

GENDER AND SCIENCE IN HUNGARY – AN OVERVIEW

Eszter PAPP

Faculty of Economic and Social Sciences
Budapest University of Technology and Economics
H–1111 Budapest, Hungary
Hungarian Science and Technology Foundation
e-mail:papp_eszter@freemail.hu,eszter.papp@tetalap.hu

Received: Oct. 20, 2003

Abstract

The ‘gender aspect’ has been a popular topic in the past few years all over the EU. In all the fields, not only in science, appeared the consciousness about gender distribution and equal opportunities. The reason for this special attention was partly the fact that the USA, the EU’s biggest rival in science, seems to use its human resources, among those women, in a more effective way, which contributed to the gap that has evolved between the EU and the USA in the field of science. Approaching the EU enlargement it has become necessary to examine the situation of gender equality not only in the member states but in the candidate countries as well. This article deals with the situation of women in Hungary during the socialist regime, the transition period and nowadays, with special attention paid to science.

Keywords: science, policy, gender equality, EU.

1. Introduction

The ‘gender aspect’ has been a popular topic in the past few years all over the EU. In all the fields, not only in science, appeared the consciousness about gender distribution and equal opportunities.

The approach towards gender mainstreaming¹ was first set out in the Commission Communication (1996) ‘Incorporating equal opportunities for women and men into all Community policies and activities’, which aims at more efficient action on equal opportunities together with simultaneously improving the quality of European policies. The equal opportunities between men and women is one of the EU’s objectives in the Treaty of Amsterdam (1997), and positive discrimination programmes have been started to improve the situation of women at a Member State level. The overall Community Framework Strategy on Gender Equality (2001–2005) embraces all Community policies and actions aimed at achieving gender equality including gender mainstreaming policies and specific actions aimed at women.

¹ Mainstreaming means the systematic integration of equal opportunities for women and men into the organisation and its culture, into all programmes, policies and practices.

The issue of women and science is at the core of the European Research Area, as the under-representation of women in science prevents its full realisation. First, because the ineffective involvement of women in science represents an unacceptable and unaffordable waste of human resources, and second, because the under-representation of women in science compared with their representation in society induces a distortion between science and society at a moment where it is of utmost importance to increase confidence in science.

The strategic positioning of EU RTD policy has been highlighted in March 2000, when the European Commission named it as one of the main instruments for implementing the common vision for economic and social development in Europe, *the Lisbon Strategy*. This strategy aims to make the European Union by 2010 ‘*the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion*’, and sets the target to realise a 60 percent employment participation of women in the labour market, thus contributing to the above aims.

The Communication ‘Women and Science: mobilising women to enrich European research’ (1999) outlines the measures to be undertaken by the Commission to take the gender dimension into account within the European research policy. Two main objectives were set up:

- stimulating the discussion and the sharing of experiences regarding the under-representation of women in research among the member states,
- developing a coherent approach towards the promotion of women in EU-funded research.

The first objective has been tackled in many ways. The Helsinki Group of national civil servants was set up in 1998 to create dialogue among the member states focusing on policy reviews and development of gender indicators in research. Later the group was enlarged with the representatives of the candidate countries as well.

Regarding the second objective the Commission formulated its action around three major points:

- women’s participation in research must be encouraged – research by women,
- research must address women’s needs – research for women,
- research must be carried out on the gender question itself – research about women.

One of the major tasks delivered by each Helsinki Group delegate was to produce a national report describing their respective policy (if any) by the end of 2000 to promote women in science. On the basis of these national reports, a European report *National policies on women and science in Europe* has been published on June 5, 2002. It describes the categories of measures being developed in the 30 European countries represented in the Helsinki Group to promote women in science; it also includes national statistical profiles that were designed, for the first time, for all 30 countries participating in the Helsinki Group.

While reading through the national reports provided by the Helsinki Group delegates of the Eastern and Central European countries and of the Baltic States, it became clear that the situation described and the recommendations put forward in the ETAN report '*Science policies in the European Union: Promoting excellence through mainstreaming gender equality*' – delivered to the Commission in November 1999 – were not reflecting the situation of the women scientists in these 10 countries and could therefore not meet all their specific needs. In particular, the communist period and the transition to market economy have created in all these countries a very special situation for women scientists, different in many aspects from the ones in the European Union and the other candidate countries.

Action 27 of the Science and Society Action Plan is therefore meant to address the situation of women scientists in Central and European countries and in the Baltic States. The Enwise (*ENlarge 'Women In Science' to East*) Expert Group was set up by the European Commission in 2002 to promote gender equality in science by addressing the situation of women scientists in Central and Eastern European countries and in the Baltic States (Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia).

This article deals with the situation of women in Hungary during the socialist regime, the transition period and nowadays, with special attention paid to science. All the data and statistics were provided by the Hungarian Central Statistical Office, except for some figures where it's indicated in the text.

2. The Communist Past (1945–1989)

After World War II there was a vast demand for labour force because of the rapid and enforced industrialization in the country, which increased the labour market participation of women considerably. The mass employment of women in Hungary started in the 1950s based on both economic and ideological pressure. They had to work because of the ideology of the regime and the big demand of workforce due to the quick industrialization. Two low salaries made up one acceptable, so the introduction of the 'family model of two earners' made it possible to keep salaries low. Another reason for the employment of women was that the frame of the workplace provided means for educating and controlling people, for fulfilling the objective of loosening family ties and for the enhancement of the role of the state in educating children. In spite of these facts the high employment of women contributed to the improvement of their situation as well besides its negative effects – it increased women's social recognition and their independence of men and families. The publicity suggested that only working women were valuable members of the society, though they were still not considered as valuable as men.

Men dominated the political life, they were in decision-making positions in the party and in the state enterprises. In elected bodies there were quotas to secure the equal representation of women, but this was only formal, because these bodies didn't have any real power. Most people, be man or woman, didn't have any power

or influence, couldn't take part in decision-making.

The socialist era after 1945 offered good opportunities for women to take part in higher education as well, the number of female students was increasing continuously.

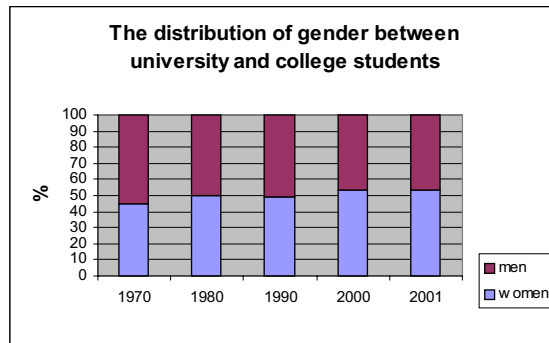


Fig. 1.

In this period science, just like everything else, served as a tool for reaching political objectives, so the support for each field was distributed based on its usefulness for the current ideology. In general it can be said that research in heavy industry (mainly engineering), nuclear energy and chemical industry got the biggest financing, and somewhat less went for medicine, social sciences and agriculture. From 1972 until nowadays the majority of researchers were employed in the field of engineering and technology.

After 1949 the research system was transformed. The role of universities was restricted only to education and research was placed in several research institutions. The status of the Hungarian Academy of Sciences (HAS) was reinforced by the implementation of the 'soviet-type' system – it became the principal scientific institution. It had meant a great prestige to be a member of the Academy even before the socialist regime, and the privileges of the members became even higher during this period, meanwhile the living standards of other intellectuals sank to that of the better skilled workers. The HAS became the supervisor of the national research activities. Between 1949 and 1993 the Academy had the exclusive right to award scientific degrees. There were two types of degrees: Candidate of Sciences (C.Sc.), equivalent to PhD, and Doctor of Sciences (D.Sc.), one rank higher.

The number of research institutes was multiplied between 1951 and 1972. During the second half of the 1960s, the 1970s and 1980s, as the political environment became a bit looser, the Hungarian research centres started to take part in international (Western) scientific associations. The so called civil scientists (who were not members of the party) could get back to work – not to the universities, which had educational roles, but to the academic research centres. This phenomenon enhanced the scientific capacity of the institutes and sometimes it became the engine of the international relationships.

The financial system changed as well: besides the direct financing of the institutions appeared the financing of tasks in the form of orders won from the state enterprises and funds supporting basic research through competition.

From the 1950s, as the R&D system began to develop, the involvement of women in science increased as well.

Table 1. Proportion of women researchers, %:

1972	1977	1982	1987	1990
23.5	27.2	27.8	29.1	28.1

The number and proportion of women researchers has been continuously increasing since 1972, but it still did not reach 30%, despite their proportion (more than 40%) among active people with higher education degree.

3. The Transitional Period (Beginning of the 1990s)

The change of the system had a lot of effects on the society, but its most significant consequences appeared on the labour market. The number of employed population decreased dramatically (by one third) and unemployment spread quickly. Since 1998 the employment rate has been increasing, the consolidation has started.

The drastic changes had contradictory effects on the society and the mentality of the people. On the one hand they were not prepared for the appearance of unemployment after the long decades of full and easy employment. They grew up in a system where the state took care of everything, and then after 1990 they had to cope with the new and hard conditions of capitalism, with many kinds of risks and uncertainty unknown before. On the other hand huge amount of possibilities, which hadn't existed before, opened up for anyone having the necessary skills, education and initiative. This contradiction resulted in a transformation of values, the growing importance of education, work and money.

After the collapse of the socialist system several problems, including the issue of equality between men and women, remained unsolved.

The changes on the labour market affected women considerably. In 1989 78% of the women of working age were active – by 1995 this number decreased to 60.8%. (Male economic activity changed from 84.7% to 73.8%.) Nowadays the employment rate of women is 54% (including the ones living on maternity grant or being on maternity leave it is 62%). In this period women unemployment was smaller than that of men. The average salaries of women compared to that of men had grown slowly between 1972 and 1986, then quickly until 1992, and then it became stable around 80-85%.

After the transition one of the most striking contradictions of the political life was the significant under-representation of women in political decision-making,

the legislative and executive power, the parties and the trade unions (and it is so even today in the parliament and the government). This affects the role of women in society and women employment as well, because the protection of women's interests has not been properly solved yet. The proportion of women candidates in the Parliament has been 8.5–12.5% in the last 4 democratic elections. Currently 10% of the members of the Parliament are women.

In the 1990s the Hungarian educational system underwent some changes, and the number of students taking part in higher education increased substantially. There is no discrimination between men and women on any level of education. In 1993 the new higher education law changed the system of scientific degrees in Hungary. The universities got back their right to award scientific degrees, so the Candidate of Sciences degree was replaced by the PhD given by universities. The Doctor of Sciences degree also disappeared, it was replaced by the Doctor of the Hungarian Academy of Sciences/Academic Doctor. To be a university teacher it is required to have a habilitation besides the PhD degree.

The scientific system of Hungary consists of the following components:

- The R&D Division of the Ministry of Education is responsible for designing and implementing the Hungarian science and technology policy, for the competition-based R&D programmes and for the international science and technology co-operations of Hungary, including EU-related research issues.
- The Hungarian Academy of Sciences is an independent public body based on self-governance. Its tasks are to support the development of scientific research, to evaluate research results regularly and support their dissemination, and represent Hungarian science in Hungarian public life and at international fora. 48 research institutes and 139 universities and other research groups belong to the HAS and it sets up scientific sections and committees to co-ordinate the activity of researchers working at different institutions, universities and research units. The Academy's share in total R&D personnel is almost 20%.
- The research units at the universities are part of the higher education sector, and their budgets depend mostly on government subsidies, which have two main types: normative research support and governmental funds and programmes.
- The Bay Zoltán Foundation is the largest research foundation in the country. It was funded in 1993 and it has three research institutes: the Institute of Biotechnology, the Institute of Material Science and Technology and the Institute of Logistics and Production Engineering.
- The Collegium Budapest is the first IAS-type institute in Central and Eastern Europe.
- The increasing number of R&D units in enterprises shows the growing innovation activity of the private sector. The main R&D facilities are established or overtaken by multinational companies, but fortunately there are more and more SME-s active in research as well.

4. Considerations about Nowadays and Perspectives to Become, because of EU Enlargement, full Members of ERA and full Participants to the 6th FP²

4.1. General Aspects

After the transitional period there has been more balance on the labour market. In 2000 the employment rate of women was 49.7% and that of men 63%, the unemployment rate 5.6% and 7%, respectively. There has been a change of attitude towards women staying at home and taking care of the family, which might be a consequence of the changes on the labour market, as many active aged women have found themselves without job, especially after having children. In 2000 a national representative research was carried out on behalf of the Hungarian Central Statistical Office with the participation of 3000 people, similar to a previous one in 1991, which dealt with the topics women and work, women and family, where parents with small children were interviewed. In 1991 33% of the women and 43% of the men had the opinion that it may be equally satisfactory to be a housewife as to have a job, and 55% of women and 62% of men thought that a woman was more appreciated if she had a job. In 2000 the figures were different: 62% of women and 65% of men considered having a job and being a housewife equally satisfactory and 51% of women and 48% of men meant that women were much more appreciated if they had a job. (PONGRÁCZ, (2001)). 'The role of family and work in women's life' in *Changing roles*, TÁRKI-Ministry of Social and Family Affairs) Since the transition less people agree with the assumption that women should work, and more women would like to have part-time jobs or jobs they can do at home.

4.2. Top Positions and Women's Access to These

There are women in all categories of top positions from governance to top management of multinational firms, just not very numerous. It is hard for women to reach top positions because these fields are still dominated by men, and they have to prove their skills and knowledge in a not 'woman-friendly' environment. They still have to face many prejudices, and they have to work much more for a certain position than a man.

In 1999 the Hungarian Central Statistical Office (HCSO) carried out an investigation among 19 917 women aged between 15 and 49 years, which represented a multitude of 2 410 000 persons. In this research from the employees asked (representing 1 227 000 women) 38.3% thought that by the selection of leaders only skills count, 2% that women have advantage, 47.6% that men have advantage, and 12.1% that other factors are important.

There is a big gap of salaries between men and women even in leading positions, and this gap is not closing at all.

²ERA: European research Area, 6th FP: 6. EU RTD Framework programme

Table 2. Salary of women in proportion of that of men:

occupation	budgetary sector		competitive sector		national economy	
	1995	2000	1995	2000	1995	2000
leaders in legislation, administration, trade unions	74.5	72.4	87.5	86.0	85.1	78.8
occupations that require the independent application of the higher education degree	82.1	73.7	100.7	90.9	80.0	66.4
other occupations that require higher education degree	80.1	79.7	85.9	82.3	80.7	74.3
office and administrative occupations	95.2	85.7	83.7	85.7	85.4	84.6
services	80.7	79.6	75.7	79.9	75.5	79.2
agriculture and forestry	98.1	96.9	90.4	92.5	90.8	92.7
industry and construction industry	92.9	87.0	74.8	74.2	75.7	74.8
machine operators, mechanics, drivers	71.9	68.5	75.6	79.4	76.6	80.3
occupations not requiring any qualifications	80.9	79.9	85.0	91.3	79.7	84.4
total	76.3	72.7	82.1	82.8	80.8	79.7

Table 3. Average salary of women in leading positions:

type of occupation	salary of women in proportion of that of men, %	
	1995	2000
legislation, national administration, trade unions	102.2	101.7
regional, local governance, administration, trade unions	89.8	94.5
public and private enterprises	84.1	74.8
small public and private enterprises	86.9	97.3
total	85.1	78.8

These figures indicate that the situation has worsened instead of improving in the past 7 years, which shows a very negative tendency in the attitude towards the

abilities of women in the society.

The IMD International Search and Consulting international head hunter and consulting firm chose women in leading positions its research topic for 2002. 14 countries took part in the investigation. In Hungary the result was that the proportion of women is the highest in the lower leader level (25–40%), and it is lower in the top management (5–24%) and in the middle management (31%). With these rates Hungary is on the first place concerning lower and top management, and on the second in middle management. Spain, Poland and Sweden had similar results, and the numbers in case of Germany, Belgium and France are surprisingly low. The most Hungarian women leaders are in marketing, management, finance and purchase, the rates are less than the average in production and research and development.

Some interesting data about other countries: Swedish women are in leading positions in informatics/IT, Spanish in R&D, sales and marketing, Austrian in customer service, law and HR, Danish in quality management, Polish in finance, Czech in purchase and German in all fields.

According to the results of this investigation the main characteristics of a Hungarian female leader are: she is a single young woman, careerist, very determined, persistent, self-confident, not masculine, she likes power, she has strong communication and organizational skills and endures stress quite well. (Fehér, Erika: 'Hungarian women take the lead', 29.10.2002, *Népszabadság*, Budapest)

In summary the 'glass ceiling' exists in Hungary as well, just like in other countries, especially in science.

4.3. *Career and Family Life*

It is very difficult to find the balance between family life and work in all professions, and it's extremely true in those that require higher education degree.

According to the research of the Hungarian Central Statistical Office (mentioned earlier) based on 1 227 000 women employees 34.7% of the interviewed women meant that having children is a strong disadvantage, 41% meant that it is some disadvantage when applying for a job. For the majority of women it is a problem to harmonize work and family life, and 53% of the women think that having children has some or strong negative effect on their salaries. In general women with higher education degree worry a bit less about these problems, which might be linked to the fact that they have better chances on the labour market. More than half of the women would like to work part-time or at least would like to have such a choice, mainly because then they would have more time for their families. The rate is a bit lower among those having higher education degree, but it is still 41%. 49% of the asked women wouldn't like to have a part-time job, mostly because of the lower income. Many problems emerged concerning the unsatisfactory amount and availability and the not adequate opening hours of nurseries and kindergartens.

Another important issue in female careers is how to get back to work after maternity leave. According to data of the HCSO in the past 3 years one third of

the mothers could not go back to their previous job because their employer did not want them anymore and only about 46% of them could go back to their original workplace. (There is no data if they got their old position or a worse one – it is often the latter.) It is regulated by law that the employers have to keep the workplaces of those being on maternity leave, but its implementation has not brought satisfactory results yet.

Some ways to make it easier for women to harmonize scientific career with family life would be for example: providing the possibility of part-time employment in all professions, flexible working hours, teleworking opportunities, company kindergartens at bigger firms, special trainings.

Most highly qualified women, although they earn more than women with lower qualification, actually earn a smaller percentage of male earnings.

Table 4. Salary of women in proportion of that of men:

	budgetary sector	competitive sector	national economy	occupations that require the independent application of the higher education degree
1995	76.3	82.1	80.8	80.0
2000	72.7	82.8	79.7	79.6

The proportion of people that agree with the sentence 'Being a man or a woman influences career opportunities strongly in Hungary' by educational level, 2000, N = 1500

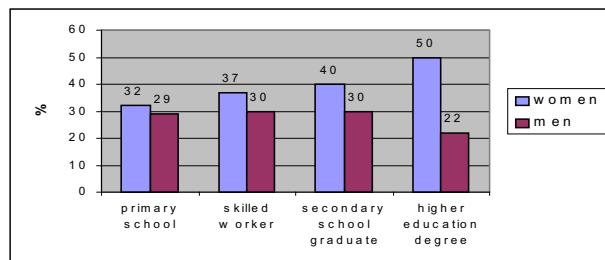


Fig. 2.

This diagram reflects the reality quite well: usually a woman has to work much more than a man for the same result and recognition, no matter if it is a job, a better position, a higher salary or the respect of the colleagues. The situation is similar in science too, both in the private and in the public sector, and it is not becoming better at all.

4.4. Measures Adopted by the State for Gender Issues

Hungary became a member of the Convention on the Elimination of All Forms of Discrimination against Women in 1982, and since then it has submitted 5 reports: in 1982, 1986, 1991 and in 2000 the combined fourth and fifth report.

The legal conditions in Hungary regarding the equality between men and women correspond to the EU directives.

The general prohibition of discrimination between men and women is stated in paragraph 1. of Article 66 of the *Hungarian Constitution*:

‘The Republic of Hungary shall ensure the equality of men and women in all civil, political, economic, social and cultural rights.’

The Constitution of the Republic of Hungary forbids all kinds of discrimination in its Article 70/A:

1. ‘The Republic of Hungary shall respect the human rights and civil rights of all persons in the country without discrimination on the basis of race, colour, gender, language, religion, political or other opinion, national or social origins, financial situation, birth or on any other grounds whatsoever.’
2. ‘The law shall provide for strict punishment of discrimination on the basis of paragraph 1.’
3. ‘The Republic of Hungary shall endeavour to implement equal rights for everyone through measures that create fair opportunities for all.’

Article 70/B reflects the rule equal salary for equal work and equal treatment:

1. ‘In the Republic of Hungary everyone has the right to work, and to freely choose his job and profession.’
2. ‘Everyone has the right to equal compensation for equal work, without any discrimination whatsoever.’
3. ‘All persons who work have the right to an income that corresponds to the amount and quality of work they carry out.’
4. ‘Everyone has the right to leisure time, to free time and to regular paid vacation.’

The regulation of the *Labour Code* about discrimination is the following (Article 5):

1. ‘In connection with an employment relationship, no discrimination shall be practiced against employees on the basis of gender, age, race, national origin, religion, political views or membership in employee interest representation organizations or activities connected therewith, as well as any other circumstances not related to employment. Any differentiation clearly and directly required by the character or nature of the work shall not be construed as discrimination.’
2. ‘In the event of any dispute related to a violation of the prohibition of discrimination, the employer shall be required to prove that his/her actions did not violate the provisions of paragraph 1.’

The amendment of the Labour Code in 2001 introduced the concept of indirect discrimination and extended the prohibition of discrimination to the discrimination because of family or handicapped status.

The paragraph 32/B of the Constitution established an ombudsman for the protection of citizens' rights, including the protection of the rights of women.

The law about labour control can be considered as a special protection, because it extends the employment control to the violation of the prohibition of discrimination, although the power of this tool is weakened by the fact that in case of suspicion of discrimination the labour control is not carried out automatically, just upon announcement.

Besides the above mentioned possibilities of course there is the possibility to enter an action on court.

After the IV. World Conference of Women in 1995, where the governments undertook to create national mechanisms, the Office for Equal Opportunities was created in the Ministry of Social and Family Affairs. In 1998, after the change of government, it continued as the *Office for Women's Issues*. After the recent government change in spring 2002 this office was placed into *the Ministry of Employment Policy and Labour* to the Directorate General for Equal Opportunities, and was renamed as *Office for Equal Opportunities Between Men and Women*. It is responsible for the national women policy.

In 1999 the government decided to establish the *Council for Women's Issues*, to fulfil the following tasks:

- consultation during the preparation of laws and action programmes concerning gender equality, initiation of new programmes and amendments of law
- participating in the elaboration of international and national programmes supporting the equality of women and in the creation of their competition rules
- giving opinion about the reports and information material dealing with the equality of women

Currently this Council does not operate because of restructurings after the government change. Its composition is unique on the international level: it involves one member from all the ministries, experts and civil members as well.

The newest initiative to support women is an amendment of the Labour Code at the moment on parliamentary debate. If the delegates vote for it, the employer may not ask its employee questions concerning maternity in the future.

The Office for Women's Issues set up a National Operative Committee, which currently operates under the auspices of the Directorate General for Equal Opportunities in the Ministry of Employment Policy and Labour. Its members are highly qualified representatives of different, either scientific or research support institutions and they discuss all the developments related to women and science, take part in conferences, give presentations and publish articles in order to raise gender awareness in science.

In 2002 a PHARE project was started named 'Tackling the gender gap in the labour market' with the objective of strengthening the equal opportunities of men

and women on the labour market by supporting the reintegration and late integration of inactive women into working life. The target groups of the programme are the women returning to work from maternity leave or maternity grant and women aged above 45 years who are at present inactive but they want to work.

In May 2003 a minister of equal opportunities was appointed, Dr. Katalin Lévy. This is a brand-new position in the Hungarian government, it is responsible for the equal opportunities for minorities and women.

In Hungary gender studies are already carried out in various places, for example:

- Gender and Cultural Studies Centre, Budapest University of Economic Sciences and Public Administration
- Department of Gender Studies, Central European University
- Institute for Social Studies – Women Database
- Hungarian Academy of Sciences, Institute of Sociology.

4.5. Situation in Science

There was a decline in scientific activities during and after the transition period, less percent of the GDP was spent on research than before.

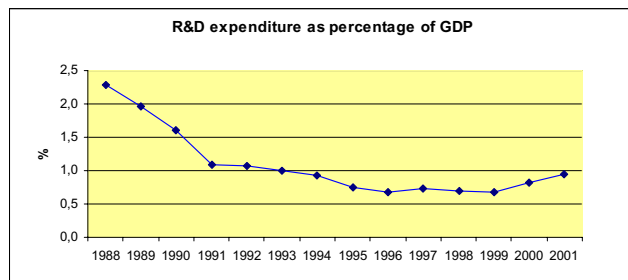


Fig. 3.

Looking at R&D expenditure data by sector one can find that the expenditure of the private R&D units was the highest between 1995 and 2001. This shows the changing structure of financing research and the growing share of the private sector in the R&D budget, which has been one of the aims of science policy since the transition.

The distribution by fields of science looks like the following:

The prestige of the scientific profession was permanently decreasing in the past 12 years. Many talented scientists switched to the private sector, often to businesses not even related to research and development, or they went abroad, because in Hungary they weren't given the opportunity and the resources to do high quality research. The governments haven't really supported research since the transition,

Table 5. The number of researchers has decreased since the end of the socialist regime, just like the total number of R&D staff:

Year	1980	1990	1995	1998	2000	2001
Number of scientist and engineers	38 705	30 256	20 859	23 547	27 876	28 351

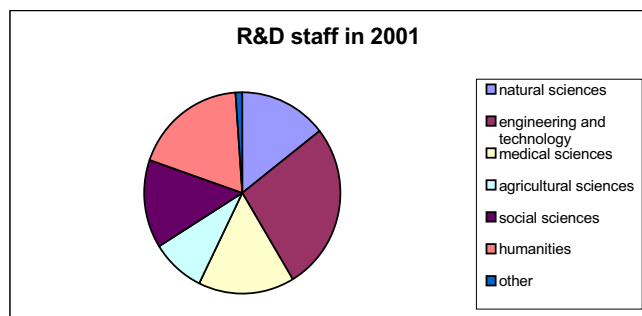


Fig. 4.

although last year the revision of wages in the civil sphere improved the situation of researchers working at universities and budgetary institutions considerably, and the Hungarian Academy of Sciences and its institutions receive increased financing as well.

4.6. Stereotypes about Science in Books and Images of Science in the Media

In Hungary science has appeared very rarely in the media since the transition, especially not on television. The usual structure of such programmes is that the announcers are women, and in the detailed interviews men talk.

A new initiative to increase the awareness of the society of science takes place now called the 'University of Omniscience', which involves lectures held by scientists, one per week, broadcasted on TV. It is the private initiative of two enterprises supported by the Hungarian Academy of Sciences with the aim of revitalizing the dissemination of scientific information and increasing the popularity of scientists in Hungary. It is very popular both in attendance and in viewer number. Besides TV it has a website and it appears in the printed media as well with interviews and the summary of the lectures in four newspapers in Budapest, several in the country and a scientific magazine. It is interesting to observe the gender imbalance among the lecturers: in the academic year 2002/2003 from 40 lecturers only 3 are women,

which means a participation of 7.5%.

The situation is maybe slightly better in the printed media – women usually get the opportunity to publish articles in scientific papers. When it comes to articles and expert interviews about science in newspapers or magazines, men dominate the field (women are asked sometimes too, mostly about soft sciences). In exceptional cases women appear in other research fields too, in magazines for women and some TV programmes, like an interesting ‘queer fish’.

The conditions of scientific work in Hungary show a very diverse picture: they vary from institution to institution, from field to field. In general it can be stated that the situation concerning infrastructure is slowly improving (one reason may be that the very poor institutions could not survive the past decade), there are grants to receive financing for equipment, and some R&D basis are very well equipped already even compared to the international level as well. Despite these developments Hungary as a whole is still far behind Western countries concerning this issue.

4.7. *The Role of Women in the Structure of Scientific Institutions*

Women are present in all kinds of scientific institutions in all the regions, and they try to assert themselves in all fields of science. Most of them work in humanities, medical sciences and social sciences. The proportion of women among scientists and engineers has been continuously increasing since this indicator appeared in statistics.

Table 6. The number of scientists and engineers:

year	women	men	total	proportion of women, %
1980	10 436	28 269	38 705	27.0
1990	8 489	21 767	30 256	28.1
1995	7 092	13 767	20 859	34.0
1998	8 129	15 418	23 547	34.5
2000	9 537	19 339	27 876	34.2
2001	9 363	18 988	28 351	33.0

The next table and graph shows the gender distribution breakdown by sectors:

It is obvious that women are most under-represented in the research units of the private sector, which has negative impact on the gap between the salaries of men and women. Furthermore it leads to the conclusion that women participate to less extent in the competitive sphere of research activities, as competition is tougher in the private sector than in the public one.

The observation of R&D staff according to educational degree and gender started in 2001. The results have shown that there’s no difference between men

Table 7. Proportion of women among scientists and engineers, %:

	1990	1995	2000	2001
budgetary institutions	31.1	38.3	37.4	35.6
higher education sector	29.1	33.9	35.5	34.6
private sector	24.7	29.9	25.8	24.6

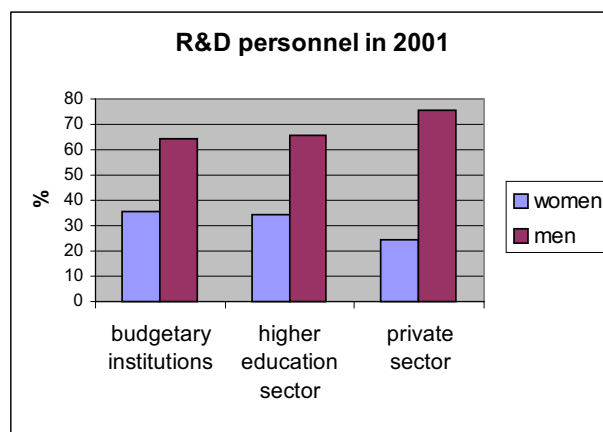


Fig. 5.

and women among scientists, but concerning all personnel the educational level of women is lower because they work in higher proportion in fields that require lower educational levels.

The data concerning the elite in science (those who have a scientific degree) is summarized in the following two tables, indicating gender distribution.

Table 8. Researchers with scientific degree, 2001

Type of degree	total	women, %	men, %
Member of the Hungarian Academy of Sciences (HAS)	337	3	97
Doctor of Science/academic doctor	2 349	10	90
Candidate of Science / PhD	10 105	22	78

From these tables it turns out that women are almost not represented among the members of the Hungarian Academy of Sciences and the academic doctors, so they hardly ever appear in the highest rank of scientists in Hungary. At the lower level,

Table 9.

Field of science	academic doctor , %		PhD/candidate of science, %	
	women	men	women	men
natural sciences	9.7	90.3	22.8	77.2
engineering and technology	5.2	64.8	7.8	92.2
medical sciences	12.4	87.6	22.2	77.8
agricultural sciences	3.1	96.9	20.9	79.1
social sciences	14.7	85.3	26.2	73.8
total	10.5	89.5	21.8	78.2

among researchers having a PhD degree, they have already gained more ground. The extremely low proportion of women in the elite shows that scientific activities are men-centred and the capacity of female brains is not exploited. It might cause a significant loss for the country on the one hand because the capacity of talented female researchers is lost for research if they can't succeed in this field and they try it elsewhere, on the other because it hinders Hungary's competitiveness in the international field.

The majority of women in research are in the positions requiring lower level of education and providing less income. This statement can be supported by the following figures:

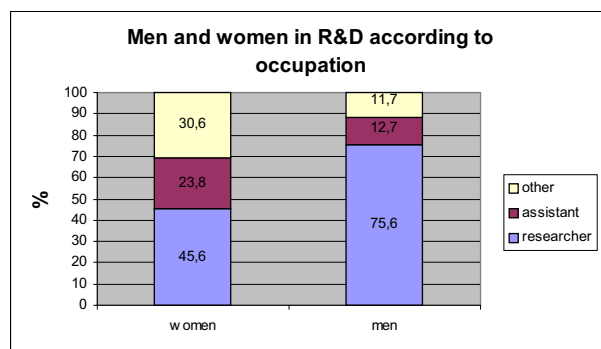


Fig. 6.

As it is shown in the tables above, although in total women represent 45% of R&D staff, the majority of them works as assistants or in other occupations, and they are a minority of 33% among scientists and engineers.

According to some opinions the situation of women researchers was better under the communist regime, when everyone worked under the same conditions

Table 10. The number and distribution of R&D personnel, 2001:

	scientists and engineers	assistants	other	total
number	28 351	8 098	9 227	45 676
women, %	33.0	60.4	68.3	45.0
men. %	67.0	39.6	31.7	55.0

because after the transition women stayed at their workplaces but a lot of men moved to new, better equipped firms and laboratories, which can be partly proved by the extremely low proportion of women in the private R&D sector compared to the slightly better rates in the higher education and the budgetary sector.

This phenomenon can also be linked to the cautious attitude of women: men take risks more often in order to reach a higher level, a better position and more salary, while women usually prefer security and stability to risks and uncertainty, which is rarely provided by the private sector nowadays.

4.8. Recruitment into Science: Choosing Hard or Soft Sciences, Including Role of Parents and Teachers

Nowadays people are not surprised anymore if a girl is interested in a scientific career, but there are still some hidden factors which divert girls from science. For example parents do not foster their curiosity concerning oily machines and they encourage them to choose 'clean', 'womanly' hobbies. In schools and museums teachers do not bother with explaining things from the point of view of women, and as women have different chain of thought from men, girls often react to scientific information like 'I don't understand these kind of things anyway' after having some attempts to understand them without any result. Young girls are rarely engaged in scientific occupations, especially not related to hard sciences, and then when they are older, if they start to be interested in such things, they discover that boys know much more about them already, and they lose their courage. That is why it would be necessary to encourage talented girls as well to try themselves for example in technical sciences and not lose their motivation if it is hard at the beginning. Anyway, the tendency of women participation in science is positive even in hard sciences, which shows that the womanly-manly differentiation of activities is slowly lessening.

Another phenomenon women have to face when trying to start a scientific career is the reaction of university teachers and professors. They often do not take young women seriously, in some cases they even address them as 'little girl', and of course then the 'little girl' does not want to have anything to do with these kind of people anymore and she goes to another profession where she is presumably not degraded.

Table 11. Proportion of women among PhD and DLA students (full-time), %:

field of science	1995	2000	2001
political sciences and law	39.8	54.2	44.4
humanities	43.7	55.5	56.1
natural sciences	30.9	34.1	33.4
economics	38.8	39.0	37.7
engineering and technology	14.5	19.1	22.6
agricultural sciences	32.2	46.6	56.8
medical sciences	45.1	45.5	50.9
veterinary sciences	18.5	26.1	44.2
religion		16.4	20.0
arts	40	34.6	48.7
total	32.7	40.7	42.4

Table 12. Proportion of women among scientists and engineers according to field of science, %:

scientific field	1990	1995	2000	2001*
natural sciences	23.9	33.2	26.5	25.1
technology and engineering	21.7	20.2	21.3	21.1
medical sciences	32.4	42.9	39.2	38.7
agricultural sciences	23.8	25.6	32.5	30.4
social sciences	43.5	33.2	45.8	36.6
other			31.7	32.8
total	28.1	34.0	34.2	33.0

*humanities: 47.7%

4.9. Retention of Women Scientists, Women's Advancement in Scientific Careers

The retention of women scientists is a very complex issue, and it is a problem in Hungary as well, just like in other European countries, although it is not yet recognized as a problem in the scientific community. But if the female aspect and the female brain capacity is lost for science, as mentioned above, then research becomes one-sided, which does not help Europe to close the gap to the USA – where it's a long solved problem – and remain competitive globally.

The gender dimension of academic careers in Hungary is shown on the following graph. The proportion of women scientists is lessening as time goes by and

only 11.6% of the professors are women, which is very low compared to the 42.4% of women among PhD students.

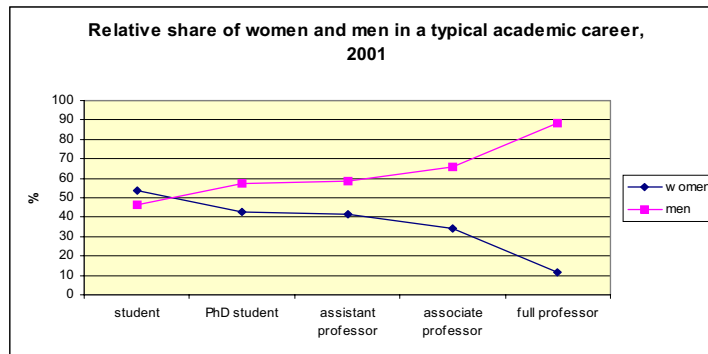


Fig. 7.

Actually all the issues that emerged earlier in this document are relevant to this problem. Women somehow don't rise in the hierarchy like men, which can be related to many factors: motivation, success, encouragement, recognition, family, children, etc. There are some methods that would maybe change this trend a bit, like positive discrimination, mentoring, helping to find balance between scientific career and family, etc. For example if a woman scientist falls out of scientific work for a while because of family activities, later, when she would like to return to her profession, or even during maternity leave, she is not provided with any extra training to prevent her from being left out of the information flow of her specialization. It would be beneficial if such initiatives existed. Women should also help each other instead of hindering each other, and a change of attitude is needed on the leadership level as well, especially in the private sector – sentences like 'I don't hire her, she'll go to maternity leave in some years anyway' shouldn't be heard.

4.10. Relevant Problems

- In Hungary there is no economic sector where the performance of women is specifically monitored, except for public education.
- There are not enough relevant statistics, especially concerning mobility and framework programme participation, aggregated figures either, not to mention distribution by gender.
- There is no gender mainstreaming for scientific policies in Hungary.
- Awareness of the capacity of women in research is even lower in candidate countries than in Western countries. A scientist is usually represented like a middle-aged man in the society. There are no female role models in the

scientific society, and women often lack confidence concerning their quality of working.

- There are no special grant systems to encourage women to take part in research projects and there are no such plans either.

The issue tackled in this article is worsening instead of improving. The reasons of the under-representation of women in science should be subject to deeper investigation from all points of view, considering all possible factors that might influence it.

References

- [1] Hungarian Central Statistical Office. *Research and development 2001*.
- [2] Hungarian Central Statistical Office. *Research and development 2000*.
- [3] Hungarian Central Statistical Office. *Research and development 1989*.
- [4] Hungarian Central Statistical Office. *The qualification of scientists, 1987*.
- [5] Hungarian Central Statistical Office. *The qualification of scientists, 1995*.
- [6] Hungarian Central Statistical Office. *The situation of women on the labour market, 2001*.
- [7] Hungarian Central Statistical Office. *R&D and tertiary education, 2002*.
- [8] Hungarian Central Statistical Office and Ministry of Social and Family Affairs. *Women and men in Hungary, 2001*.
- [9] Hungarian Central Statistical Office. *The Circumstances, Family Background and Mobility of People with a Scientific Degree, 1997*.
- [10] www.mta.hu
- [11] www.tarki.hu
- [12] www.origo.hu/mindentudasegyeteme
- [13] www.om.hu
- [14] GROÓ, D., Women in Research and Development, MBA thesis, 2002.
- [15] HRUBOS, I., Women and Science: Review of the Situation in Hungary', Hungarian National Report for the Helsinki Group on Women and Science, 2000.
- [16] CEDAW Combined Fourth and Fifth Periodic Report, Hungary.
- [17] HARASZTY, Á. – HRUBOS, I., Women and Science – in a European Dimension, *Hungarian Science*, **3** (2002).
- [18] HRUBOS, I., Chances of Women in Higher Education, *Hungarian Higher Education*, **8, 9, 10** (2001).
- [19] PONGRÁCZ, T., The Role of Family and Work in Women's Life' in *Changing Roles*, TÁRKI-Ministry of Social and Family Affairs, 2001.
- [20] HARASZTY, Á., Equal Opportunities for Women – Women in Science in Hungary, in Stolte-Heiskanen, Veronica (ed.), *Women in science – Token Women or Gender Equality?*, Berg Publishers Limited, 1991.
- [21] VISZT, E. – PLANK, ZS. – BORSI, B., Mobility of Human Resources in Hungary: An Analysis and a Proposal for Regular Collection of Statistics, *Innovative People – Mobility of Skilled Personnel in National Innovation Systems*, OECD.
- [22] FEHÉR, E., Hungarian Women Take the Lead, *Népszabadság*, October 29, 2002, Budapest.
- [23] MÁRK, E., Gender Discrimination on the Labour Market, *Magyar Hírlap*, April 27, 2002, Budapest.
- [24] LENDVAI, I., Women on the Stage and in the Audience of Politics, *Népszabadság*, February 1, 2002, Budapest.
- [25] HÁMOR, SZ., What is Needed for a Female Career? – The Glass Ceiling is the Smallest Obstacle, *Népszabadság*, October 8, 2002, Budapest.

- [26] A Programme for the Role of Women on the Labour Market, MTI, October 31, 2002, <http://velvet.hu>.
- [27] KUN J, E, It's no Business of the Employer if the Employee is Pregnant or not, *Népszabadság*, December 12, 2002, Budapest.
- [28] Changes in Participation and Earnings Position of Women in the Hungarian Labour Market, 1998, Hungarian Central Statistical Office.
- [29] GLATZ, F., Academy and Science Policy', *Hungarian Science*, 4 2002.
- [30] CZUGLER-IVÁNYI, J. – HAJDÚ, J. – GYULAVÁRI, T. – MORVAI, K. – PAP, E. – SZABÓ, I., The Equal Treatment of Men and Women in Hungary in the Light of the Relevant EU Directives', OSI EU Monitoring Program, 2002.
- [31] NAGY, B., New Career Perspectives – Women Entrepreneurs in Hungary.
- [32] GALASI, P., Differences in the Earnings of Women and Men in Hungary, 1986–1996, National Centre of Labour and Methodology, 2000.
- [33] Commission Staff Working Paper, *Women and Science: the Gender Dimension as a Leverage for Reforming Science*.
- [34] European Commission (2000), *Science Policies in the European Union: Promoting Excellence through Mainstreaming Gender Equality*, a Report from the ETAN Expert Working Group on Women and Science, 2000.
- [35] Communication from the Commission (1996), *Incorporating Equal Opportunities for Women and men into all Community Policies and Activities*, COM(96)67 final, 1996.
- [36] Communication from the Commission (2000), *Community Framework Strategy on Gender Equality (2001–2005)*, COM(2000)335 final.
- [37] LANE, N. J., Why are There so Few Women in Science?
- [38] LAAFIA, I. – LARSSON, A., Women in Public Research and Higher Education in Europe, *Statistics in Focus*, 7 (2001).
- [39] European Commission (2001), *Gender Impact Assessment of the Specific Programmes of the Fifth Framework Programme – an Overview*.
- [40] CLARKE, S., Earnings of Men and Women in the EU: the Gap Narrowing but only Slowly, *Statistics in Focus*, 5 (2001).
- [41] UNICEF, Women in the Transition, Regional Monitoring Reports 6., UNICEF International Child Development Centre, Firenze, 1999.