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**Review of 'Women in Science – then and now'
By Vivian Gornick**

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REVIEW

The book *Women and Science - then and now* by journalist Vivian Gornick (2009) is a commemorative edition of the same book, originally released in 1980. It is also a part of the *Women Writing Science* project organized by The Feminist Press of the City University of New York with the intent of publicizing the history of women in science. It is a classic reading in the history of women struggling to gain access to the professional area of technical sciences.

According to the preface by Donna Shalala, Gornick was the first author in the United States to bring to the surface the doubts, fears and frustrations of over 100 unique women who have sought scientific careers as biologists, chemists, physicists, physiologists or experimental psychologists.

The author has analyzed interviews of women in two age groups: 65-85 and 25-55 years. They have been interviewed in several cities in the United States - in laboratories, offices, restaurants, family rooms and they document discrimination against women in science, industry, governmental institutes and universities.

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The book is divided into three parts: "Who are these people, and what do they think they are doing"; "Women in Science: half in, half out", and "Women in Science: Demystifying the Profession" - and it is important to note that each of these sections carry reflexive addendums comparing the observations written in 1980 with present-day editing. Through this strategy, the author shows that some issues pointed out nearly three decades ago are still present today, as well as pointing out demands that have emerged since that time.

The enticing narrative mixes perceptions of the scientific/academic work sphere with the private lives of the scientists interviewed, adding elements such as voice intensity, body language and posture, as well as the spaces and environments in which they were interviewed. In this kind of literary ethnography, as each page is turned we are presented with a range of qualities that detail and explore the tensions present in the world of women in science. The methodologies used for interviewing these women may also provide a significant contribution to those used by oral history researchers.

The main issue in the book is still real today; although there has been considerable increase in the number of women working in scientific fields in the United States since the beginning of the 1980s, the numbers hide the private professional stories which, when observed closely, show gender tensions, competition, extenuating struggles and loneliness on the part of these professionals both in work and in family spheres.

The author posits that women's access to scientific and academic labor in the United States had already changed by the 1980s. In the face of the feminist movements, no head of an academic department would deny the access of women to science without running the risk of being labeled sexist. However, if access was no longer prohibited directly, one must observe that a practical and positive transformation in this access has not occurred. The book reveals that interview panels for scientific and academic positions asked women about their family and motherhood situations, whereas men that were interviewed for the same positions were not asked anything of the kind. The fact is that, symbolically, there were diversified and resistant barriers that made access to scientific positions a very hard battle for women to win. In the meantime, there have been those who have quit and others who have persisted - but the female feeling of fighting this unjust battle was rarely understood, no matter how well-qualified these women were, academically.

The section on family and personal tensions presents a glimpse of how intense those relations between men and women were, especially when it referred to the unequal positions of scientist couples in the same field. In one of the interviews, the scientist husband had warned his wife to refrain from sitting on the same table when he was having lunch with other colleagues from their department. This was referred to as 'family sabotage' by the author, which increased when these women had children.

Gornick reports that, in several cases, women's progress in scientific careers was conditioned by their husband's job possibilities and that, very often, their interviewees would lose their jobs or had to quit their Masters or Doctorate courses due to changes of address and the risk of separation.

In the professional sphere, the eternal position of Research Assistant that many highly qualified women were given, would frustrate attempts of achieving stability and recognition in the academic world through a tenured position.

As Bruno Latour points out, research is not performed only in laboratories, but also in the networks produced by different people in different countries and fields of knowledge. In this sense, the weak participation of laureate women limits their access to strategic spaces of knowledge production, scientific financing, and broader scientific relations. From being appointed to a position to being nominated for an award, names are not chosen through gender-excluding guidelines, but gender-exclusion is unquestionably reproduced within the protocols obeyed by their own committees – in addition to the issue of having few peer women scientists, with equal production of scientific thought.

The book brings many examples of situations that remind us of asymmetric scientific conditions for men and women. In the introduction, starting with a reading of *The Eighth Day of Creation* by Horace Judson (1979), the author observes how the so-called scientific process encourages some and paralyzes others within research. This was the case for laureates James Watson and Francis Crick in their discovery of DNA without acknowledging the crucial participation of Rosalind Franklin; she worked alone and was considered to be “suspicious, acid, and defensive”, being hierarchically excluded from her colleagues' work. What happens to the self-reliance of these scientific women, or to their ability to believe in their own evident intelligence in the analytic and creative process? What does it mean to be a scientist? These are some of the questions asked by the author.

The world of science that is asymmetrically constructed with respect to gender, is intertwined every minute by the concept of success. This leads to struggles for recognition, original discoveries, sharing extraordinary points of view, considering concrete academic advantages and disadvantages among single and childless women, and married women with and without children, as well as by the institutional rules that impose the full-time model that restricts women within the scientific sphere.

Of course Gornick is not considering science to be an entity with no movement or mutation. She points out that the paradigm of constructing scientific fields has changed over the 20th century, and that has caused scientists to consider things that were previously unthinkable due to machinery, equipment, and laboratories. Throughout the 20th century there have been several displacements: the way science is made, from great science to specific specialties and the multiplication of fields; from state-sponsored science to profitable science in the 1980s; from tedious observation to a science of insights, flashes, and revelation. Consequently, the professionals within this new science have changed and, in this sense, there was a slow and cumbersome conquest of the fields of science on the women's part.

The second part of the book presents conscious discriminatory practices against women in the scientific and academic spheres, beginning with a discussion of a false idea of meritocracy implemented in certain scientific institutes, as well as from reports of academic positions for women that have remained frozen in time. In this sense, Gornick points to the determining role of feminism in opening scientific fields to women. These data are certainly to be celebrated, but they still carry contradictions such as interviewees who claim that to occupy a peripheral seat in the scientific system is still better than not being a part of the system at all.

The third part of the book updates the debate of scientific women as a profession. This is where several conclusions are made, based on the interviews. The first is that women would not have been able to rise to the academic tenure spaces without the presence of the feminist and women's movements. The internal debate for research

grants has been changed between the 1980 and 2000 decades: project management is no longer solely done by the head of a laboratory. Scientist women have become aware of their own political power in the scientific and academic areas, amidst a more receptive atmosphere. Some issues remain, such whether to have children– which is directly related to having full-time tenure or not.

The few opportunities currently available to continue a scientific career may be also seen through lower pay, slow promotion systems, and few administrative positions when compared to men who are often heads of laboratories and budget managers.

As observed by Shalala, this edition of Gornick's work allows us to reflect on scientific women interviewed 25 years ago but, above all, to see the resonance of these stories in the present day (p. viii). In this sense, the book represents an excellent opportunity to construct debate on the public policies of promoting access to women in this scientific world, which is still mostly turned towards men.