

Women in Engineering Education in Turkey: Understanding the Gendered Distribution*

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The average percentage of female students in engineering departments in Turkey of 25% in 1998, allows us to argue that women are capable of representing themselves in this field to some extent. However, a detailed examination reveals that the distribution of female students in engineering departments is not even: they are more greatly represented in some departments than others. It can be argued therefore that women in Turkey have a reasonable opportunity of being represented in the field of engineering, which has been a male dominated area; nevertheless they exist in this realm with respect to their gender roles. In other words, areas that can be described as 'masculine' engineering departments and 'feminine' engineering departments have been formed and the decisions of female and male students in their choices of departments have been affected by this configuration. In this article, I firstly provide the data revealing this uneven distribution of women in different engineering departments of the universities in Turkey. Then I start investigating possible causes of this gendered distribution with an emphasis on the discursively constructed 'masculine' and 'feminine' images of engineering departments. This assessment is an outcome of the interviews that I have conducted with 15 women engineers from February 2000 to April 2000 in Turkey. Their experiences during their educational period with institutional structures and individuals such as professors and the other students, and their discourses on 'engineering' and their own departments are emphasized.

INTRODUCTION

ENGINEERING is a male dominated profession. Despite the differences in the representations of women in engineering in different countries, its characterisation and conception as a 'masculine profession' remains the same. Women are a minority in this field at both the academic and the professional level more so than in other specialised professions. Moreover, it is still generally considered as a profession only for men.

This fact should be evaluated in relation to the gendered culture of technology. Technology has never been neutral in terms of gender [1] and has been constructed culturally and historically as masculine [2]. It should be noted that this argument does not presuppose the idea that technology has to be masculine in its essence. Technology has always been a site for continuing discursive struggles on meanings, images and representations. The history of technology provides examples of fields which were crowded with women in the beginning but developed into 'naturally' masculine domains or vice versa. The current configuration of technological occupations shows that women 'operate the machinery' instead of 'managing technology, developing its use or maintaining or servicing it' [2]. In other words, women work as operators

pushing the buttons or the keys and work on the machine without knowing what is going on inside of it [2].

This gendered segregation in technical professions points to the fact that the dominant discourse in technology is masculine. One of the ways through which the masculine discourse of technology constructs and legitimises itself is the naturalisation of the constructed differences between men and women; emphasising especially the male competence/female incompetence in technical knowledge and skills. Nevertheless, as Cockburn argues, the low number of women in the field of technology production cannot be explained by theories that argue that there are 'essential' differences in the way women and men relate to the world [2]. Cockburn and Wajcman define masculinity and technology as intertwined in the sense that while masculinity has come to be central in defining technology, technological competence has become an integral part in the construction of masculinity [1, 2]. In addition, women's exclusion from production of and control over technology is a complementary part of this process since femininity is constructed in terms of being incompetent and uninterested in technology. As Cockburn says, 'It is not a simple matter of excluding women as people . . . ; it is a constitution of femininity itself' [2]. In this case, femininity is constructed as non-technical while masculinity is constructed as technical. Thus, we can argue that women's entrance

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into a technical field, engineering, is not an easy task. As Cockburn argues, '... for a woman to cross into male work is to transgress gender rules and to invite penalties. It involves abandoning women's traditional values and concerns' [2].

In Turkey the pattern of engineering being a male dominated field repeats. Engineering departments have the lowest percentage of women both as students and professors. At the professional level, it has the second lowest proportion of women. Nevertheless, in comparison with the representation of women in this field in Western countries, we can argue that women have a relatively high representation in engineering in Turkey. Nevertheless, there has been segregation concerning their participation in engineering programs that corresponds to differing gender roles: some engineering fields appear to be 'masculine' and others 'feminine'.

It is interesting in the case of Turkey that women academics do not report having faced any discrimination throughout their university education and academic lives [3–5]. On the contrary, they claim that they 'received fair and equal treatment in the academic world' [4] and this is also true for women engineers in both academic and professional life [6]. Acar explains this fact claiming that these women have a 'formalistic' understanding of discrimination [4]. In other words, since there is no discrimination against women in the regulations of the university, these women consider that education in the universities of Turkey is egalitarian. However, discrimination can function in subtler ways. For example, the gendered distribution mentioned above is itself both a means and a sign of covert discrimination against women in engineering departments in Turkey. It has important effects on women who want to enter engineering, determining which department they decide to pursue their education in. This distribution is also shaped according to the different attitudes of departments to female students.

The aim of this article is to assess the gendered distribution in engineering departments in Turkey and show how this configuration is shaped, which factors were effective in this distribution and how it influences women's experiences with engineering departments. In order to do this, it is first necessary to give a short review of the situation of women in engineering education in Turkey, with a historical perspective. Then, this configuration will be assessed based on in-depth interviews conducted with 15 women engineers of different ages and fields of engineering from February to April 2000.

AN OVERVIEW

In 1990, there were 14,100 women engineers in Turkey, comprising 12.4% of all engineers [7]. Following the percentage of female veterinarians (10.8%), this percentage is the second lowest in all

professions. When the distribution of female students and professors within university engineering programs is assessed, the ratios likewise favor men. The percentage of female students was 18.7% in engineering departments in 1990, while it was 53.8% in Fine Arts, 44.6% in Medical Sciences, 41.8% in Natural Sciences and 32.4% in Social Sciences in the same year. These percentages reflect the distribution of women in academia: the percentage for the year 1998 was 25.8% in Engineering Sciences while it was 35.6% in Natural Sciences and 36.9% in Medical Sciences [8]. It should be noted that women in Turkey have a greater representation in the area of engineering when compared with most Western countries.

This relatively high representation of women in the fields of science and technology in Turkey is not a result of feminist policies that have been deliberately carried out. There are other social, political and institutional factors behind this development, such as the encouragement of women coming from elite families towards higher education and professional life by their families and state policies during the early Republican period [3–5, 8, 9]. During this period, women's participation in the public sphere was considered to be a necessity for modernisation and the state aimed to guarantee it by means of legal regulations that were laid down in public and private spheres. Öncü also argues that the elite of the period preferred women of their class instead of lower class men to have higher education as they were not seen as a threat to class purity or class privileges and it was believed that they would be more 'obedient' to the state ideology, *Kemalism*, than lower class men [9]. Furthermore, as Köker [5] argues, the positivist world view of *Kemalism* had also been accepted as another important factor in women's decisions to get an education in departments of natural science. Considering the close relationship between science and technology, this factor can be considered to have an effect on the condition of women in engineering as well. As the positivist world view was highly valued in that period, women of the elite class aspiring to higher education showed a tendency for the natural sciences at universities rather than the social sciences. Öncü argues that since the fields of natural science have a shorter history of institutionalisation in Turkey than in Western countries, this situation makes these fields much more flexible in accepting female students than in its Western counterparts, thus allowing women to participate in these fields easily [9]. In other words, the workplace culture, the university departments and the occupational ideology of these professions evolved in the cultural and ideological climate of this period, which encouraged women to pursue higher education. Moreover, as Acar argues, because the financial resources for science have not been as high as they have been in Western countries, it does not offer quite as much power and, therefore, the necessity to 'protect' the field of science from women was not prevalent [8].

Köker suggests another reason why female students prefer science departments by pointing to the fact that the graduates of science departments are mostly employed as teachers in Turkey. She argues that female students take into account the possibility of becoming teachers, which is also conceived of as a 'feminine' profession, after their graduation from science departments [10].

GENDERED DISTRIBUTION IN ENGINEERING DEPARTMENTS

Women are more greatly represented in some engineering departments than others. For example, at all universities in Turkey for the year 1997–98, the percentage of female students was: 52% in food engineering; 48% in environmental and chemical engineering, but only 10% in mechanical and civil engineering and 11% in electrical and electronics engineering. These ratios clearly illustrate that a substantial gap exists between these two groups of engineering (see Fig. 1).

Upon examination of the last decade—the only period for which gender disaggregated data for engineering departments is available—a slight change can be observed in the number of women in the departments where they are either in the lowest or the highest proportions amongst the engineering departments. In this respect, engineering departments can be grouped as follows:

'Masculine' Engineering Departments: mechanical, civil, electrical and electronics, petroleum and metallurgical.

'Feminine' Engineering Departments: food, chemical and environmental.

'Mixed Sex' Groups: geological, industrial, nuclear energy, computer, aeronautical, mining, hydro geological and geophysical.

The third group consists of departments that have high percentages of male students, but not as high as in the case of 'masculine' engineering

departments and departments where the proportions of women has been changing over time. Due to the unstable proportion of women in these departments, it is difficult to determine an exact pattern for this group, yet it is still possible to find departments that are 'closer' to being 'feminine' engineering departments. For example, the fields of industrial, hydro geological, geological and geophysical engineering, which have approximately 30% female students, can be considered in this category. Those that can be taken as closer to 'masculine' engineering departments are mining, aeronautical, computer and nuclear energy engineering which have a ratio of less than 20% women students.

It should be noted that departments which have approximately 50% female students, have been denoted as 'feminine' to emphasise that those departments have the highest percentage of female students. It could be argued that consisting of almost 50% female students is not a satisfactory reason for calling those departments 'feminine'; however, their distinctive character should be acknowledged considering that female students have much lower percentages in some other fields of engineering. In this respect, they are *relatively* feminine'. Describing these departments as 'feminine' means neither that they are naturally suitable for women nor that women choose them naturally. Nonetheless, the use of 'feminine' in quotation marks refers to the constructed character of the identities of these departments as convenient for women. This is also the justification for describing some of the other departments as 'masculine'.

UNDERSTANDING THE GENDERED DISTRIBUTION

In my attempt to understand the gendered distribution, I will raise four issues for discussion.

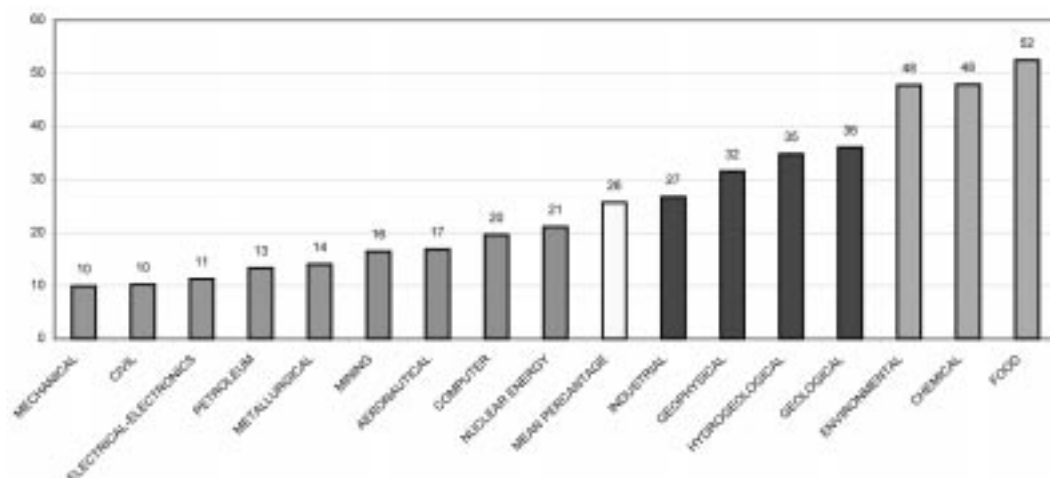


Fig. 1. Data extracted from *Annual Catalog of Student Selection and Placement Center (1998)*. The departments of Meteorology, Geodesy and Naval Architecture and Ocean Engineering are not included in the chart, as they exist only in a restricted number of universities in Turkey.

Firstly, I will assess how the gendered images of the departments have been constructed by means of a simple referral to their names. Then the issues of institutional factors, location of work (i.e. on site or in laboratories) and *technophobia* [11] will be discussed in detail. It should be noted that these four issues cannot be evaluated as independent factors, but should always be considered in relation to each other.

In doing this assessment, I will base my arguments on the in-depth interviews conducted between February and April 2000 with 15 women engineers, all of whom are graduates of the Middle East Technical University. These interviews had been done in the context of my M.Sc. thesis. Eight of the interviewees were professionals and seven of them were academics in engineering departments. Balancing academics with professionals helped me to observe the differences between those two fields in terms of women engineers' experiences. In addition to this, in order to understand generational differences in regard to the questions asked, women from two generations, over the age of 40 and under the age of 40, were interviewed. The interviewees were from a wide spectrum of departments including mechanical, electrical and electronics, chemical, civil, geological, environmental and industrial engineering.

Gendered images of departments

In the research, one of the observations made was that each department had its gendered identity in the interviewees' minds both before choosing their departments and after: they had conceived of some departments as convenient for women, and others as convenient for men. These images were so powerful that in some cases women made their decisions with respect to these conceptions without any hesitation. For example, a food engineer explained that she had considered food engineering to be a profession dealing with diets before she entered the department of food engineering. By graduating from this department she thought she would be able to deal with the issues of health, a subject that is suitable for a woman to study. She stated (the interviewee's emphasis is in italics):

'I did not prefer *male-oriented* departments like electrical or mechanical engineering. This was somehow the reason why I preferred food engineering. The idea of food engineering we had in mind was also wrong. . . I had thought that there was mathematics [in the curriculum of the department] and that it was more appropriate for a lady.'

This quotation illustrates how merely the name of the department causes images of 'food' to appear in people's minds, and the rest of the reasoning process follows: women are responsible for food, so they should be good at food engineering. Throughout history, women's activities have been closely related to food: gathering, preserving and cooking have been perceived as a part of their basic activities. Therefore, even if it is a field of engineering, which is developed as a masculine

profession, food engineering is considered a 'feminine' area within it. In this sense, the feminine image of food engineering overcomes all possible masculine images attached to the profession of engineering.

Likewise, a professional from environmental engineering stated that in Turkey, environmental engineering was assumed to be a field where people plant flowers or deal with the decoration of the gardens. These activities are considered to suit a woman. It is also necessary to consider the basic view which most of the people had in their mind before coming to the department: an environmental engineer has a responsibility to care for nature and protect it against the uncontrolled development of industry. Here, it is possible to see the projection of the relationship between nature and industrialisation over the engineering departments. The logic of industrialisation is based on the idea of overcoming the limits of, struggling with and controlling nature. Therefore, the image that people have of environmental engineering is that it is a field closely related to Nature and responsible for taking care of it while departments such as mechanical, petroleum and civil engineering are involved in a struggle against Nature. Thus, it can be argued that environmental engineering is related to woman who is identified with Nature at a symbolic level and is considered as a convenient department for women. However, mechanical and civil engineering, which were born during the industrialisation era, are linked to masculinity and conceived of as convenient for men.

Interestingly, chemical engineering is also regarded as a 'feminine' field. This is because chemical engineering is thought of as a chemistry department and attracts many women in their decision process. Remembering the specific conditions in Turkey, where there is a tradition of women getting an education in natural sciences, this attitude is understandable. Furthermore, such women assume that chemistry is based on laboratory work and this conception of chemical engineering makes it more likely to be chosen by girls due to its 'feminine' qualities. As an older academic expresses it, she would rather be a chemist working in a lab rather than an engineer:

'I never thought of it as an engineering department. I thought of it as chemistry. Afterwards, we were educated differently than I had initially thought and I was happy . . . I don't know why, but mechanical engineering didn't appeal to me as a woman. I liked chemistry.'

Institutional factors

The first thing that draws attention is that the 'masculine' departments are the oldest engineering departments, with the exception of metallurgical engineering. The 'feminine' departments are those that were established later usually by separating from the aforementioned 'masculine' departments. In the case of Middle East Technical University, from which the interviewed engineers graduated, a

split from civil engineering resulted in environmental engineering, and geological engineering had been established by splitting from mining. Similarly, industrial engineering, which also has a relatively high representation of women, was set up as a combination of mechanical engineering and the administrative sciences. Chemical engineering is also one of the oldest engineering departments. The high representation of women in this department seems contradictory with the observation made. However, as explained in the previous section, chemical engineering has a special place within the Turkish context.

Therefore, we can observe that women's representation in these relatively 'new' engineering departments is higher than in the 'older' ones. By means of this observation, one might suggest that the areas established recently allow more women the opportunity to enrol and advance. It is true that the oldest engineering fields, mechanical and civil engineering [12], which were established in the 19th century during the industrialisation period, have the lowest representation of women amongst all engineering fields in all industrialised societies. Women have only recently gained even that low percentage of entry due to changes made in education and training in those fields [11]. They are also the first engineering departments founded in Turkey. Therefore, it can be argued that they had been established with the masculine culture created since their establishment in the West and have preserved that culture up to the present.

The 'newer' departments, on the other hand, had been established through a separation from the 'older' ones: they shared some professors at the beginning of their establishment process and the basic structure was preserved in the areas of class formation, exam procedure and lecture-giving. Therefore, it is most probable that they carry traces of the masculine culture embedded in their parent departments. On the other hand, new departments with new names had different images for both students and professors and potential spaces in industry different from the older departments. In this sense, they offer different identities, different statuses and incomes, and different job opportunities to their students. The high percentage of women in these 'new' departments should also be evaluated from this perspective. In other words, to understand the relatively higher representation of women and the 'looser' masculine culture existing in these departments it should be taken into consideration that these dimensions are effective in how different gender qualities would be articulated with the department during the process of gaining its gender identity. For example, as we will soon be discussing, the more a department gains power in economical, social and cultural terms, the more marginalized the women in that department get.

Bradley argues along the same line when she evaluates the new industries. She claims that through the development of new industries, new

fields of employment were also opened up, but that these fields were segregated according to gender within a very short period of time [13]. Therefore, it can be seen that factors such as the opportunity of finding a job after graduation, the wage level offered by the job, the status it brings and the power of the department in the imagery of the society help to determine the number of women who can enter and which fields they are allowed to participate in. For example, an older academic from geological engineering explains that the income of a geological engineer is so low that one cannot support a family by depending on that amount of money. Therefore, it can be assumed that this profession is not attractive to men who are assumed to be the 'breadwinners' of the household. On the other hand, women can gravitate into this profession because women's income has always been seen as complementary to men's. Men can only consider geological engineering as a bridge to other professions. They can only make use of the label or the basic skills/logic it provides.

The same arguments are valid for environmental engineering as graduates in this field have difficulty in finding jobs in Turkey. A professional from environmental engineering explains how the job opportunities for environmental engineers are limited because it is a newly established area. Furthermore, as the field has not been accepted by the industry the future of graduates is not clear. Thus, it is risky to become an environmental engineer in the sense of finding jobs. Moreover, at the beginning, it was only possible to find jobs in the public sector, which is viewed as an area for women.

Working in the field or working at a lab

Working in the field or at a laboratory/office may affect a woman's decision when choosing her field of engineering, as well as the place where she will work after graduation. Most of the interviewees mentioned that when they first chose their engineering departments, they did not consider those departments in which they assumed they would be required to work in the field. The women who studied in departments requiring fieldwork also stated that they preferred to work in areas which would ensure that they could work in offices or labs after graduation. Therefore, a lab or an office is deemed a convenient place for women to work. We see the reflection of this idea in the distribution of women in the departments of engineering: women are numerous in engineering fields that are assumed to require working in laboratories or offices, such as environmental, chemical and food engineering and some sub fields of geological engineering, while men predominate in fields which are believed to necessitate working on site or in factories, such as mechanical, civil and mining engineering.

A constructed image about women is that they are naturally weak and unable to protect

themselves, and thus they need to be protected by men. In terms of this image, women should remain in sheltered private domains and realise their natural responsibilities, like giving birth to children and raising them, taking care of their husbands and doing housework. This image is supported by the complementary image of men as powerful and strong. Men can protect themselves against the dangers of the outside world. They can involve 'dirt', grease, dust and noise. Thus, the jobs that require bodily strength, specifically outside work are argued to be masculine jobs. One older academic from geological engineering stated as follows:

'It is not unreasonable for men to go alone [to field]. You could fall down and injure your leg. Group work is necessary. If you are a woman, you cannot walk firmly like a man. I think laboratory work is more enjoyable for women, in comparison to mining.'

As she expresses it laboratories are seen as alternative spaces for women to work in. As the interviewees mentioned, labs are clean and comfortable for women. They do not have to use bodily strength there. They can work silently and meticulously in the quiet atmosphere of a laboratory. They can mix and stir solutions and materials as they do in the kitchen. They can 'enjoy' the comfort of this sterile and closed environment. In this respect, women's gender roles as mothers/potential mothers and housewives are not contradicted by the image of women in the lab.

Nevertheless, as stated in the EU Report on Women in Science, the image of the scientist for school children in Europe is still a man in a white lab coat [14]. Therefore, the connection constructed between women and lab work doesn't seem to be universal, but specific to Turkey. Women's high representation in the natural sciences has occurred since their acceptance to universities in Turkey. It can be observed that this high representation has the effect of creating an image of women working in white coats in labs and this image has been articulated with women's roles in society. As an older mechanical engineer mentioned during the interview, the image of the 'white lab coat' in Turkey has a specific connotation as well. In Turkey, people who work in professions such as teaching, pharmacology, medicine and also the natural sciences generally wear a white lab coat, which represents sterility and cleanliness. It is interesting that these professions are also seen as convenient for women. Thus, it can be suggested that there is a symbolic connection between the white lab coat and women's image in the Turkish society.

It is noteworthy that the sense of sterility of labs refers not only to physical sterility, but also to 'sterility' in the sense of avoiding people, especially those from lower classes. Women working in laboratories do not have to interact with individuals from such groups. Working outside, on the other hand, would require interaction with them.

For example, most of the interviewees expressed the view that 'unskilled' workers are the most important obstacles to going on site for women. They argued that learning and developing strategies for dealing with workers is a must to exist there. They also mentioned that workers either refuse to take women engineers seriously or may harass them.

Another important factor raised by the interviewees as an obstacle to going on site for women was related to women's family responsibilities. They stated that staying on site might require long hours and this, they believe, makes going on site very difficult for a married woman, leaving 'her children and home alone'.

In this context, the following example is noteworthy in showing how women are marginalized in fieldwork, how they feel excluded there and thus discouraged from doing that during their educational period. We can also see how the practices at fieldwork are effective in women's professional identity construction (*italics mine*):

'I realised that when we were out on the field my male friends were *observing me* especially. They were wondering if I would be able to do fieldwork, if I would be able to walk.' (Deniz, younger academic).

Deniz is from geological engineering and she recollects these feelings from the times she went into the field with her classmates for courses. She felt that her male classmates had watched her intently. She felt them staring at her. As John Berger [15] said:

'Men act and women appear. Men look at women. Women watch themselves being looked at. This determines not only most relations between men and women but also women to themselves. The surveyor of women in herself is male: the surveyed female. Thus she turns herself into an object, and most particularly an object of vision—a sight.'

The possessors of the gaze, the male classmates in this case, remind Deniz constantly of the distrust in her as a female in that 'male field'. She is allowed to be there with her potential professional women's identity, but she is under surveillance, any mistake puts her back into 'her place', i.e. traditional femininity, and results in her exclusion from that field. Therefore, she regulates her body movements and attitudes in such a way that she fits into others' expectations of her. As she mentions later she walks '*easily*' on site, she is '*surprised*' when her colleagues congratulate her for walking for hours on site, she approaches a snake with sympathy when it is pointed out by her professor in order to check her reaction. Therefore, the gaze of male classmates symbolises the male gaze of science 'surveying' her. She constructs her female scientist identity with respect to this symbolic gaze that she carries in herself, to be able to exist within the domain of science.

It can be argued that there is a myth surrounding women engineer's work on site. Regardless of their area, or their choice in 'masculine' or

'feminine' areas, they were prejudiced against working on site before making their choice, and they needed to take up a position with respect to that perspective: They either considered themselves as 'brave' enough to work outside or did not want to work there at all. For most of the cases, it can be seen that in comparison to a male engineer a woman engineer goes to the factory or the field with prejudices, or at least with some discouraging ideas in mind that might make her give up more quickly. In other words, the material conditions of working on site cannot be disregarded. However, it is necessary to see how it functions to exclude women from 'masculine' engineering departments and how it functions in the construction of the gender identity of different engineering departments and the identity of women engineers.

It has been shown that women are highly represented in engineering fields that are believed to be 'clean', sterile, 'light', comfortable and silent. It is also believed that they do not use bodily strength. However, considering the case of electrical and electronics engineering, which requires mostly lab or office work and intellectual activity, this argument seems contradictory. In other words, despite its cleanliness and 'softness', it is still a male dominated field. Here, it is possible to see 'men's claim for both manual and mental superiority' [2]. Cockburn explains the situation in electronics engineering as follows:

'At one moment, in order to fortify their identification with physical engineering, men dismiss the intellectual world as 'soft'. At the next moment, however, they need to appropriate sedentary, intellectual engineering work for masculinity too. Ideological complementary values such as hard/soft must therefore always be seen as provisional. The values called into play in the hegemonic ideology will vary from time to time and from one situation to another . . . The values and qualities associated with the two genders are strictly contingent on the demands of sex supremacy and on nothing else. Male power is the bottom line' [2].

Technophobia

Technophobia, 'the fear or aversion to technology' [11], is another factor that affects women's decision to work in a particular area of engineering. Even though they decided to become an engineer, they tried to choose a field of engineering which is 'less' technological than others. We can evaluate industrial engineering in this context.

Industrial engineering is viewed as close to the department of management, which is also a department with a high percentage of female students. In this respect, this field is believed to be more 'social' than other engineering departments. It can be suggested that women, who want to be engineers but not 'technologists' consider industrial engineering as an alternative. In Turkey, the departments of computer, electrical and electronics, and industrial engineering accept students who get the highest scores in the national university entrance examination. This fact and the higher percentage of women in industrial

engineering of the three departments (20%, 11% and 27% respectively) supports the argument that successful female students who want to be engineers have a tendency to choose industrial engineering simply because they find it to be the 'least technological' and the most social of the three.

It is a common argument that women are not good at technical issues, while they are good at 'social' issues. They are conceived as technically incompetent and they are not trusted in technical subjects and matters. In cultural imagery 'femininity is incompatible with technological competence.' [2] Thus, even though they work with technology in their professions, they feel removed from or incompetent in technology.

Damla (younger industrial engineer) is one such woman. When I asked her for an interview, she stated that she felt she might not fit into 'my categories'. She believed that she was not doing engineering. Damla conceived of engineering as something technical and believed that what she did was not 'technical'. She also defined 'technical' as being competent in fixing and using machines and viewed engineers as persons who were *interested* and *talented* in such 'technical' subjects. Those were the 'talents' she believed she did not have. Hence, she did not consider herself an engineer. However, after she described her job, it was obvious that it was in fact 'technical'. She is in charge of her office and she mainly does programming. In this sense, what she does can be considered as close to what a computer engineer would do. Although she was highly involved in technology, she did not place her job within that field. She explains all those as follows (italics mine):

'I mean I never feel like an engineer . . . Neither because of the job I am doing now, nor because of the department I have finished. In the job I am doing now, I am only a user . . . other users are using computers by means of what I produce, but the thing that I produce is a very social thing indeed. It is like looking at a job which is done physically and then transforming it into computer language by writing its mathematical model.'

She answers the question 'Then, what does engineering mean for you?' as dealing with more technical things such as fixing or constructing a machine. She also defines having a deep interest in doing these kinds of things as an inseparable part of being an engineer.

This might be related to the suggestion that women do not generally construct their identity through technological competence. Benston states that men use a specific tool or machine as an individual statement or means of expression [16]. Women, on the other hand, do not generally express themselves through technology and do not construct their identity in connection with technological competency. For example, while discussing their experiences in the field and what gives them satisfaction in their profession, interviewees from geological engineering brought forward their interaction with people, how they

liked nature and how it was pleasurable for them. They did not mention the power that technical competence gave them or the status that it brought. They mainly emphasized the status that being an academician brings.

Fear of technology is fed by the distrust of the people around. It is possible to come face to face with this kind of distrust even from the closest of persons. As a young civil engineer explains (italics mine):

‘Even my mother used to say, “*I would not live in the house that you built*” from time to time . . . but probably only 10 out of 180 people [that graduated from civil engineering] will construct a house . . . Of course she did not say this kind of thing all the time, but only when she was angry with me.’

CONCLUSION

The fact that women have had the opportunity to attain higher representation in the field of engineering shows that the situation in Turkey is different from that in other countries. Dependent on historical reasons instead of consciously held policies to encourage women to go into this profession, this situation results in specific attitudes of women engineers in Turkey. Women’s denial of the existence of discrimination during

their educational period can be evaluated as one of these results. It is argued that they define discrimination in terms of legal regulations and conceive of it in more overt forms. However, more covert forms of discrimination still occur in the educational institutions of Turkey, such as the tendency to guide female graduate students into those fields of engineering which are viewed as more convenient for women, jokes made by the professors about women’s incompetence in engineering and the marginalising attitudes of male classmates towards female students.

The gendered distribution in the field of engineering is assessed as a covert form of discrimination. This uneven distribution is evaluated as both a symptom and a means of the masculine discourse of technology. This paper has attempted to show which respects this discourse articulates women’s and men’s gender roles with the constructed genders of the departments. Within the scope of this article, I especially intended to show how so-called feminine attributes such as technological incompetence, mothering, vulnerability, and meticulousness became a tool for women’s exclusion from some fields and pushed them into others.

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