

Women's Perception of Science: Theory and Practice

Rashida A. Khanum
Professor
Department of Philosophy
University of Dhaka
Dhaka-1000, Bangladesh

I

Science and technology are appreciated for making modern life comfortable, easy and simple. But equally important is to mention that science and technology also have disadvantages in our life. In the health-sector and in the environmental-sector the abuse of science and technology cannot be denied. Alcoholism and drug addiction are the results which in turn add to crime and poverty. As such Sal Restivo has seen "modern science as a social problem".¹ One such problem is the discrimination between man and woman. Sandra Harding says that "Science is both progressive and regressive".² Harding considers science as regressive from the standpoint of feminism. Science is regressive, i.e., dominating and exploitative in the sense that it provides information of social resources by which social relations can be controlled, e.g., in the matter of controlling gender relations and thereby controlling society. Feminist observation is that various methodological and political elements are responsible for discouraging women in the study of science. So far the tradition of science was to eliminate women from science. This is mentioned as structural obstacles by Harding.³ She asks for changing this tradition. I would like to explain this structural obstacle in details in the following section and then I shall explain how this problem prevails in Bangladesh.

II

Harding believes that traditional science education which is prevailing has been set for men. It has flaws. Therefore it must be changed. She observes that certain parts of science which we trace in different educational institutions should not be gender based rather gender free.

Feminists are critical to the practices of science. Harding points out that sexist misuse and abuse of science and technology can be shown in different parts of life, for example, reproductive

technologies such as, sterilization, unsafe contraceptive, unnecessary gynecological surgery are frequently done on women. Harding says that the dominant culture is always taking the greater risks with women's reproductive systems while preventing that of men. She observes that since women are not in the dominant position rather subordinate, so women have far less control over their bodies than men have. During the last two decades of twentieth century many feminist critiques⁴ have focused on the misuse and abuse of scientific technologies related to women's positions as well as their bodies.

Feminists also observed that in biology and social sciences research works were set in such a way that the result of research will focus the negative side regarding female but positive assessment will be on male. Thus women have been shown as emotional and more engaged to the welfare of family. But science is defined as objective, impartial and abstract. Thus it is shown that women and science are contrary.

Scientific researches are misguided and biased by beliefs and prejudices. Custom or tradition of a society sometimes influences its members in this way. "Such biases enter the research process particularly at the stage when scientific problems are being identified and defined, but they can also appear in the design of research and in the collection and interpretation of data".⁵ Thus Harding holds that though science claims of objectivity regarding truth yet its inquiries are not free of prejudices.

Feminists also observed that sciences are biased by androcentric prejudices. Feminists working in the field of social sciences made extensive studies in order to obtain the reverse truth regarding female bodies and female traits. Women scientists in biology and psychology faced with opposite truths in their research while working with customary beliefs regarding female bodies and traits. In the last three decades of twentieth century we have seen that more women researchers are engaged in biology and psychology. These researchers focused on women's participation in social problems and discovered women's ingenuity and ability in handling and solving social problems.

The fact is that previously opportunities were not open to women because of which feminists had to struggle and still are struggling to create space for women. Androcentric bias so long has controlled the society and people's attitude. In the field of psychology, Carol Gilligan⁶ in her study has shown how male scientists so far misguided society regarding women's personalities. New findings led them to the realization that scientists are biased by their social customary beliefs while they set their research assumptions. Feminists try for new approaches regarding knowledge by stating women's conditions where and how women live.

Philosophy of science explains this fact that scientists are blinded by their social attitudes and are biased with certain presuppositions. In order to challenge the androcentric and sexist one-sidedness of scientific researches feminist approach took the line of social movement known as women's movement. Women's movement, starting from 70s decade of twentieth century still continuing, has been able to uncover the sexist biases and prejudices involved in scientific researches. This feminist challenge to sexist biases is called "feminist empiricism" by Harding.⁷ Women's movement though related to liberty of women but the movement inspired its activists to lead researches in knowing women's bodies and traits of personality. Researchers' (who are the scientists) findings presented new reverse knowledge in the women questions.

Harding clearly points out that, "the women's movement creates the opportunity for more women and feminists (male and female) to become researcher, and they are more likely than sexist men to notice androcentric biases".⁸ From the androcentric bias women's activities are labelled by the society as different than men's activities. It is said that women's lives and activities are inferior than men's lives and activities. The question asked here is that women's "difference" is only a difference but why is it treated as inferior? Harding agrees with other feminists that scientific research study is responsible for making hierarchical dichotomy in this case. Harding suggests that, for the aimed objectivity involved in research one should not necessarily rely excessively on men's lives. Researchers in science need to be open-minded i.e., using women's lives as sources of

scientific evidence also.

However, it has been seen that through women's movement feminists have brought certain changes in the social structure. Changes in social policies regarding women's social conditions and positions are now visible. For example, in education equal opportunities for girls and boys irrespective of humanities, science and social sciences are laid by different states, even by the third world countries. There exists no formal barriers to women's equal shares in education in science, engineering, medical science and social sciences. Here women are given equal chances for lab appointments, research grants, teaching faculty positions etc. State does not impose any bar on women in education in science, though very few women are visible as holding higher posts as directors or managerial holders in the field of natural sciences. It is same in social sciences and humanities also.

From this situation we can now say that feminist politics is a necessary strategy to the change of outlook of patriarchal social stratification. Harding points out that "In a socially stratified society the objectivity of the results of research is increased by political activism by and on behalf of oppressed, exploited and dominated groups".⁹

III

Women in Bangladesh are in peripheral position in the society, and those women who are involved in academic line of science are in marginalized position in a male-dominated working place. Historically we see that highly privileged women in Bangladesh earned greater access to education. Our society has been stratified by class, gender and religions.

In Bangladesh the first university, the University of Dhaka, was founded in 1921. At that time there was no girl student in graduate program, only one girl student got admission in the Master's program, who completed her graduation from a college. Girls used to go for education in humanities and social sciences only. The first girl student in science enrolled in 1927. The spirit to women education rapidly speeded up after the independence of Bangladesh in 1971. But majority

of women enrolment is in arts, literature and languages. Lower presence is perceived in engineering, medicine and technology. After having obtained a higher education, societal and family factors adversely affect women's chances of using their education in a job or profession.

There are very few women scientists in Bangladesh (i.e. those who are university faculty members or are working in the areas of medicine and technology), because girls are not encouraged for science. Generally, women in science believe that science is objective, logical and a rational pursuit. This situation is based on patriarchal, androcentric and gender biased views of the society.

In Bangladesh, very few women scientists are interested in women movement or feminist matters. Women scientists in Bangladesh like to measure things from the social point of view, for example, the social problem they face is called the gendered family roles problem. The pressure they feel is that no matter whether women are scientists or not, they have to maintain their gender roles. Majority of women believe that they cannot develop a careerist attitude because of their mother-role attitude as child-bearers and child-rearers overrides their career-role. They are often ready to sacrifice their career-role for their mother-role.

Education in science subjects is very costly in Bangladesh and possibly it is similar in other eastern and western countries also. The state does not provide any financial help in the name of loan or bursury. Family has to finance for education. Family prefers a son than a daughter to be a doctor or an engineer or an architect. Family knows that girls will not stay with the parents after marriage but will live with in-laws according to the social set up. Girls are not considered as the potential family provider, on whom family can depend in times of financial crisis. From this standpoint patriarchal influences prevent women from gaining access to higher education. Now-a-days the pattern of education in the case of girls is changing. State is stressing more and more girls for school education though it has no real importance for women education in science. Moreover in Bangladesh girls are discouraged to study science not because they are incapable or due to lack of ability, rather studying science is very expensive which a poor family cannot afford. Obviously, it

is the social system which is gender biased rather than science itself, to create obstacle for girls' studying science.

Three decades ago women of the country were less aware of the gender roles in education but now women of the younger generation are much aware of gender biased system. Younger generation women are more challenging than their earlier generation. This should be considered seriously by policy makers and also by the different agents working for social changes.

The younger generation women are more ambitious and challenging. They like to cross the bar of family responsibilities of so-called caring and rearing of children. They also like to share the caring of old age members of the family as men do. Large number of women of this generation are visible now in studies of science and science oriented jobs. This can be seen as positive indications of challenges to the gender biased system of society on account of education and employment of women. Women of new generation have a different perception of life, of science as well. They came to know that women all along had a very positive perception of studying science, to equip themselves as a scientist but failed for the patriarchal system of the family. The new generation women boldly express their want and desire. Family now realizes the changing atmosphere, so, family does not show strong reluctance to their wants and desires.

A girl's perception of science is very positive. She knows that she can establish herself as a medicine practitioner, as an engineer, as an architect or even as a pharmacist and thereby can take the opportunity to take care of her parents and other family members. This feeling has been developed in the mind of the parents also, but they are under the pressure of the dominant group of the society. Here we notice that when women are freed from the fence of the family, they realize that they can contribute to family as men are doing. They have the spirit and courage to materialize their potentialities once they get the opportunities. They seek independence and liberty so that they can attain things which are helpful not only for themselves but also for their families and society. Attempt should be taken to give emphasis on women's perceptions of science which will disclose

the fact that women are enthusiastic to the study of science, that women perceive science as rational and objective which lead them to the development of an unbiased society. This is the overall situation regarding science and women in Bangladesh.

Some aspects of Sandra Harding's science questions are related to women's presence in the field of science. It is said that scientific experiments have shown that women's brain is weak in mathematics as such women were discouraged in studying this particular science. This view appears to be an over-simplified view when we look at the situation existing in Bangladesh regarding women and science. Girls in Bangladesh can prefer mathematics for their studies without any obstacle from their families and can study any other sciences as they prefer because society has no prejudice that girls' brains are weaker to understand certain subjects. It is not a science question, it is a different question – economic question. I should say that it is the economic condition (indirectly the social condition) which restrains girls to study certain subjects, not mathematics or physics rather medicine, engineering etc.

On the other hand, Harding is right in holding that science is more androcentric due to patriarchal pattern of the society. Women are in peripheral position in the Bangladeshi society and those women who are involved in academic line of science are in marginalized position in a male-dominated working place. There are women scientists in different universities and Government research institutions but the visibility is very poor. A recent statistics shows that in the Bangladesh Agricultural Research Council (BARC) of the twelve departments only two departments have 5.26% women scientists; in Bangladesh Council of Science and Industrial Research (BCSIR), Bangladesh Rice Research Institute (BRRI) and Atomic Energy Center (AEC), the presence of women scientists have shown as the highest 36.3%, second highest 30.1% and third highest 22.18% respectively.¹⁰ Poor visibility is also apparent in university teaching and research areas which ranges from 3.1–7.2%.¹¹ The most unfortunate case is that in the decision-making regions of the state women scientists' visibility is nil, for example, in the Ministry of science and technology there

is no women scientist representative to provide suggestions or recommendations for the development of the country.¹² Such facts show the low and inferior position of women scientists which in turn indicates that women are treated as the marginalized group of the society. This is a science question for Harding. She claims that women should not be treated as marginalized group in the society. I believe that though woman scientists' visibility is low, nonetheless, it shows that women have capacities and intellects for being a scientist. Therefore, it is a question of opportunity and not a question of merit or weaker brain. The situation in Bangladesh as I observe is more intricate with economic hardship which is the dominant condition and partly patriarchal social condition (parents are dependent on son but not on daughter) which are responsible for discouraging woman to be a scientist. It appears that Bangladesh society is less biased by androcentric sciences but more biased by the economic condition of the family.

From the above discussion it can now be claimed that the regressive part of science which Harding has criticized is less compatible to the situation existing in Bangladesh. Women scientists in Bangladesh are more involved in their struggle to place themselves in the line of male-stream scientists for which they avoid to participate actively in feminist movement. They do not like to respond to the question whether science is 'male' oriented or the question that the manner their research is structured is a 'male' one. It appears to me that women scientists here have less thought to feminist questions also, but once they take the stronghold position in their field, they will open the path for their next generation scientists to challenge boldly the patriarchal social system.

References

1. Cf. Harding, S., *Whose Science? Whose Knowledge?*, New York, Cornell University Press, 1991, p. 2.
2. *Ibid.*, p. 3.
3. *Ibid.*, p. 28.
4. For details, see A. Garry and M. Pearsall, ed., *Women, Knowledge and Reality: Explorations in Feminist Philosophy*, New York, Routledge, 1992; and L. Alcoff and E. Potter, ed., *Feminist*

Epistemologies, New York, Routledge, 1993.

5. Harding, S., *op. cit.*, p. 111.
6. Cf., Khanum, R. A., “Carol Gilligan on Feminist Ethics”, *The Dhaka University Studies*, vol. 55, no. 1, June 1998, pp. 177-184.
7. Harding, S., *op. cit.*, p. 111.
8. *Ibid.*, p. 111.
9. *Ibid.*, p. 127.
10. Begum, Z. N. T., “Status of Women Scientists in the Development of Science and Technology in Bangladesh”, Proceedings of the *International Conference on Gender Participation in the Development of Science*, Dhaka, Bangladesh Academy of Science, November, 2009, p. 48.
11. Mahtab, N., *Women in Bangladesh from Inequality to Empowerment*, Dhaka, Bangladesh, AHDPH, 2007, p. 60.
12. *Ibid.*, p. 145.