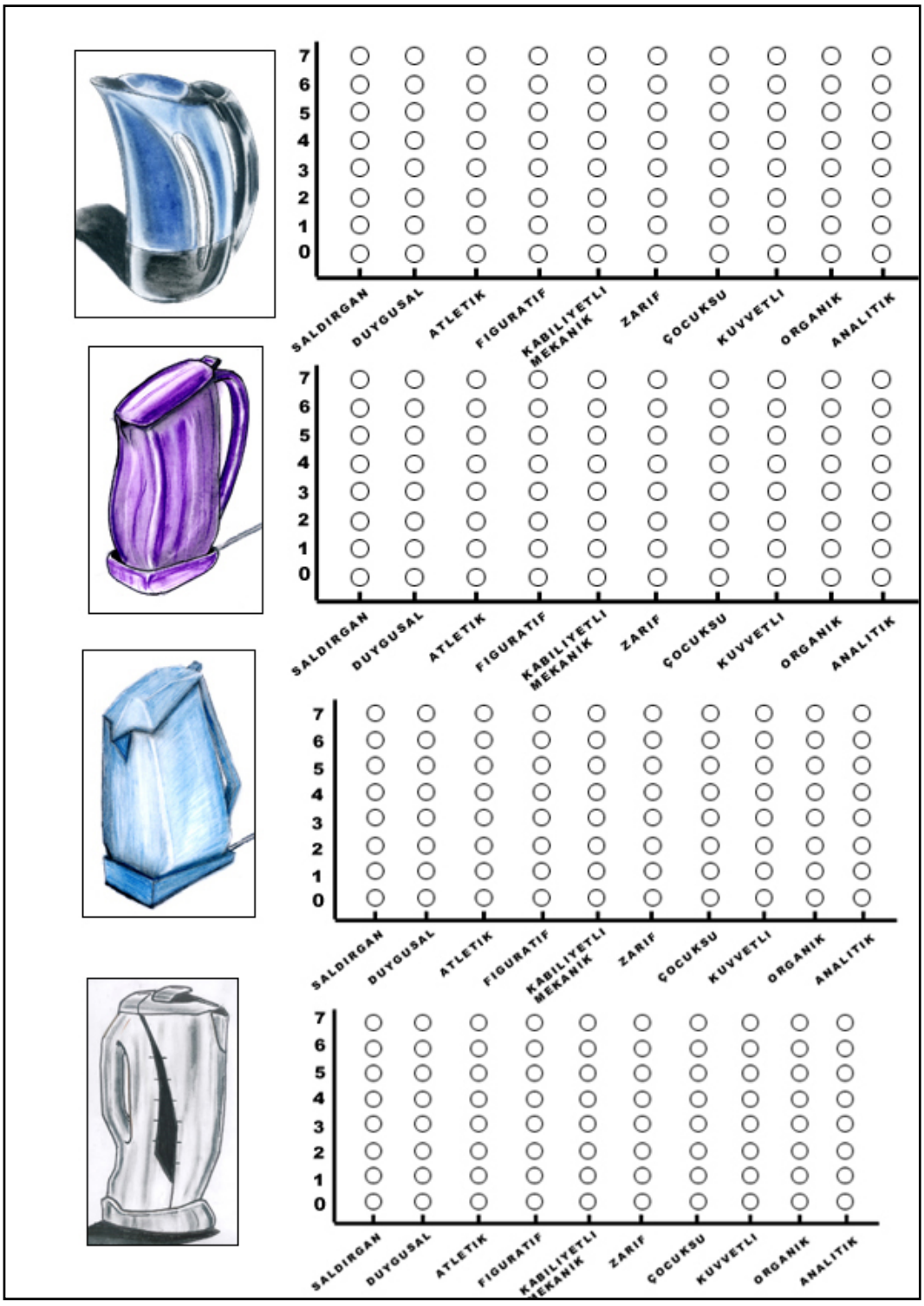
DESIGN BRIEF "KETTLE"

In this assignment you are to design two kettles (electrical water boiling container), one for male users and one for female users. Rather than making technological innovations or developing new working principles, you should contribute to the visual appeal of the product, which denotes it as a product for males and female separately in a stylistic manner. For each of the products you will design, an orthographic projection and perspective drawing is required. Each drawing should be on a separate A paper (four papers in total). Presentation technique is up to you but high drawing and rendering qualities are expected.

APPENDIX B

FORM DISTRIBUTED TO PROFFESIONAL DESIGNERS

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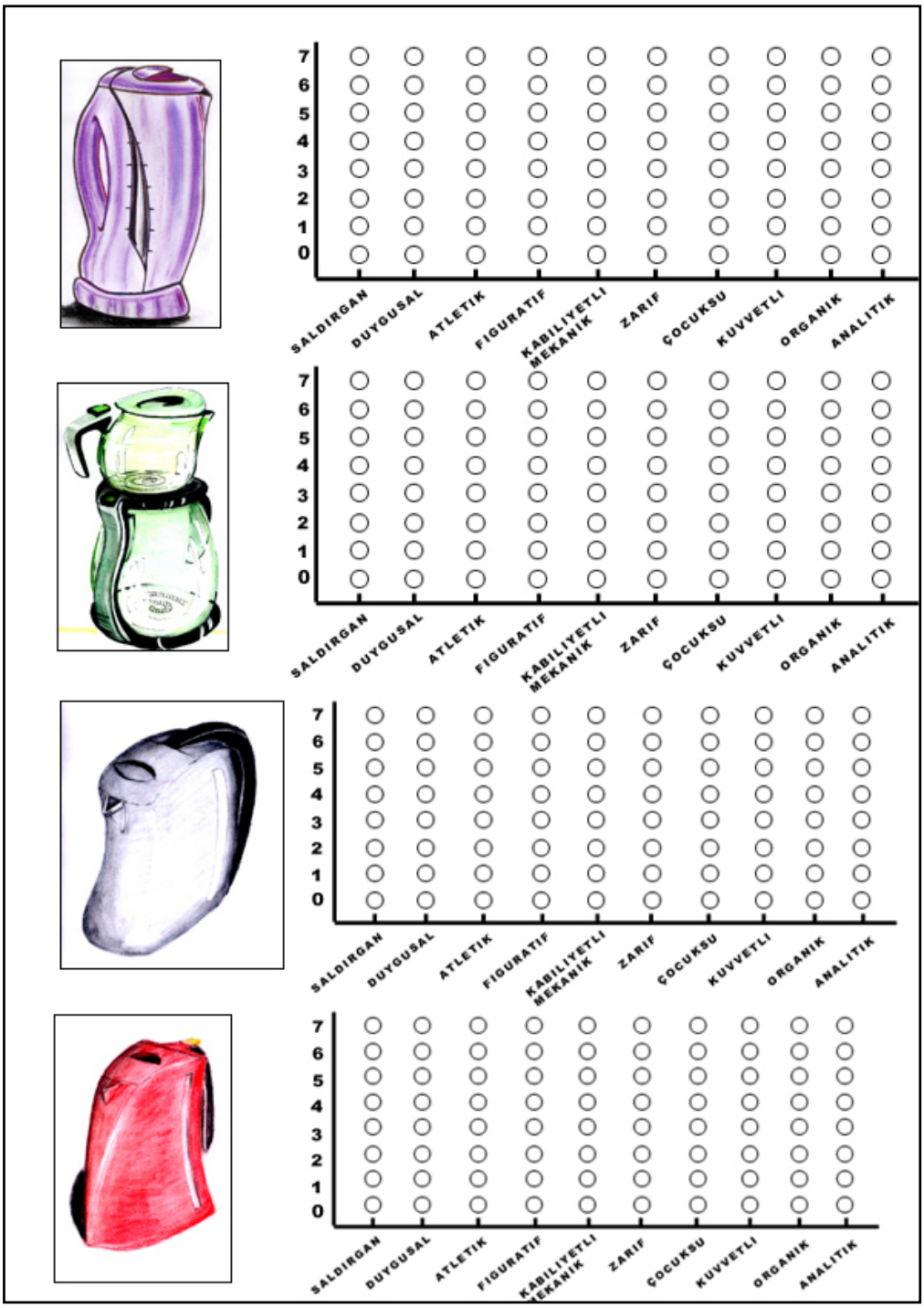
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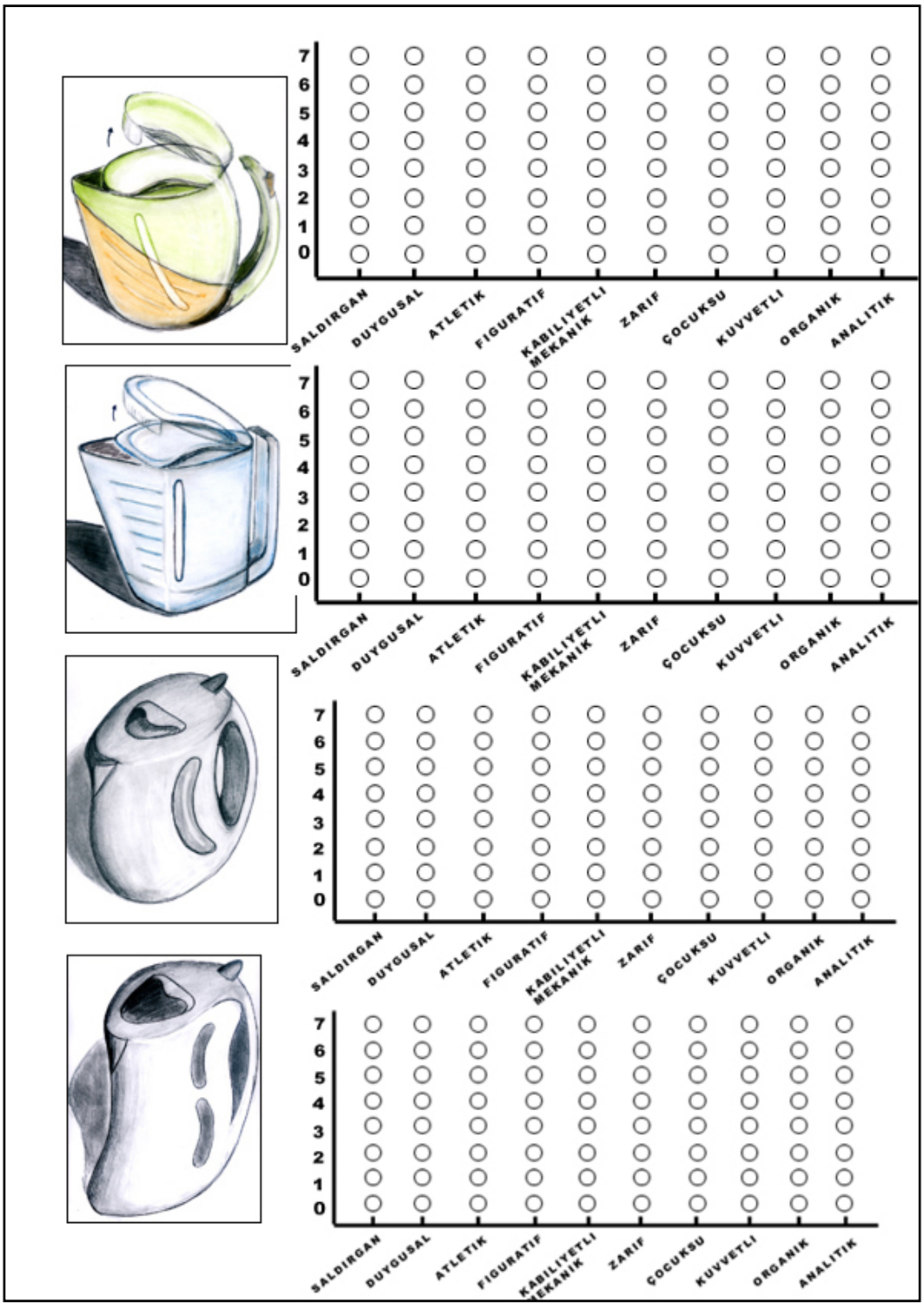
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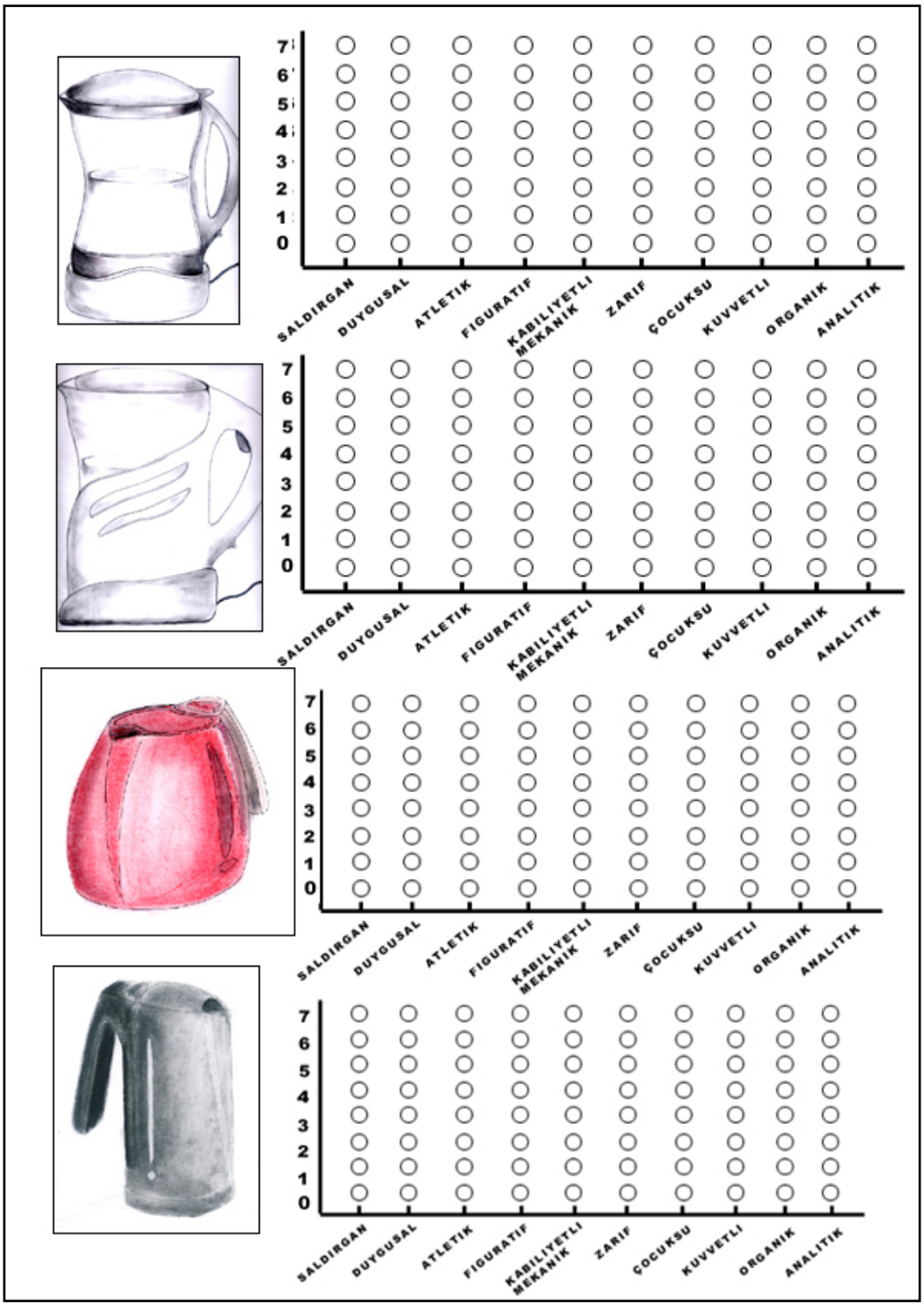
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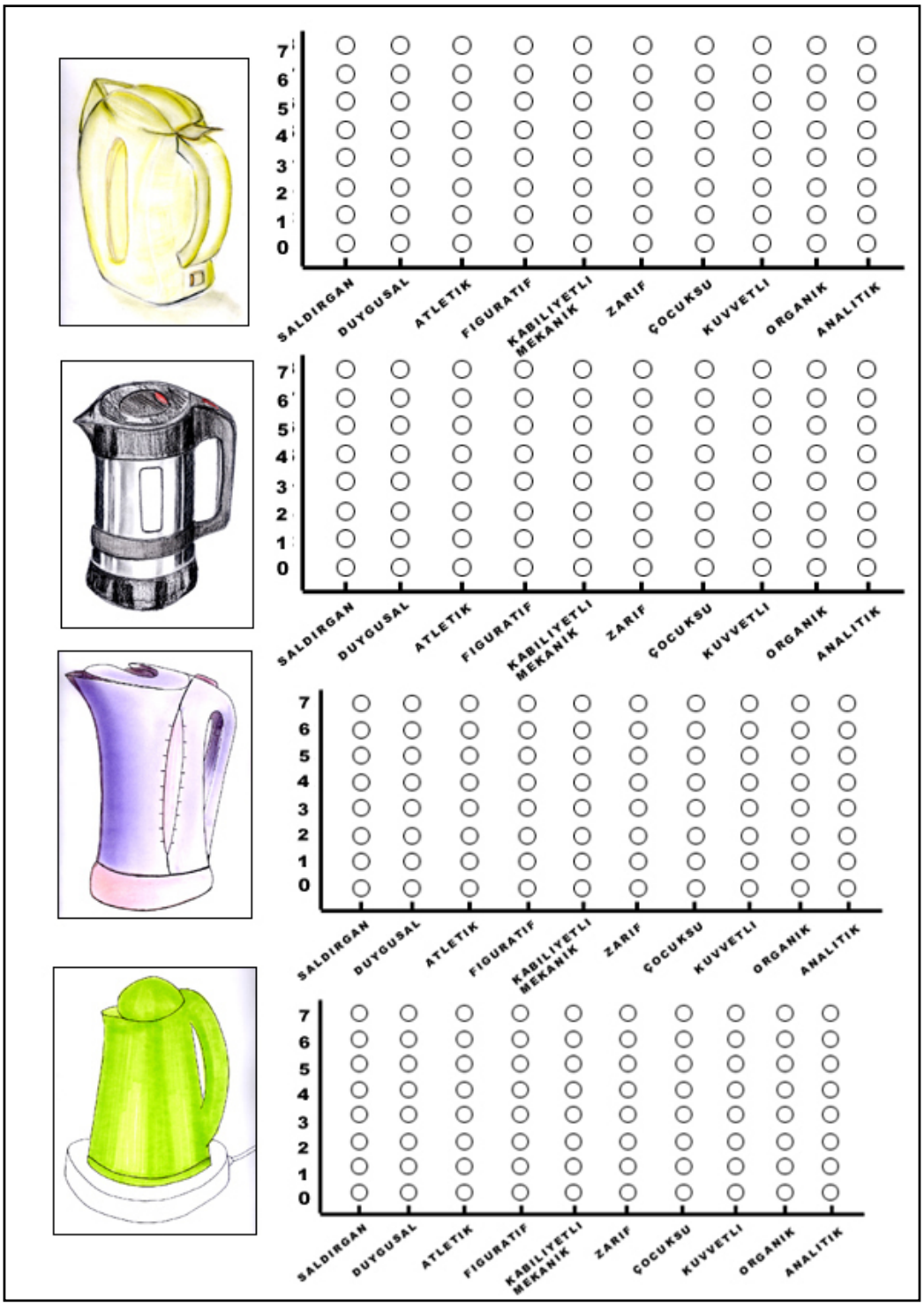
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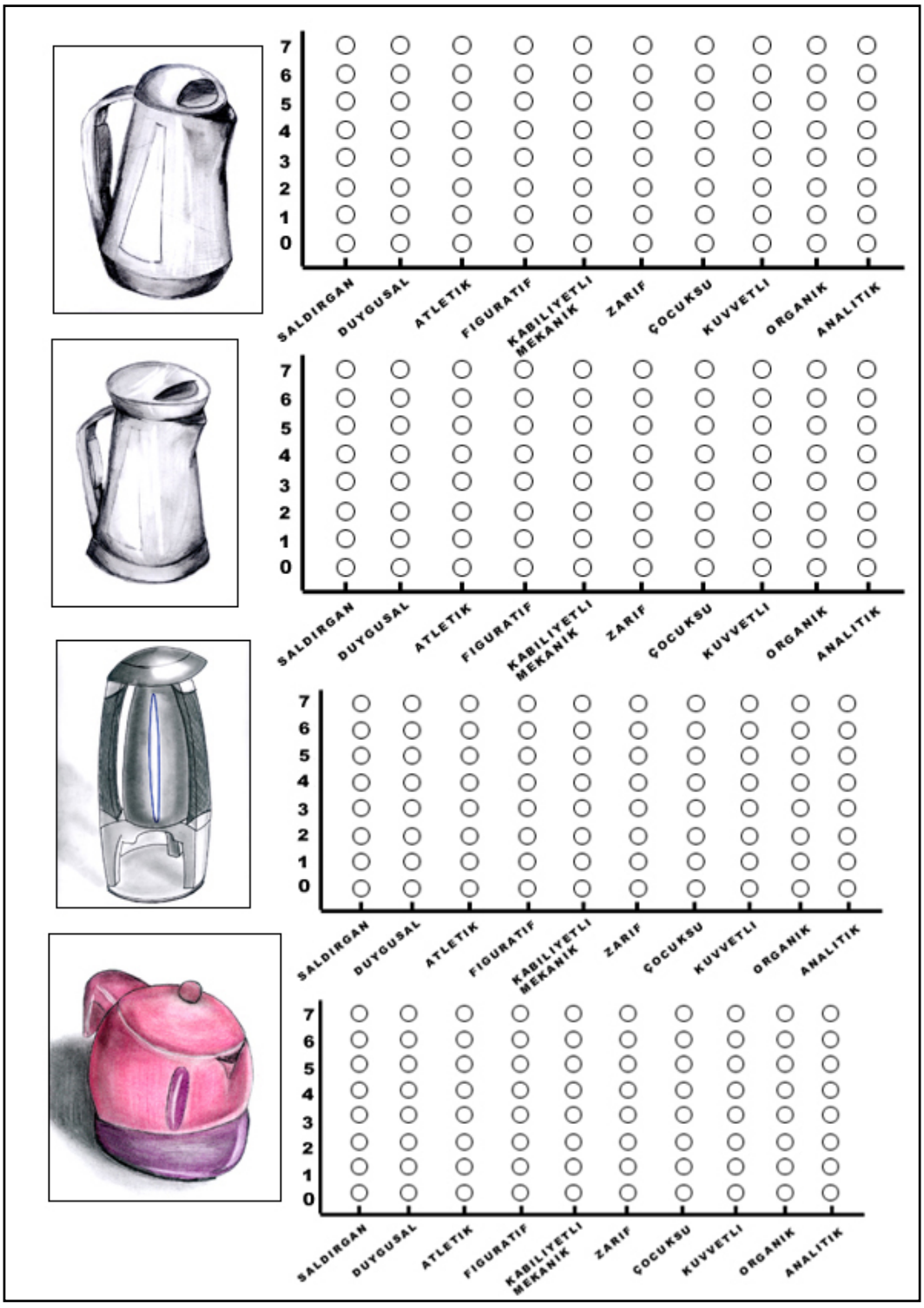
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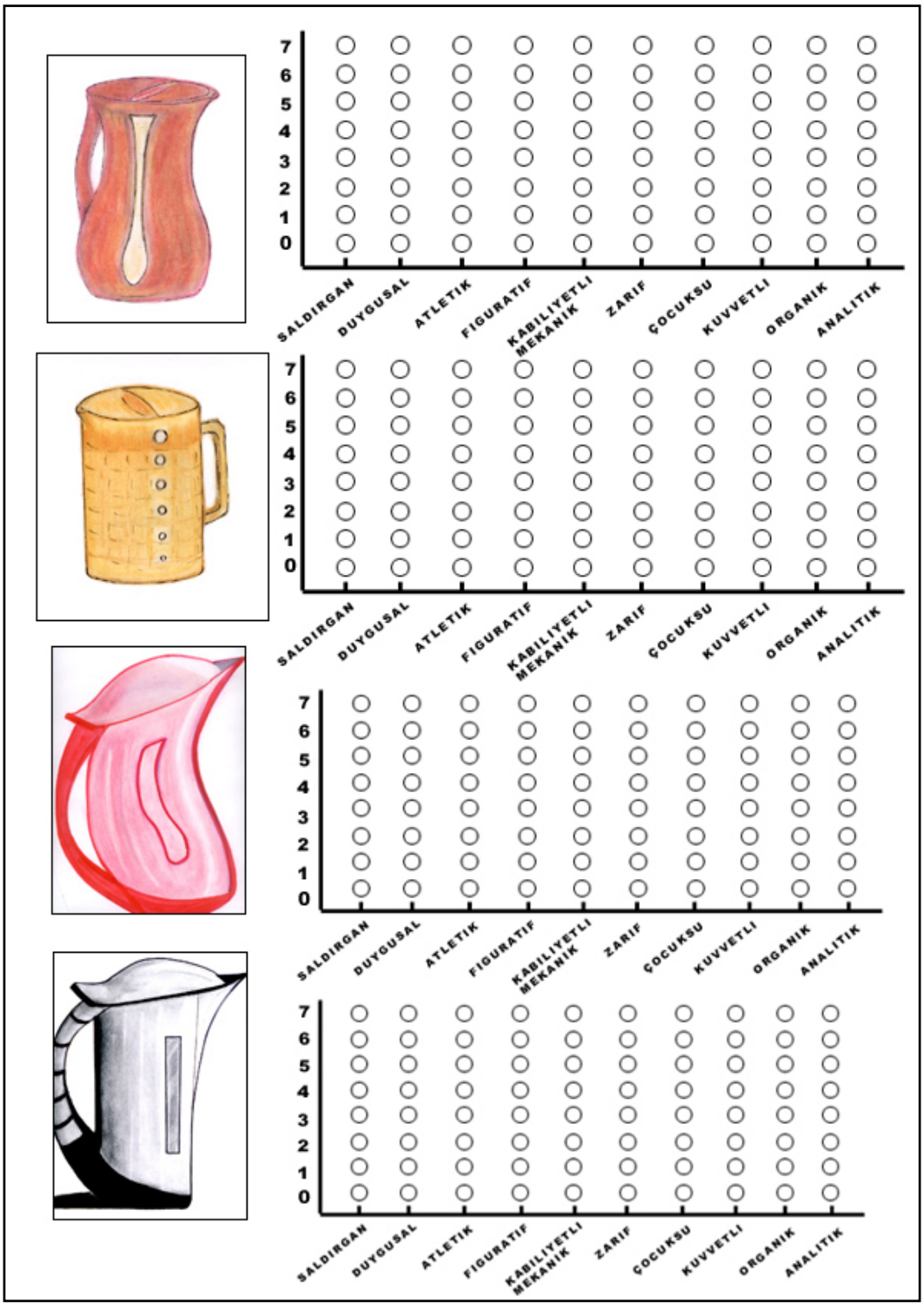
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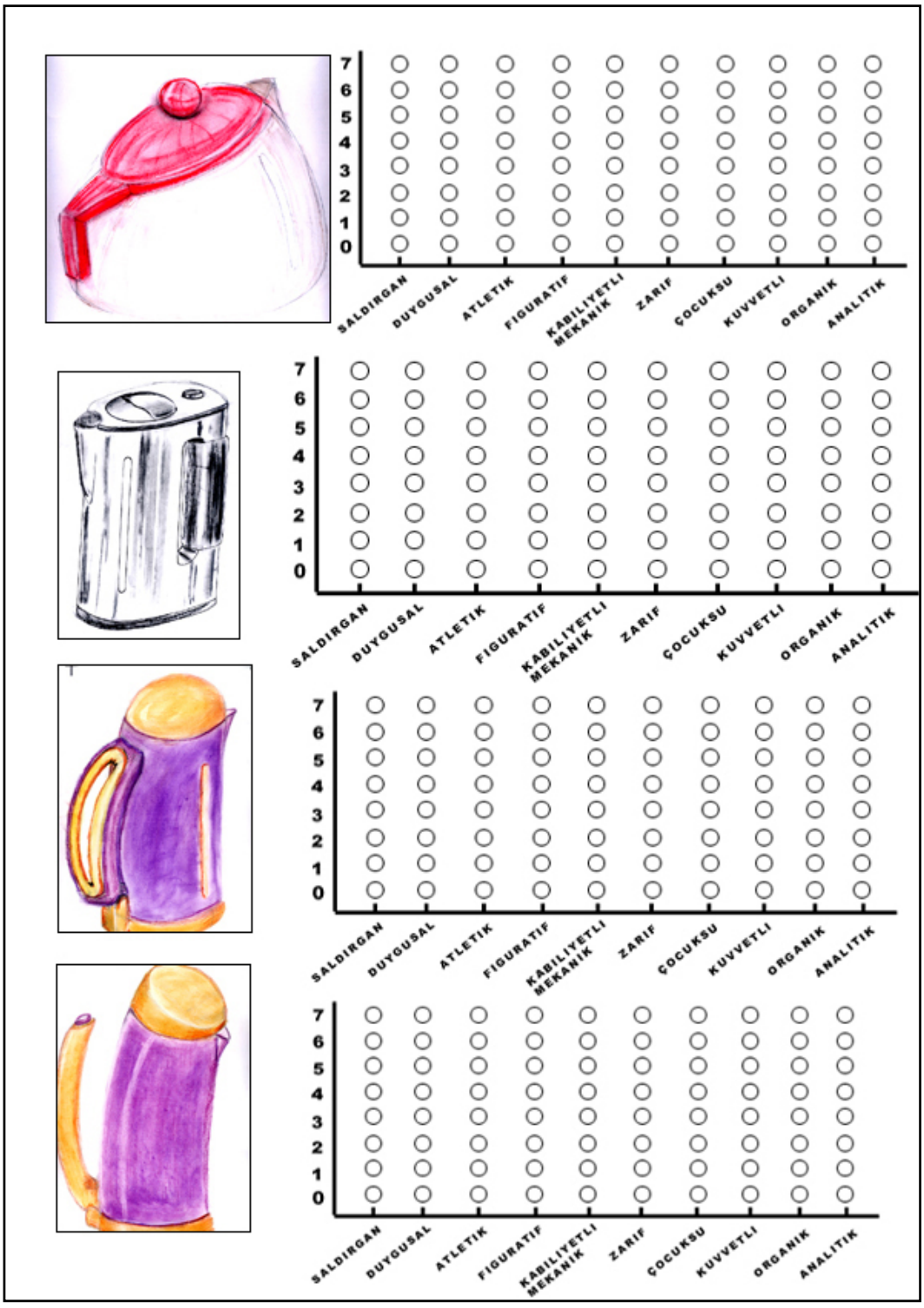
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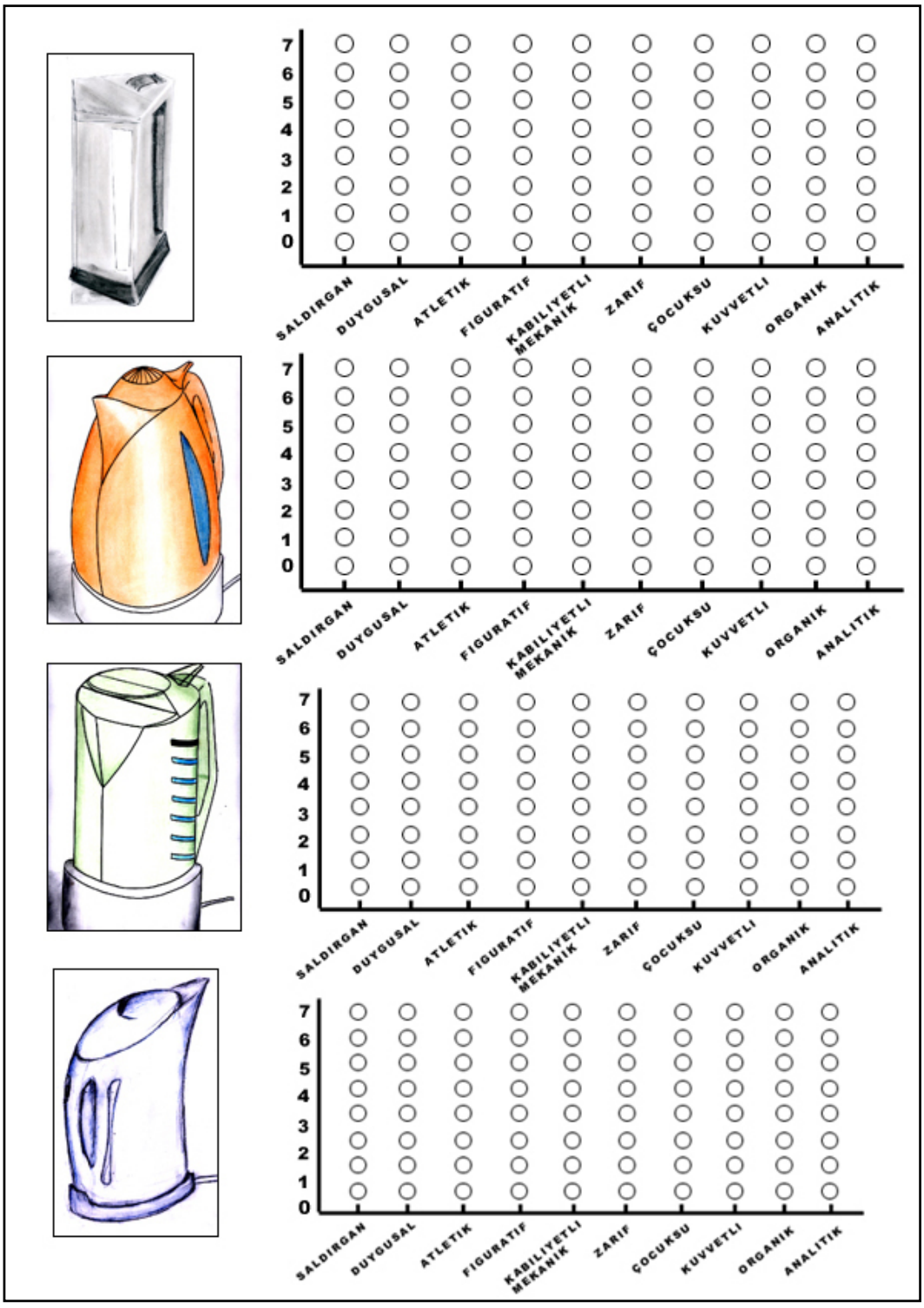
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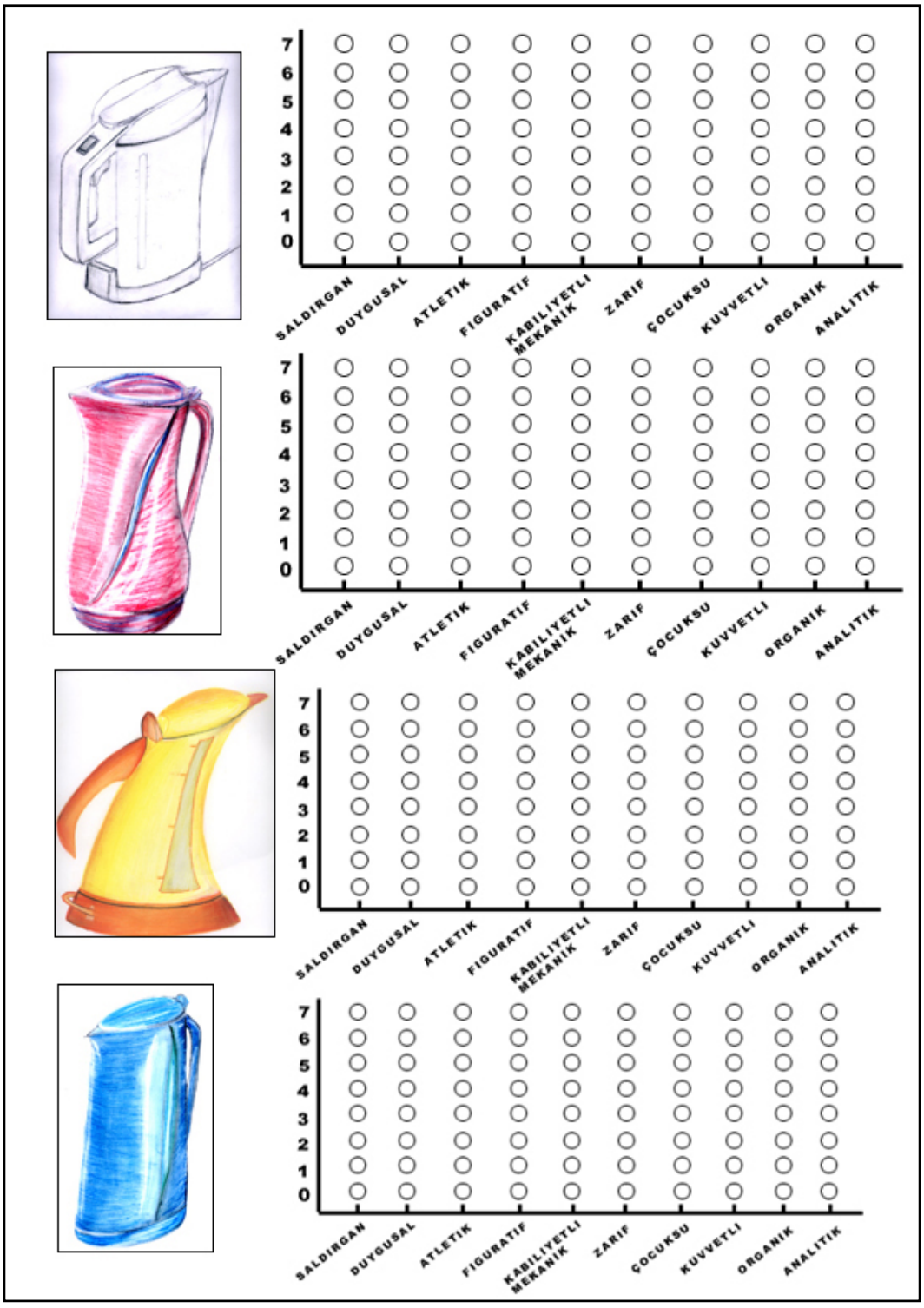
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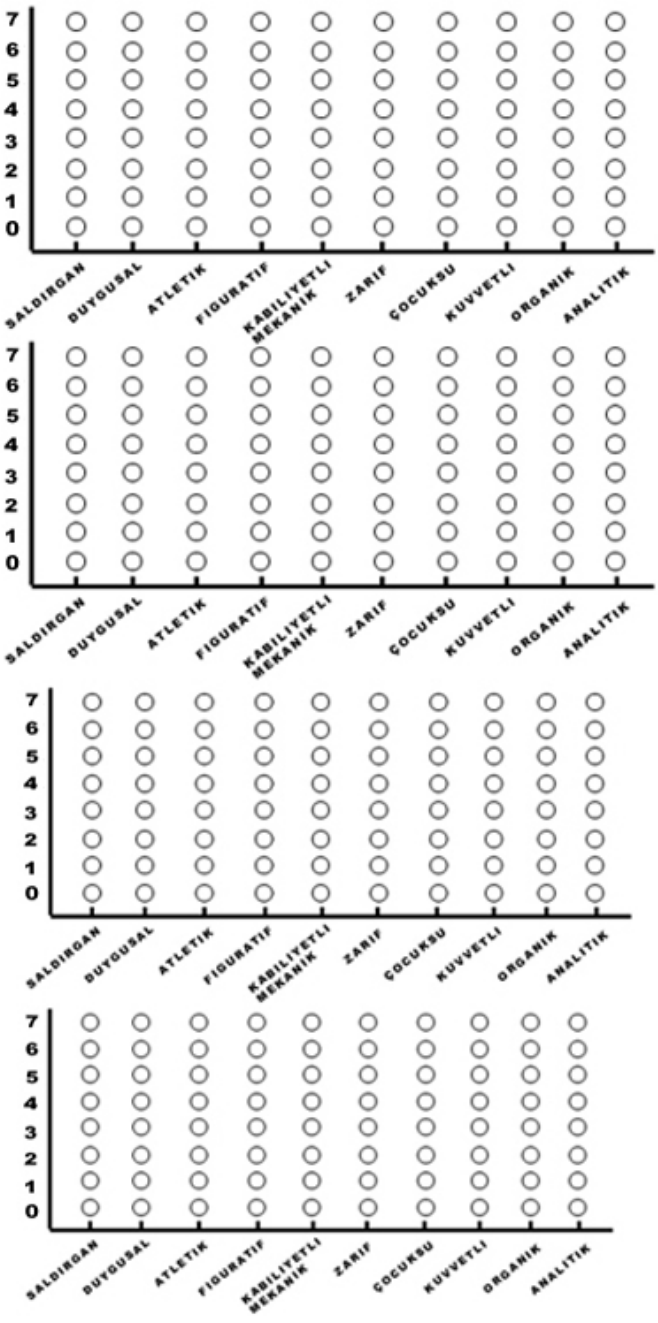
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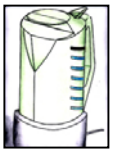
APPENDIX C

LIST OF KETTLES FROM HIGHEST MALE TO HIGHEST FEMALE

		MALE MEAN SUM	FEMALE MEAN SUM	MALE-FEMALE	RANKS
	M17	21.5	0.83	20.66	6M
	M2	26	5.33	20.66	6M
	M21	21.5	1.66	19.83	6M
	M9	25.33	6.16	19.16	6M
	M6	20.83	3	17.83	6M
	M19	17.83	2.66	15.16	6M

	M8	20.83	6.33	14.5	6M
	M15	17.66	3.66	14	6M
	M18	16.5	2.83	13.66	6M
	M3	16.66	3.33	13.33	6M
	M10	13.5	3.5	10	6M
	M12	18	8.16	9.83	6M
	M11	19.83	10.33	9.5	5M/1F
	M13	15	5.5	9.5	6M

	M4	13.16	5.66	7.5	4M/2F
	M22	14.83	8.66	6.16	6M
	FM7	14.83	8.83	6	1M/5F
	M24	12.66	7	5.66	4M/2F
	FM9	13.33	12.33	1	3M/3F
	M16	6.83	6	0.83	5M/1F
	M1	9.33	9.83	-0.5	4M/2F
	M5	10.66	11.33	-0.66	4M/2F

	M23	4	5.66	-1.66	5M/1F
	FM17	13.16	15	-1.83	4M/2F
	FM19	1.5	4.33	-2.83	2M/4F
	M20	6.33	9.83	-3.5	5M/1F
	FM12	8.83	13.5	-4.66	1M/5F
	FM2	11.16	15.83	-4.66	1M/5F
	FM6	8.33	14.33	-6	1M/5F
	FM1	6.66	13.5	-6.83	1M/5F

	FM11	6.66	14	-7.33	6F
	M7	8.83	16.33333333	-7.5	5M/1F
	FM24	5.66	13.5	-7.83	2M/4F
	M14	4.16	12.5	-8.33	4M/2F
	FM8	8	17.16	-9.16	1M/5F
	FM10	2.66	15	-12.33	1M/5F
	FM18	7.66	20.33	-12.66	2M/4F
	FM13	3.83	16.83	-13	6F

	FM20	3	16	-13	2M/4F
	FM23	1.83	15.5	-13.66	1M/5F
	FM16	4.16	18.66	-14.5	1M/5F
	FM3	2.5	18.5	-16	6F
	FM15	7.83	23.83	-16	1M/5F
	FM22	6.83	23.83	-17	6F
	FM4	2.16	19.66	-17.5	6F
	FM5	3.5	21	-17.5	1M/5F

	FM21	1.83	19.33	-17.5	2M/4F
	FM14	3.66	25.5	-21.83	1M/5F

APPENDIX D

DATA EVALUATION SHEET

F1	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F1 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F1 MFS**
EXP1	0	0	3	0	0		5	0	3	3	1	
EXP2	2	5	0	6	4		0	2	0	4	0	
EXP3	0	4	3	0	0		4	3	6	6	0	
EXP4	0	0	0	0	0		3	4	2	2	2	
EXP5	0	6	0	7	0		4	6	6	2	0	
EXP6	0	0	0	0	0		4	6	3	0	0	
	0.33	2.50	1.00	2.17	0.67	6.67	3.33	3.50	3.33	2.83	0.50	13.50
F2	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F2 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F2 MFS**
EXP1	5	5	2	0	1		0	0	0	0	0	
EXP2	4	5	4	0	4		5	0	3	0	4	
EXP3	1	0	3	0	0		4	3	7	5	7	
EXP4	1	0	0	0	0		3	3	6	4	3	
EXP5	6	5	6	7	5		6	0	7	2	6	
EXP6	0	0	1	2	0		6	1	4	2	4	
	2.83	2.50	2.67	1.50	1.67	11.17	4.00	1.17	4.50	2.17	4.00	15.83
F3	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F3 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F3 MFS**
EXP1	0	3	0	0	0		4	6	5	6	3	
EXP2	0	4	0	0	3		4	4	4	5	0	
EXP3	0	0	0	0	0		7	5	4	6	0	
EXP4	0	0	0	0	0		5	7	6	7	5	
EXP5	0	5	0	0	0		0	0	4	0	0	
EXP6	0	0	0	0	0		3	5	0	6	0	
	0.00	2.00	0.00	0.00	0.50	2.50	3.83	4.50	3.83	5.00	1.33	18.50
F4	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F4 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F4 MFS**
EXP1	0	1	0	0	0		5	3	6	6	3	
EXP2	0	4	0	0	2		3	0	0	3	4	
EXP3	0	1	2	0	1		4	5	2	6	3	
EXP4	0	1	0	0	0		6	5	6	6	3	
EXP5	0	0	0	0	0		7	0	5	3	3	
EXP6	0	1	0	0	0		5	1	6	5	4	
	0.00	1.33	0.33	0.00	0.50	2.17	5.00	2.33	4.17	4.83	3.33	19.67
F5	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F5 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F5 MFS**
EXP1	0	3	0	0	0		3	5	3	7	0	
EXP2	0	4	0	0	0		0	2	2	4	3	
EXP3	0	0	0	0	0		7	3	7	7	1	
EXP4	0	0	0	0	0		4	5	5	5	3	
EXP5	0	7	0	7	0		7	0	7	5	5	
EXP6	0	0	0	0	0		6	3	6	7	4	
	0.00	2.33	0.00	1.17	0.00	3.50	4.50	3.00	5.00	5.83	2.67	21.00
F6	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F6 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F6 MFS**
EXP1	0	0	0	3	3		5	5	3	5	0	
EXP2	0	5	0	3	5		3	4	4	0	3	
EXP3	0	1	2	1	0		0	0	0	6	0	
EXP4	0	4	0	2	3		2	3	3	3	3	
EXP5	7	2	0	5	4		6	0	6	2	2	
EXP6	0	0	0	0	0		3	5	0	7	3	
	1.17	2.00	0.33	2.33	2.50	8.33	3.17	2.83	2.67	3.83	1.83	14.33
F7	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F7 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F7 MFS**
EXP1	6	6	4	5	0		0	0	0	0	0	

EXP2	4	4	5	0	2		6	2	6	3	2	
EXP3	0	0	1	0	0		5	1	6	2	4	
EXP4	2	4	3	2	0		0	0	0	0	0	
EXP5	6	3	5	4	0		6	0	6	0	4	
EXP6	6	6	5	6	0		0	0	0	0	0	
	4.00	3.83	3.83	2.83	0.33	14.83	2.83	0.50	3.00	0.83	1.67	8.83
F8	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F8 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F8 MFS**
EXP1	0	2	0	0	3		3	1	5	6	4	
EXP2	2	4	4	0	3		4	0	5	4	6	
EXP3	0	0	0	0	0		3	0	0	5	0	
EXP4	0	0	2	3	0		2	4	4	4	3	
EXP5	4	4	7	6	1		7	0	7	6	7	
EXP6	0	0	3	0	0		3	0	2	3	5	
	1.00	1.67	2.67	1.50	1.17	8.00	3.67	0.83	3.83	4.67	4.17	17.17
F9	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F9 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F9 MFS**
EXP1	0	5	3	4	0		5	0	3	0	0	
EXP2	0	5	2	0	4		2	2	0	3	3	
EXP3	2	7	7	4	4		1	0	7	0	0	
EXP4	2	2	2	0	0		0	2	5	5	3	
EXP5	7	4	7	5	1		7	0	6	0	4	
EXP6	0	3	0	0	0		5	0	4	6	1	
	1.83	4.33	3.50	2.17	1.50	13.33	3.33	0.67	4.17	2.33	1.83	12.33
F10	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F10 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F10 MFS**
EXP1	0	0	0	0	0		3	5	5	5	4	
EXP2	3	3	4	0	0		3	0	0	4	0	
EXP3	0	0	0	0	0		4	0	3	4	0	
EXP4	0	0	0	2	0		3	5	6	2	2	
EXP5	3	0	0	1	0		1	0	5	0	0	
EXP6	0	0	0	0	0		6	4	5	5	6	
	1.00	0.50	0.67	0.50	0.00	2.67	3.33	2.33	4.00	3.33	2.00	15.00
F11	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F11 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F11 MFS**
EXP1	0	5	0	3	0		4	3	0	6	0	
EXP2	1	7	2	2	3		6	4	5	5	2	
EXP3	0	1	0	1	1		4	0	6	6	0	
EXP4	0	0	0	3	0		2	1	2	4	0	
EXP5	3	5	0	3	0		0	0	4	0	0	
EXP6	0	0	0	0	0		5	2	6	6	1	
	0.67	3.00	0.33	2.00	0.67	6.67	3.50	1.67	3.83	4.50	0.50	14.00
F12	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F12 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F12 MFS**
EXP1	0	0	3	0	2		5	0	0	3	6	
EXP2	2	3	3	0	2		4	0	5	0	0	
EXP3	0	0	0	0	1		6	1	7	7	1	
EXP4	0	5	3	3	2		6	0	0	0	3	
EXP5	4	1	3	3	0		5	0	7	2	1	
EXP6	3	3	2	2	3		4	0	0	5	3	
	1.50	2.00	2.33	1.33	1.67	8.83	5.00	0.17	3.17	2.83	2.33	13.50
F13	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F13 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F13 MFS**
EXP1	0	0	0	0	0		2	2	5	5	0	
EXP2	0	2	0	0	3		6	5	6	5	0	
EXP3	1	0	0	0	0		5	5	6	6	0	
EXP4	0	0	6	0	0		2	5	0	5	0	
EXP5	0	7	0	4	0		0	0	7	5	0	
EXP6	0	0	0	0	0		2	5	6	6	0	
	0.17	1.50	1.00	0.67	0.50	3.83	2.83	3.67	5.00	5.33	0.00	16.83
F14	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F14 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F14 MFS**
EXP1	0	0	0	0	0		5	6	3	7	3	
EXP2	3	2	0	0	2		2	7	7	3	0	
EXP3	0	0	0	0	0		7	1	7	7	1	
EXP4	0	0	0	0	0		6	7	7	7	2	
EXP5	7	0	0	6	2		7	4	7	7	0	
EXP6	0	0	0	0	0		7	7	7	7	5	
	1.67	0.33	0.00	1.00	0.67	3.67	5.67	5.33	6.33	6.33	1.83	25.50

F15	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	F15 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	F15 MFS
EXP1	0	0	0	0	0		6	3	6	5	6	
EXP2	4	0	4	0	2		6	0	6	0	0	
EXP3	3	0	2	0	0		7	2	7	6	5	
EXP4	0	0	0	0	0		6	6	6	6	4	
EXP5	7	4	6	6	6		7	5	7	0	6	
EXP6	3	0	0	0	0		7	6	0	6	6	
	2.83	0.67	2.00	1.00	1.33	7.83	6.50	3.67	5.33	3.83	4.50	23.83
F16	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	F16 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	F16 MFS
EXP1	0	0	0	0	0		4	2	5	6	5	
EXP2	3	4	5	0	2		5	0	4	4	5	
EXP3	0	0	0	0	0		4	0	0	4	0	
EXP4	0	0	0	0	0		5	2	6	6	2	
EXP5	0	0	5	6	0		7	0	7	0	7	
EXP6	0	0	0	0	0		6	0	5	5	6	
	0.50	0.67	1.67	1.00	0.33	4.17	5.17	0.67	4.50	4.17	4.17	18.67
F17	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	F17 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	F17 MFS
EXP1	6	5	3	0	0		0	0	0	0	0	
EXP2	5	6	6	2	5		6	0	6	5	5	
EXP3	0	0	0	0	0		4	1	7	6	2	
EXP4	0	0	1	6	0		5	4	6	5	2	
EXP5	4	4	3	6	0		5	0	7	0	4	
EXP6	2	4	5	6	0		5	0	0	0	5	
	2.83	3.17	3.00	3.33	0.83	13.17	4.17	0.83	4.33	2.67	3.00	15.00
F18	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	F18 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	F18 MFS
EXP1	0	0	0	0	0		4	4	4	6	4	
EXP2	2	4	0	0	2		2	5	5	6	0	
EXP3	0	4	0	0	0		7	0	6	6	1	
EXP4	0	6	0	0	0		4	5	6	6	2	
EXP5	7	7	3	7	4		6	0	7	2	5	
EXP6	0	0	0	0	0		5	7	5	0	2	
	1.50	3.50	0.50	1.17	1.00	7.67	4.67	3.50	5.50	4.33	2.33	20.33
F19	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	F19 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	F19 MFS
EXP1	0	0	0	0	0		1	0	0	2	0	
EXP2	0	0	0	0	0		0	0	0	0	0	
EXP3	0	0	0	0	0		3	3	4	3	0	
EXP4	0	0	0	0	0		0	6	0	0	0	
EXP5	4	5	0	0	0		2	2	0	0	0	
EXP6	0	0	0	0	0		0	0	0	0	0	
	0.67	0.83	0.00	0.00	0.00	1.50	1.00	1.83	0.67	0.83	0.00	4.33
F20	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	F20 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	F20 MFS
EXP1	0	0	0	0	0		5	5	4	6	0	
EXP2	0	2	3	0	0		4	3	5	3	2	
EXP3	0	0	0	0	0		7	3	7	6	0	
EXP4	0	0	0	0	0		5	0	3	7	0	
EXP5	5	2	0	6	0		1	0	5	0	0	
EXP6	0	0	0	0	0		3	4	0	6	2	
	0.83	0.67	0.50	1.00	0.00	3.00	4.17	2.50	4.00	4.67	0.67	16.00
F21	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	F21 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	F21 MFS
EXP1	0	5	0	0	0		3	5	6	6	2	
EXP2	0	0	0	0	0		4	3	4	3	0	
EXP3	0	0	0	0	0		6	5	6	6	0	
EXP4	0	0	0	0	0		7	5	5	6	1	
EXP5	1	2	0	3	0		6	1	7	0	2	
EXP6	0	0	0	0	0		2	2	5	7	1	
	0.17	1.17	0.00	0.50	0.00	1.83	4.67	3.50	5.50	4.67	1.00	19.33
F22	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	F22 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	F22 MFS
EXP1	3	0	0	0	0		6	3	3	6	6	
EXP2	5	3	4	0	3		7	3	7	3	6	
EXP3	3	4	0	0	0		7	0	7	7	0	
EXP4	0	0	0	0	0		2	7	7	6	1	
EXP5	6	0	1	4	0		5	2	7	7	2	
EXP6	0	0	5	0	0		7	2	6	7	4	

	2.83	1.17	1.67	0.67	0.50	6.83	5.67	2.83	6.17	6.00	3.17	23.83
F23	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F23 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F23 MFS**
EXP1	0	0	0	0	0		3	5	5	1	2	
EXP2	0	2	0	0	2		3	5	4	4	0	
EXP3	0	0	2	0	0		4	1	3	0	1	
EXP4	0	0	0	0	0		7	5	3	6	1	
EXP5	0	1	2	2	0		6	0	5	0	3	
EXP6	0	0	0	0	0		3	2	6	2	3	
	0.00	0.50	0.67	0.33	0.33	1.83	4.33	3.00	4.33	2.17	1.67	15.50
F24	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**F24 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**F24 MFS**
EXP1	0	0	0	0	0		4	1	2	6	5	
EXP2	4	5	5	2	4		6	2	1	4	5	
EXP3	0	3	1	0	0		4	0	5	2	1	
EXP4	0	0	1	0	0		1	1	2	4	0	
EXP5	3	2	0	4	0		0	3	4	0	0	
EXP6	0	0	0	0	0		5	2	3	5	3	
	1.17	1.67	1.17	1.00	0.67	5.67	3.33	1.50	2.83	3.50	2.33	13.50

M1	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**M1 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**M1 MFS**
EXP1	2	3	3	0	0		1	0	3	3	1	
EXP2	2	5	0	6	4		0	2	0	4	0	
EXP3	0	4	3	0	0		4	3	6	6	0	
EXP4	3	2	0	0	0		0	1	3	0	0	
EXP5	0	6	0	7	0		4	6	6	2	0	
EXP6	3	3	0	0	0		1	2	0	1	0	
	1.67	3.83	1.00	2.17	0.67	9.33	1.67	2.33	3.00	2.67	0.17	9.83
M2	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**M2 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**M2 MFS**
EXP1	6	6	5	5	6		0	0	0	0	0	
EXP2	5	6	6	6	6		0	0	0	0	5	
EXP3	0	4	3	7	6		2	4	3	1	6	
EXP4	5	6	6	7	4		0	0	0	0	0	
EXP5	0	5	7	7	5		0	0	7	0	4	
EXP6	5	4	5	7	6		0	0	0	0	0	
	3.50	5.17	5.33	6.50	5.50	26.00	0.33	0.67	1.67	0.17	2.50	5.33
M3	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**M3 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**M3 MFS**
EXP1	3	5	2	3	1		0	0	0	0	0	
EXP2	3	6	3	3	5		0	0	0	0	4	
EXP3	0	6	6	0	0		0	0	5	1	0	
EXP4	3	4	6	6	0		0	0	3	0	0	
EXP5	5	3	4	3	0		0	0	5	0	2	
EXP6	4	5	5	6	0		0	0	0	0	0	
	3.00	4.83	4.33	3.50	1.00	16.67	0.00	0.00	2.17	0.17	1.00	3.33
M4	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**M4 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**M4 MFS**
EXP1	4	5	5	4	3		0	0	5	0	0	
EXP2	0	4	0	0	3		0	0	2	2	0	
EXP3	1	6	5	0	1		2	0	4	6	0	
EXP4	0	4	3	3	5		0	0	0	0	0	
EXP5	6	4	0	0	3		5	0	5	0	0	
EXP6	1	5	0	4	0		0	0	3	0	0	
	2.00	4.67	2.17	1.83	2.50	13.17	1.17	0.00	3.17	1.33	0.00	5.67
M5	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**M5 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**M5 MFS**
EXP1	0	5	2	0	0		4	0	0	0	0	
EXP2	3	6	5	4	4		3	0	2	2	5	
EXP3	0	0	0	0	0		7	1	6	7	1	
EXP4	2	5	4	6	0		0	0	0	2	0	
EXP5	0	2	1	6	0		7	3	5	5	4	
EXP6	2	2	3	2	0		0	0	0	0	4	
	1.17	3.33	2.50	3.00	0.67	10.67	3.50	0.67	2.17	2.67	2.33	11.33

M6	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	M6 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	M6 MFS
EXP1	4	5	6	6	3		0	0	0	0	3	
EXP2	2	7	3	6	6		0	0	0	0	3	
EXP3	0	6	3	2	2		0	0	0	0	0	
EXP4	4	4	5	6	6		0	0	0	0	0	
EXP5	7	2	4	6	3		3	0	6	0	3	
EXP6	5	3	4	5	0		0	0	0	0	0	
	3.67	4.50	4.17	5.17	3.33	20.83	0.50	0.00	1.00	0.00	1.50	3.00
M7	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	M7 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	M7 MFS
EXP1	0	0	0	0	0		5	3	5	6	6	
EXP2	4	6	0	0	3		3	0	2	3	0	
EXP3	0	4	0	0	0		2	0	7	5	0	
EXP4	0	0	0	0	0		3	5	0	2	2	
EXP5	5	5	0	4	0		5	0	6	0	4	
EXP6	2	4	5	6	5		7	8	6	2	1	
	1.83	3.17	0.83	1.67	1.33	8.83	4.17	2.67	4.33	3.00	2.17	16.33
M8	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	M8 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	M8 MFS
EXP1	5	0	0	6	4		0	0	0	0	0	
EXP2	7	5	6	4	5		3	0	7	0	5	
EXP3	0	4	4	7	7		0	0	7	1	0	
EXP4	4	4	5	6	6		0	0	1	0	0	
EXP5	0	1	7	0	3		4	0	7	0	3	
EXP6	5	7	3	7	3		0	0	0	0	0	
	3.50	3.50	4.17	5.00	4.67	20.83	1.17	0.00	3.67	0.17	1.33	6.33
M9	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	M9 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	M9 MFS
EXP1	6	6	0	6	6		0	0	6	0	0	
EXP2	5	5	3	3	5		0	0	3	0	2	
EXP3	1	7	7	6	7		0	0	7	0	0	
EXP4	7	5	4	7	0		0	0	3	0	0	
EXP5	6	5	7	7	3		0	5	7	0	4	
EXP6	5	6	6	6	5		0	0	0	0	0	
	5.00	5.67	4.50	5.83	4.33	25.33	0.00	0.83	4.33	0.00	1.00	6.17
M10	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	M10 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	M10 MFS
EXP1	5	4	3	6	4		0	0	3	0	0	
EXP2	4	4	5	7	3		5	0	0	0	2	
EXP3	0	0	2	0	0		0	0	4	0	1	
EXP4	5	0	4	3	0		0	0	3	0	0	
EXP5	3	0	0	0	2		0	0	3	0	0	
EXP6	5	4	3	5	0		0	0	0	0	0	
	3.67	2.00	2.83	3.50	1.50	13.50	0.83	0.00	2.17	0.00	0.50	3.50
M11	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	M11 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	M11 MFS
EXP1	5	6	5	6	6		5	0	0	0	0	
EXP2	6	6	6	2	5		3	0	2	0	5	
EXP3	1	0	1	2	0		4	0	7	7	7	
EXP4	7	4	7	4	0		0	0	0	5	0	
EXP5	6	1	5	6	4		0	0	6	0	4	
EXP6	5	5	4	4	0		0	0	0	4	3	
	5.00	3.67	4.67	4.00	2.50	19.83	2.00	0.00	2.50	2.67	3.17	10.33
M12	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	M12 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	M12 MFS
EXP1	6	3	4	0	0		0	0	0	3	0	
EXP2	6	6	7	0	4		5	0	5	2	6	
EXP3	0	5	6	4	4		0	0	5	4	0	
EXP4	6	6	5	6	0		0	0	2	0	0	
EXP5	5	5	6	2	0		5	0	5	0	2	
EXP6	5	4	3	0	0		0	0	0	5	0	
	4.67	4.83	5.17	2.00	1.33	18.00	1.67	0.00	2.83	2.33	1.33	8.17
M13	Saldırga	Kuvvetli	Atletik	Analitik	Mekanik	M13	Duygusal	Çocuksu	Figuratif	Organik	Zarif	M13

	n					MMS						MFS
EXP1	3	2	5	6	2		0	0	0	6	0	
EXP2	2	6	0	0	3		0	0	0	4	0	
EXP3	0	5	5	3	3		0	0	4	4	0	
EXP4	5	4	3	6	0		0	0	2	1	0	
EXP5	1	2	0	5	3		4	0	4	4	0	
EXP6	3	5	5	3	0		0	0	0	0	0	
M13 MMS	2.33	4.00	3.00	3.83	1.83	15.00	0.67	0.00	1.67	3.17	0.00	5.50
M14	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**M14 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**M14 MFS**
EXP1	0	0	0	0	0		1	0	1	4	0	
EXP2	0	3	0	0	2		0	0	2	4	2	
EXP3	0	0	0	0	0		6	2	4	7	0	
EXP4	1	3	0	0	0		3	0	4	0	0	
EXP5	3	5	0	3	0		7	3	7	3	5	
EXP6	0	3	2	0	0		3	5	2	0	0	
M14 MMS	0.67	2.33	0.33	0.50	0.33	4.17	3.33	1.67	3.33	3.00	1.17	12.50
M15	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**M15 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**M15 MFS**
EXP1	3	4	6	6	5		0	0	0	0	0	
EXP2	6	4	3	4	2		5	0	2	0	0	
EXP3	0	1	0	4	4		0	0	0	0	0	
EXP4	6	5	5	6	5		2	0	2	0	0	
EXP5	7	0	0	1	0		5	1	5	0	0	
EXP6	6	3	5	5	0		0	0	0	0	0	
	4.67	2.83	3.17	4.33	2.67	17.67	2.00	0.17	1.50	0.00	0.00	3.67
M16	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**M16 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**M16 MFS**
EXP1	2	4	2	0	3		2	0	0	0	3	
EXP2	1	3	0	0	2		2	0	0	0	4	
EXP3	0	1	1	0	0		0	0	0	0	0	
EXP4	2	2	1	0	0		0	0	1	4	1	
EXP5	0	4	5	5	0		6	0	6	0	6	
EXP6	0	0	3	0	0		0	0	0	0	1	
	0.83	2.33	2.00	0.83	0.83	6.83	1.67	0.00	1.17	0.67	2.50	6.00
M17	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**M17 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**M17 MFS**
EXP1	5	4	5	5	5		0	0	0	0	0	
EXP2	4	6	4	6	5		0	0	0	0	0	
EXP3	1	4	4	4	4		0	0	1	0	0	
EXP4	5	3	4	5	4		0	0	0	0	0	
EXP5	4	5	1	6	0		0	0	4	0	0	
EXP6	4	6	6	5	5		0	0	0	0	0	
	3.83	4.67	4.00	5.17	3.83	21.50	0.00	0.00	0.83	0.00	0.00	0.83
M18	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**M18 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**M18 MFS**
EXP1	1	2	3	7	3		0	0	0	0	0	
EXP2	2	5	5	5	4		2	0	0	0	5	
EXP3	0	5	4	3	3		0	0	4	0	0	
EXP4	3	3	3	3	6		0	3	0	0	0	
EXP5	0	1	0	4	0		2	1	0	0	0	
EXP6	4	6	4	5	5		0	0	0	0	0	
	1.67	3.67	3.17	4.50	3.50	16.50	0.67	0.67	0.67	0.00	0.83	2.83
M19	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	**M19 MMS**	Duygusal	Çocuksu	Figuratif	Organik	Zarif	**M19 MFS**
EXP1	6	6	5	6	4		0	0	0	0	3	
EXP2	4	7	2	7	2		3	0	0	0	5	
EXP3	0	3	3	3	5		0	0	0	0	0	
EXP4	6	5	6	6	1		0	2	0	0	3	
EXP5	0	0	0	0	0		0	0	0	0	0	
EXP6	5	3	6	6	0		0	0	0	0	0	
	3.50	4.00	3.67	4.67	2.00	17.83	0.50	0.33	0.00	0.00	1.83	2.67

M20	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	M20 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	M20 MFS
EXP1	4	0	5	0	0		0	0	5	0	0	
EXP2	5	2	3	0	2		4	3	7	0	2	
EXP3	0	0	2	0	0		5	2	7	5	1	
EXP4	2	2	2	0	0		0	0	5	2	0	
EXP5	5	0	0	0	0		0	1	5	0	0	
EXP6	3	0	1	0	0		0	0	5	0	0	
	3.17	0.67	2.17	0.00	0.33	6.33	1.50	1.00	5.67	1.17	0.50	9.83

M21	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	M21 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	M21 MFS
EXP1	6	5	6	6	5		0	0	0	0	0	
EXP2	4	5	4	5	5		0	0	0	0	2	
EXP3	0	5	2	5	5		0	0	0	0	0	
EXP4	6	5	2	7	5		0	0	0	0	0	
EXP5	0	4	2	6	1		0	0	5	0	3	
EXP6	5	5	5	5	3		0	0	0	0	0	
	3.50	4.83	3.50	5.67	4.00	21.50	0.00	0.00	0.83	0.00	0.83	1.67

M22	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	M22 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	M22 MFS
EXP1	6	4	3	0	2		0	0	3	0	0	
EXP2	7	7	7	4	5		5	0	4	0	3	
EXP3	3	4	5	0	2		1	0	7	4	1	
EXP4	2	3	0	0	0		0	2	2	0	0	
EXP5	3	2	2	2	0		4	0	7	0	6	
EXP6	5	5	5	1	0		0	0	3	0	0	
	4.33	4.17	3.67	1.17	1.50	14.83	1.67	0.33	4.33	0.67	1.67	8.67

M23	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	M23 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	M23 MFS
EXP1	0	0	1	3	0		0	0	3	0	0	
EXP2	0	3	0	3	2		5	2	4	0	3	
EXP3	0	0	0	6	0		2	1	0	0	2	
EXP4	2	1	0	3	0		0	2	3	0	0	
EXP5	0	0	0	0	0		2	5	0	0	0	
EXP6	0	0	0	0	0		0	0	0	0	0	
	0.33	0.67	0.17	2.50	0.33	4.00	1.50	1.67	1.67	0.00	0.83	5.67

M24	Saldırgan	Kuvvetli	Atletik	Analitik	Mekanik	M24 MMS	Duygusal	Çocuksu	Figuratif	Organik	Zarif	M24 MFS
EXP1	6	4	2	5	0		0	0	0	0	0	
EXP2	4	5	5	2	4		3	0	0	0	4	
EXP3	0	0	2	0	0		7	2	7	2	6	
EXP4	5	3	3	4	0		0	0	0	0	4	
EXP5	0	2	0	4	0		2	0	3	0	2	
EXP6	5	4	4	3	0		0	0	0	0	0	
	3.33	3.00	2.67	3.00	0.67	12.67	2.00	0.33	1.67	0.33	2.67	7.00