



Meta-analysis of gender and science research

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# Country report Sweden

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# 1 Introduction

## 1.1 Swedish gender equality policy

The overall goal for gender equality policy in Sweden is that women and men shall have the same power to shape society and their own lives. Gender equality has improved in Sweden, but women and men still do not have equal opportunities. Government policy aims to counteract and change systems that maintain a division of power and resources based on a gender perspective. One of the foundations of gender equality policy is the aim towards economic independence for women and men alike, i.e. that women and men must have the same conditions to obtain work and to support themselves. This means having the same opportunities to enter the labour market, to remain and develop on the labour market and to be able to combine work and family life. How we experience the terms of working life is also related to how we experience our entire life situation and are able to manage everyday activities. Women and men alike should be able to combine family life with working life. The issue of men's violence against women has been given top priority from the government. Women and men, girls and boys must have the same rights and opportunities to physical integrity. All people should be able to live without fear of being subjected to violence and assault.

## 1.2 Gender research in Sweden

Gender research explores the significance of gender in all conceivable areas, past and present. Common terms for this field of research are women's studies, gender research, research in gender theory, as well as closely related concepts such as 'feminist research,' 'men's studies' or 'masculinity research', 'queer studies', 'research in queer theory', 'research on sexuality' or 'research on homosexuality'. This plethora of terms reflects the rapid development within 'gender equality research'. The many terms signal that the focus may be on different aspects of the academic field of study, that the theoretical perspectives may be different, or that certain words have been added at different points in time.

This field of research has gone through an explosive development in Sweden since the 1960s. Since the 1980s, 'gender' has become a central concept. It is commonly used to identify structures of power in society, assumptions, values, actions, interpretations, identities, roles, and other aspects that together distinguish social gender from biologically given categories of sex. The analytical distinction between physical and culturally created aspects of sex and gender constitutes a starting point for this field of research.

## 1.3 The structure of (gender) research and higher education

**Högskoleverket (Swedish National Agency for Higher Education)** is the public authority that oversees higher education institutions (HEIs) in Sweden. The operations of the Agency are subject to instructions from the Swedish Government. The Government's annual public service agreement stipulates the direct government funding allocated to the Agency as well as the targets to be reached, specific tasks to be undertaken and how the results of activities must be reported. One of the tasks that the Agency has to deal with is to promote the equal treatment of students irrespective of gender, ethnicity, sexual orientation or disability. In 1998 a council for gender equality was established to support the Agency's work to promote equal treatment between men and women in higher education and research. The council, which consists of gender researchers, gender experts, students and lawyers, has to inspire and initiate activities to promote and highlight gender equality within research and higher education.

In 1998, **the Swedish Secretariat for Gender Research** was inaugurated by former Minister for Education and Science, Carl Tham. The basis for the decision to establish the secretariat was a report on women in higher education and women's studies, commissioned by the Swedish Government and entitled ("The will to know and the will to understand: gender, power and the challenge of women's studies", SOU 1995:110) included in GSD.

It was proposed that a secretariat for the enhancement of women's studies and gender research would be established, with information and co-ordination as one of its main purposes. Similar

national secretariats have long existed in the other Nordic countries. In Sweden women's studies Centers and Forums were built up during the 1970s and later, at several universities. However, the need to gain an overview of this field of research remains, as does the need to facilitate communication between gender researchers, both in Sweden and internationally. The Secretariat's work takes on various forms: analyses/studies, distribution of information and influencing of public opinion.

The Swedish Secretariat for Gender Research has initiated several reports with the aim of providing an overview of gender research in Sweden, and analyses how research is distributed within various disciplines and faculties. The purpose of this is to identify areas in which it is particularly important to make efforts to promote gender research. One area focused on in the reports is the object for GSD, gender in science, academy and higher education. Several prominent researchers in the field of gender science have been engaged in writing these reports and are thus represented in GSD.

An investigation made 2007 by the Swedish Secretariat for Gender Research shows that gender research is in varying extent going on at 29 of the 39 existing higher education units in Sweden. It is also clear that gender research is most frequent within the humanistic and social science disciplines.

In 2006, **the Swedish Research Council** granted funding for prominent centers for gender research, to be known as 'Centers of Gender Excellence', at three Swedish universities in collaboration.

## 1.4 National statistics

Statistics Sweden is a central government authority for official statistics and other government statistics and in this capacity also has the responsibility for coordinating and supporting the Swedish system for official statistics. After a comprehensive discussion on gender equality problems in Sweden and above all about how to make women and men visible in the statistics, the idea for a booklet on gender equality was launched by Statistics Sweden. The first booklet was published in 1984. This became the international breakthrough for the launching of the booklet. The booklet has been presented internationally in connection with the second UN Women's Conference in Nairobi in 1985 and the fourth conference in Beijing in 1995. The Swedish version of the booklet was Sweden's contribution to systematically describe reality for women and men. The booklet is translated into English and free to load down from the web. By exposing the situation for women and men, statistics actively contribute to change and the creation of equality in society. Not only are the statistics broken down by sex, it also reflects the gender equality problems that still exist in society. The statistics presented in the book are taken from the regular statistics that are produced by the government agencies responsible for statistics.

## 2 Analysis by topics

### 2.1 Horizontal and vertical segregation

Horizontal and vertical segregation within science and higher education is an important area in Swedish research certainly since 1995 when the government commissioned a brief national investigation about the situation of women in science and research in Sweden.

The research is both about horizontal segregation, like in which scientific fields and institutions men and women are found, and vertical segregation, like which positions is held by men and by women. The references covers most of the fields in the thematic coverage but is most obvious when it comes to health and medicine, technology and education. Some of the late references has focused on segregation within the theological field.

#### **Research questions**

The most obvious research questions of today are:

- Within the education system the lack of girls/women in natural science and technology is in focus. This is investigated at all levels, and from a mapping of the situation, the concerns are about why and what may have caused the situation and what can be done to prevent an inheritance of the problem to future generations.
- In medicine the researchers focus on the horizontal segregation by investigate the allocation of gender in different occupational groups; nurses, physicians. Another concern within medicine is weather the education promote an equal treatment of care-takers of both sexes.
- Vertical segregation is a concern in the academic world as a whole. What is stopping the women's careers? Why do women need longer time to become seniors or professors? The female research students are in excess in most subjects, but peter out along the way? Leaking pipeline.

### **Research approaches**

Most of the research is conceptual covering case studies where qualitative interviews and observations have been used.

- The historical and present situation when it comes to horizontal segregation is mainly accounted for by analysis of statistics.
- Dealing with the causes and possible measures researchers use various approaches, like developing new theories and frameworks of conceptions.
- Several gender researchers work with introducing and maintaining gender studies in education, as a single subject but also as a contribution to other subjects. The acceptance and outcome of this work is investigated in mainly qualitative studies.
- Vertical segregation is mainly accounted for by analysis of statistics, but also qualitative analysis of statistics have been added to qualitative studies in order to discover causes and suggestions for measurements.

### **Findings**

In spite of awareness and a long tradition of democratic efforts to reach gender equality, Sweden is considered to be one of the most segregated countries in the western world. One explanation to this is found in the structure of working life, where more than 80 % of the women are in the workforce and where occupations as caring and nursing have been professionalized (horizontal). Another explanation is our political and economical democracy, where both wives and husbands are supposed to work and where home help in families is not possible due to economic factors, which mean that the women, beyond making career, most often due to tradition, have to take care of the home work (vertical).

A big study has been made by Swedish National Agency for Higher Education with help of registered information concerning 33 674 university undergraduate students and approximately 29 000 PhDs, who had defended their doctor's thesis 1980-2001. The main findings concerning gender in science are:

- That men, to a higher extent than women began research studies. Children with parents who have a doctor's degree more often start research studies. Working class children also become doctors, but not if they have studied to be physicians. The 1990s was a momentary step forward for gender equality among research students.
- Men become professors to a higher extent. One concrete example: in the group of women and men who defended their doctor's degree in 1991 eight percent of the men but only 4 percent of the women were professors within twelve years.
- The possibilities to make career are different for men and women. Research shows that the probability to reach higher positions is considerably higher for men than for women. During the 1990s the average share of women in managing positions has been around 25 %.
- It also looks like there is a negative connection between parental leave and career.

### **Gaps**

We see that Sweden has a long tradition on research of horizontal and vertical gender segregation. However we can see that some sectors, like technology, medicine and education, are more covered than others. We also experience that the gender research solely emphasis

women's conditions and to a great extent, so far, has omitted to study the conditions of men in segregated sectors.

## 2.2 Pay and funding

National statistics show that there in Sweden is in average an inexplicable gap between men's and women's salaries of about 5–10 % depending on sector in work life. These gaps also exist within academy even if most of our entries focus on the difficulties for women to reach funding necessary for their academic career. The injustice that women in academy and science often indicate is that they encounter difficulties receiving funding for their research.

### **Research questions**

The research questions within this topic focus on:

- The different salaries that women and men receive both in the same sectors (vertical) and in different sectors (horizontal),
- the possibilities for female research to receive research funding and the demands put on women in applications
- and how women respond on these differences.

### **Research approaches**

Both quantitative and qualitative analyses have been carried through, in depth interviews with few respondents as well as large surveys. There have been commissions from the Swedish ministry of research and education through investigations and evaluations to give a collected picture of the allocation of economic power and economic resources between women and men.

### **Findings**

- Some of the authors consider that the resources for research are very unequally spread between male and female researchers and that woman in research and higher education in Sweden are discriminated against. More than a decade ago Wennerås and Wold, in their much attended article in Nature 'Nepotism and sexism in peer-review', proved that female applicants for research funds had to be 2.6 times as productive as their male competitors in order to be regarded equally productive as the male applicants. They conclude their article with the statement that "the reason that there are so few women in academy is not the glass ceiling, it's a "leaking pipeline". There is a distillation causing a predominance of men in measuring male applicants with another scale than female applicants". The authors claim that the credibility of the academic system would be undermined in the eyes of the public if it didn't allow scientific evaluation in its own scientific evaluation system.
- Different investigations has been accomplished by researchers commissioned by the government. These research reports show a lack of economic equality between women and men. On one hand the resources for research are very unequally spread between male and female researchers and on the other women in research and higher education in Sweden encounter discrimination.
- Recent research shows that as the status of teaching has decreased with women's entering, the salaries have decreased accordingly.
- Research also shows that high educated women are demanding lower salaries than men in the same position and that the employers offer women lower salaries than they offer men.

### **Gaps**

There are relatively few studies that analyse differences in salary between men and women in the academy. Most of what has been done regarding scientific positions is research reports ordered by the union for academics, Saco – The Swedish Confederation of Professional Associations.

Future research in this field could deal with the question if women in managerial positions get the same economic compensation as men and if women in male dominated sectors get the same salary as men. It could also be interesting to know if there are differences in mobility

between men and women and if mobility between institutions is favourable in relation to career possibilities.

## 2.3 Stereotypes and identity

Stereotypes and identity is a frequent field of gender studies in Sweden.

### **Research questions**

Gender patterns in society are reflected, and how and why gender stereotypes are created and maintained. Male and female as a social construction is here mostly the initial position, with the understanding that men and women fit equally for different positions and fields, but that their socialisation and experiences makes them chose differently and be interested in different fields. The “why” and “what can be done-“ questions of horizontal and vertical segregation research often end up in stereotypes and identity. But there are also the “biologistic” view that states that men’s and women’s brains function in different ways and that due to sex men and women fit better for different positions and in different fields.

- Biological essentialism and biological determinism explains the subordination of women with “the nature of women” and biological factors. Medical research results have often been used as bats in this debate. One problem with biological research comparing women and men often becomes a prediction that fulfils itself.
- Many authors discuss the way learning is performed, for example how female engineering students experience their learning situation?
- In some text the epistemology of science is handled, that the focus of attention of technology is mostly the technology itself – its theories, methods, epistemology and practice – not women, gender and/or gender/power relations.

### **Research approaches**

When it comes to quantitative descriptions and analysis of men and women in different sectors this field is often studied in big surveys. But when researchers deeper try to understand the essence of the stereotyped societal patterns the researcher often use qualitative methods; in depth interviews, case studies or observations.

To support understanding of women, gender and/or gender/power relations researchers focus on creating new frameworks of conceptions and demarcations, historical aspects, politics and policies and strategies of integration. Gender research has to be relevant in the concept of the topic where it’s working. Gender research can provide a change in the academic institutions in their aim to develop their role in the distributed research processes of today.

Much of the research refer to evaluations and methods of interventions in order to brake the stereotyped patterns.

### **Findings**

- Studies on younger pupils (8–15 years) within the fields of education has shown substantial gender differences in the latent dimensions of cognitive abilities, where girls had an advantage on verbal-educational dimension and the boys on narrow numerical the analytic dimension, often explained by the gendered society and how boys and girls are brought up and treated by parents and teachers.
- The university education of engineers shall secure the shaping of the future technology dependent society. These students are by tradition mainly men, and the education has developed from the needs and preferences of men. A big survey discovers that female students’ preferences put focus on characteristics in education that need changes in order to better support the future engineers to fulfil their mission in society. Many authors discuss the way learning is performed, for example how female engineering students experience their learning situation.
- There is a need for increased knowledge in gender science, a clarification of the responsibilities, and access to directed resources for development in order to make the decided goals a reality in university education and research.

- Work done by teachers, nurses and social-workers is central for the reproductive processes in society, and as these professions traditionally are looked upon as women's work, the caring professions are placed low. Through a lack of understanding of the stereotyped ideas about gender men are placed higher than women in the productive processes of society.
- In just a few areas of the medical education the teaching has a gender perspective. This results in the fact that most physicians have a very important knowledge-gap. An interdisciplinary view of gender and sexuality is necessary partly to fill out the medical knowledge gap and partly to get better possibilities to understand and respect peoples' choices of lifestyle.

### **Gaps**

This research area is thoroughly researched in Sweden. The research results however, need to be taken into account and action.

## **2.4 Science as a labour activity**

Since the gender segregation in the academic world has been highlighted in the early 1990s this question has been of a great political interest and different investigations have been accomplished by researchers, commissioned by the government.

### **Research questions**

- The research on the conditions for women in academy and in scientific positions for example focus a lack of economic equality between women and men.
- How the resources for research are spread between male and female researchers and if women in research and higher education in Sweden encounter discrimination.
- Are positions that men hold and the sectors where they are found in the academic labour market considered to be high status? Are women found in the low status sectors?

### **Research approaches**

There are big national investigations, consisting of different research reports that cover quantitative data as well as more qualitative studies with in depth interviews.

### **Findings**

- Earlier research show that when a considerable proportion of women enter a male dominated, high status labour market, men tend to abandon this market and it becomes a low-status market.
- In many reports examples are taken from the medical profession. One study shows that male physicians more often, and at a younger age, held positions as Senior Physicians at university hospitals. Women physicians had two careers, one as a scientist and the other as a physician, whilst some men dropped out from medical training and concentrated on a career in pre-clinical research. When collaboration with a former supervisor continued after graduation, males were viewed as equal partners, whereas females were viewed as dependent and in need of support.
- Another finding from the medical area shows that the prestigious specialities (surgery and internal medicine) are found to achieve and sustain their high position in terms of status by contrasting themselves to the low-status specialities (geriatrics, psychiatry and general medicine). The status hierarchy of doctor's professional role is broken down into three parts; diagnosing, curing and caring. The curing, is explicitly associated with effectiveness and masculinity (e.g. in surgery), as opposed to caring which is linked to inefficiency and femininity (e.g. in geriatrics).
- Empirical data from a technical science workplace points toward a range of obstacles posed against the women by the informal rules and norms of their male co-workers. These internal social relations of the organisations work against women independent of their eventual family responsibilities or the labor-markets way of functioning. The theoretical analysis specify the forms of adaption – and protest-strategies available to the women as subordinated sex and deviant category. The analysis indicates the

necessity to identify the kinds of informal systems evoked in organisations by the female competition. The theoretical aim is thereby to formulate tools for understanding what happens when some women enters into male-dominated workplaces. Womens' appearance in the organisations initiate homosocial re-actions in the collective as in the colleagues' system i.e. the formation of gender-power system which infiltrates and cut the solidarity systems so that women are rejected and excluded.

- A study on female university teachers in physics and chemistry where all were mothers shows that the teachers face a problem with combining family and career. Many of the respondents doubted if they really were willing to dedicate themselves to the conditions of the academical research career. The statements of the women show that there is a male resistance against women when it comes to positions, power, and influence, even if some women deny discrimination.
- It also looks like there is a negative connection between parental leave and career.

### **Gaps**

The labour market in Sweden has been thoroughly investigated through The National Institute for Working Life, a research institute and knowledge center for working life questions. The research has focused on relations on the labour market, and research has also been conducted in cooperation with trade unions. In most investigations academics have not been singled out, which means that we don't know enough about the conditions for researchers and scientists in working life outside the academy. Research as a labour market activity should be more thoroughly investigated

### **Scientific excellence**

"Scientific excellence", "excellent science" and "excellent researchers" are concepts that have lately been frequently used in academia and that seem to be more and more conducting the possibilities for researchers in Sweden to get sustainable research funding. But what are the criterions for excellence? And how is it measured? Gender researchers are questioning if gender research or using a gender perspective at all can be considered as excellent according to the measures used, and they argue that the criterions for excellence are gender biased. There may be an assumption that scientists are competing on equal conditions, but excellence is very much about belonging to social networks. That the assessment of research and researchers are not purely objective was shown a decade ago by Wennerås and Wold in thier well-known article in Nature.

### **Research questions**

The scientific excellence environment are dealing different types of research questions, for example:

- Changing gender relations, intersectionalities and embodiment are studied.
- What are the significance of sex/gender i different golbal processes of change in a world where sex-tourism, prostitution, trafficking, AIDS, etc have reached a range as never before?
- How can critical and concrete analysis of the many shapes the power of men approve, bring better knowledge of the conditions of life for women and men?
- How do elites of power arise in the interaction between social categories as gender, class and ethnicity?
- How can new understandings of the body be treated, where sex is a potential and not a problem and disadvantage?

The aim of this research is to create new, complex knowledge of basic research character, that can be useful in order to promote as well gender equality, more impartial conditions for all people regardless ethnicity, race, sexual orientation, class, age, nationality, disability, etc.

### **Research approaches**

The dominating questions that can be referred to scientific excellent fields are about the re-definition in medicine and technology and the implications it brings. We also find examples on what new results have been found when for example studies have been made on women and

when the different conditions for men and women are highlighted. Here we find epidemiological studies on, for example, psychological aspects.

### **Findings**

The findings from the dominating questions of the entries in the GSD, states that;

- there are gender bias in fields of research such as medicine and technology where the gender perspective has traditionally been non-existent. Some of the research on medicine can be allocated to the theme science about women. Research now shows various themes of the medical oppression of women, alleged illnesses due to the female sex, incompletely researched illnesses due to the fact that most research is made on men, and the specific life-conditions of women. The gender perspective that twenty years ago was in the margin in medical research, today claims to be central for the understanding of human beings and will hopefully have an influence on future research design.
- Some of the research on medicine can be allocated to the theme *science about women*. For example an article stating that female medicine has been acknowledged as a science first when entering the 21st century. Articles published 1996-1999 in the Journal of Medicine in Sweden, had a gender issue in 0,5 per cent. Research now show that this number has increased appreciable through the last years covering various themes as the medical oppression of women, alleged illnesses due to the female sex, incompletely researched illnesses due to the fact that most research is made on men, and the specific life-conditions of women. The gender perspective that twenty years ago was in the margin in medical research, today claims to be central for the understanding of human beings and will hopefully have an influence on future research design.
- Another of many examples from medicine is that there is insufficient knowledge on some of the aspects of disease or ill-health, for example those relating to pain, that affect women more often. This results in women being said to suffer from "vague" or "indefinable" health problems. A research overview enlightens the various accesses to medical care of women and men and analyzes the difference with the background of gender medical research. Other issues put in question are health differences of women and men and a gender perspective on the quality of medical care.
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- female physicians tried to adapt to a traditional scientific organisation created by men, for men. According to this research gender equality is reached, but women have to conform to existing male norms, and in the future, there is a risk that this competent group of women will become stressed and burned out.
- there are male networks in the academy. Men help and support each other. A resistance towards women is seen most clearly in research positions, research resources, power and influence. The gendered structure of caring work puts men at an advantage in their careers. The science culture is not women friendly. To do research is not a straight road; on the contrary, for most women, it is a winding road.

### **Gaps**

The research on gender bias in scientific excellence is not frequent, the research that we have found is mainly covering medicine and technology. Although gender as a research topic has recently been considered to belong to the sphere of scientific excellence, deeper analysis of the gendered construction of excellence is still required. Furthermore the research in the private sector still remains unknown to the public.

## Gender in research contents

A progress towards the gender question can be distinguished within Swedish research policy. The Swedish Research Council in 2006 announced funding for gender research centers, known as 'Centers of Gender Excellence'. The argument was that Swedish gender research during two decades had developed to be a broad field with professorship, doctoral students, research schools and research centers and were now internationally well-reputed, and that it was time to make a strong and concentrated national investment in the field. Three environments have been chosen as new centers of excellence within gender research and more are to be established.

### **Research questions**

We find three areas of research questions within this theme:

- Women in science, for example historical descriptions and reports on how women have obtained their place in the scientific world, and historical biographies of women in science.
- Science about women, where research is focussing on women and women's conditions in scientific fields, for example medical research on women.
- Gender perspective on science, dealing with the question on how to integrate and mainstream a gender perspective into scientific subjects, which often build on a critical analysis of gender bias in the scientific knowledge and points out new directions, both methodological and theoretical, for approach of research. and technology.

Nature/Culture Boundaries and Trans-disciplinary Encounters are studied such as:

- Gender and Animals in Research
- Gender and Physics: focus on understanding "women/gender in science"
- Gender and Trans-disciplinary Didactics
- Gender and Neuroscience
- Gender and Bioethics
- Gender and Biosociality

### **Research approaches**

An evaluation committee has evaluated the Centers of Gender Excellence and the evaluation panel comprised international scientists and experts in the field by visits, interviews and studying documents. Furthermore:

- Epidemiological studies for example on physiological aspects.
- Regarding gender perspective on science we find all sorts of investigations, evaluations and interventions.

### **Findings**

When the initial evaluation of the Centers of Gender Excellence was made after a year the Panel:

- found that all the Centers had commenced their work according to plan and were able to present well considered strategies for publication and internationalization of their work, as well as plans for new recruitment.
- recommended continued, strengthened collaboration between the newly established Centers and other Swedish research environments, focusing on gender and political changes, globalization and Europeanization, and international relations.
- considered that Swedish register data are still underused in gender research, but note that the Centers have initiated studies that make use of data from questionnaire surveys and registers.

We find examples on what new results that have been found, when for example studies have been made on women, and when the different conditions for men and women are highlighted.

- On the perspective on *women in science* we find biographical research, for example a biography where forty nine female professors from Lund University, the oldest university in Sweden, tell their career stories.

- An example on findings on the perspective *gender perspective on science* is the gender-theoretical model for change and analysis that is based on the so-called doing-gender approach. The viewpoints that the doing-gender approach communicates makes it possible to change existing attitudes and expectations concerning gender, since the construction of gender is a continually ongoing process that differs in different contexts.
- Many articles show how new perspectives lead to new theories and new findings and also give examples on how a gender perspective can be applied on different scientific fields.
- An example of the ungoing process are the booklets on gender perspective on different disciplines included in the GSD. The Swedish National Agency for Higher Education in cooperation with the Swedish Secretariat for Gender Research are publishing a series of booklets highlighting how a gender perspective can be applied on different scientific disciplines. The booklets are written by researchers within each scientific discipline and the aim is to supply a basic introduction to researchers, teachers and students about gender perspectives. To use a gender perspective on a subject is to add another scientific dimension of analysis. The booklets emphasize that this dimension can support the different subjects and give new tools for critical analysis of theories and research results. The booklets that have so far been published covering 13 different scientific disciplines.

### **Gaps**

The booklets are continuously produced by The Swedish National Agency for Higher Education. The lack of knowledge is payed attention to and questions are asked. New theories and frameworks of conceptions, as well as working with new definitions of categories will bring new answers.

Men's research and masculinity research is still in its infancy. In order to fill the gaps in gender research these disciplines need to develop.

## **2.5 Policies towards gender equality in science**

Due to investigations made by, for instance, The National Institute for Working Life and The national Agency for Higher Education, the situation in Sweden has been, and is, well known to the government. The strong connection to practical gender equality work has been put forward as significant for Sweden. The political ambition to support gender equality has been in focus. Efforts have been made to promote gender equality as a whole, but special efforts have been made in favour of the academic world.

In the mid-nineties the Swedish government considered it problematic that mostly all high positions in universities were possessed by men. The consequences that the experiences and problem formulation of women was not reflected sufficiently, was seen as a problem in order to reach "highest possible level of knowledge". The government felt that the development towards gender equality was too slow and the proposition was an initiative of a number of measures to be taken in order to accomplish a more gender equal allocation of teachers in the universities. One of the initiative concerned gender research.

In 1995 the minister of research and education, Carl Tham, carried through a one time venture order to increase the number of female researchers

### **Research questions**

- Research questions focus on political interventions made to contribute to gender equality in the academy and to change the quantitative balance of power between men and women. For example what happened to female researchers who got research assistant assignments? Did they stay in the academy? Did the assignments contribute to increased gender equality? Much of the research has been focused on the Tham-professorships in the mid-nineties. There are many very critical articles and reports on the political intervention in the academic autonomy.

- The political decision to contribute to the local work in universities of gender equality, by making new appointments possible, caused a big debate. The arguments have mostly been about the proceedings of the appointments and the possibility to use positive measures.

### **Research approaches**

National investigations as the basis for political decisions and evaluations of these decisions both from a critical point in articles and doctoral thesis and in evaluations and peer reviews ordered by the national research council. The approaches are quantitative analyses as well as in depth interviews.

### **Findings**

- Researchers state that on the one hand, there is a political interest in balancing the number of men and women on the most prestigious academic positions. The academy, on the other hand, strives to maintain autonomy towards the political field. Mertonian imperatives can here be said to govern, where meritocracy and the freedom of research are highly regarded.
- The academy is not opposed to gender equality per se, but there is a fear for the loss of self-determination. Political interventions based on recommendations tally well with the academic ideals, whereas directives that are understood as compulsive, do not. The researchers argue that the Tham-professorships in the mid-nineties are example of the latter. The advertising of the posts was combined with the possibility of employing affirmative action, which was seen as a threat against meritocracy.
- The political steps have been analysed in terms of translation and the discussion focuses on how political measures have been received inside the academy and how the academy strived for adjusting external requirement for change to suit their ideal. One article shows that the original intentions of Tham professorships tended to be watered-down, and that the primary intentions were hidden and their instatement was partly merely symbolic. Representatives of different disciplines tried to translate the gender content of the political investment into terms that better suited the doxa of the discipline and "gender" risked being translated into "studies on women". The success rate of the intervention was dependent on co-operation and the alliance between politicians and gender researchers, which in itself is challenging.
- "Thamprofessorship" has been a word of abuse at the worst, to some only a disparaging term. But there has also been supportive spokesmen, not the least those who been favoured have been positive.

### **Gaps**

As an effect of a political decision the National Institute for Working Life (ALI), where a very extensive collection of publications on worklife research had been built up, was closed down once and for all in 2007. Many of ALI's publications were distributed to new owners. Up till June 2007 the Institute conducted critical research on the labour market and equality issues, which formed the base for policy suggestions of positive measures and legislations, as well as evaluation of positive measures. The task of the Institute were after the dissolution allocated to different organizations and universities. Until this new structure is working properly, there will be a marked gap concerning gender policies in science.

## **3 Conclusions**

Gender studies/theory is a young and expanding discipline. Despite its short history it has undergone several metamorphoses. Its concepts, methods and research subjects are still a matter of controversy, and it is impossible to give a definition that is valid for all gender studies.

### **3.1 Historical perspective**

#### ***Feminist criticism and women's studies***

Feminist criticism of gender inequality in the 1970s provided the impetus for gender studies. In academy, moreover, it was initially a critical response to the lack of knowledge and interest that

was shown in half of humanity. 'Women's studies', as the subject initially was called, started to complement the knowledge base of various disciplines. It was considered necessary to add knowledge about women's lives and conditions in order to ensure that the knowledge base was not biased and that ignorance about the situation of women did not lead to injustice. It was considered necessary to study the situation and to fill knowledge gaps.

However, it proved difficult to mainstream the results of women's studies. These results challenged the overall disciplinary structure and in time disciplinary criticism grew stronger. The new insights were used to scrutinize academic traditions. Studies were made of the potential gender blindness of various disciplines, but more subtle questions were also raised about the influence of andocentric issues on all research. Established concepts and theories were reappraised. Attention was drawn to the discrimination of women researchers and women pioneers in various disciplines. Such studies, which may be characterized as complementary research, cannot be said to be state of the art today. The progress made varies in different disciplines and the task is by no means finished. Complementary research is almost always a necessary first step towards developing gender studies in a new field, and criticism of gender blindness in individual disciplines is still an important task.

### ***Sex and/or gender***

Two distinct terms were coined in women's studies at an early stage: "sex" and "gender". The purpose of distinguishing between these two concepts was to emphasize the difference between biological and social sex. According to some researchers one term – sex or gender – is enough, while others use both. However, all researchers share an interest in the cultural construction, the ideas, facts and values that it involves, and its functions and effects. Gender is manifested at many levels: in the case of individuals, as an aspect of their own personalities; at the cultural level, in figures of speech, metaphors, categories; at the social level, as a principle for organization of work and decision-making processes. A gender system exists in every society. It consists of all the notions of male and female that exists in a certain place at a certain time and all the consequences as regards that does what, who decides what, and how we perceive ourselves and one another, collectively and individually. Gender is a concept that identifies a specific aspect of all human life.

### ***Feminism and gender studies***

There would have been no gender studies without feminism as a driving force. But whereas gender studies is a field of knowledge and study, feminism is both a political movement and a field of knowledge and study, the latter being called feminist research or feminist theory. In gender studies the terms gender studies and feminist research are sometimes used synonymously for the discipline. Other researchers in the field distinguish between gender studies and feminist research. Feminism in such cases represents a more critical approach with a perspective on power.

## **3.2 Dominant research**

The main subject of women's studies in Sweden was the past and present position of women in society, i.e. not only the situation of women, but also their social relationships, including relationships between men and women. These studies also raised issues that could not be addressed either by the established disciplines or in the framework of women's studies. It also became clear that it was not possible to understand the complex nature of social relationships solely by means of studies of women's material circumstances, social affiliation, actions or failure to act etc. Historically and culturally determined conceptions of sex, or gender, proved to be important for people's understanding of other people and the organization of social relationships.

Gender researchers study how people think, interpret, perceive, symbolize, feel, write, paint, dance, fantasize, wish, experience, define – in other words "construct" – what we normally call sex and what this word means and what it meant in the past. However, the epistemological dimension of gender studies does not deny the material, biological aspects. Gender is about power and resources and figures of speech, body and soul, individuals and groups; about whether, and if so how, one gender is superior to the other and how such a situation has arisen

and been reproduced. Gender is a specific object of study, but the issues could be formulated with reference to most of the things people do. It is therefore a wide-ranging and complex discipline. All gender researchers cannot know everything about gender, and many of them are not interested in gender studies outside their own subject. Others regard gender theory as a discipline in its own right that finds inspiration in other disciplines.

The purpose of interdisciplinary gender studies is to understand gender from as many different viewpoints as possible. The knowledge obtained from interdisciplinary gender studies can also be used to improve understanding of problems in other disciplines. It is difficult to draw a precise line between intradisciplinary gender studies and gender theory with an interdisciplinary focus. There is also intensive communication and extensive collaboration between the two approaches. Despite the dynamic development of interdisciplinary research, gender studies in Sweden are carried on mainly in existing disciplines and have in the last few decades significantly helped to develop and broaden subject-specific knowledge and theory in some of them.

***Some current theoretical challenges:***

- to refine the concepts that define gender-related aspects of reality;
- to exploit the potential of all disciplines for contributing to the development of gender studies, and vice versa;
- to bridge the gap that seems to exist between abstract, internationally inspired theoretical debates and Swedish researchers' preference for empirically oriented studies.

***Some current practical challenges:***

- to promote both front-line gender studies and gender studies in disciplines where progress has been slow or where strong resistance has been encountered. A balance should be sought between breadth and excellence;
- to prioritize forward-looking research without stifling creativity in the field of gender studies;
- to promote both interdisciplinary and intradisciplinary gender studies.

### 3.3 Main findings

Regarding segregation between men and women the main findings in science are:

- That men, to a higher extent than women began research studies, children with parents who have a doctor's degree more often start research studies, working class children also becomes doctors, but not if they have studied to be physicians.
- Men become professors to a higher extent.
- The possibilities to make career are different for men and women.
- There is a negative connection between parental leave and career.

Regarding pay and fundings research shows that women's salaries are in average 84 percents compared to men's at equal positions, and that it is far much more difficult for female researchers to get research fundings compared to there male colleagues.

Determined conceptions of sex, or gender, prove to be important for people's understanding of other people and the organization of social relationships, which explain stereotyped views on men and women and the gendered division of labour.

Since the gender segregation in the academic world has been highlighted in the early 1990s the science as a labour market has been of a great political interest.

Gender in research contents has to be understood from many different viewpoints, why interdisciplinary gender studies are important and can improve understanding of problems in other disciplines.

Researchers state that on the one hand, there is a political interest in balancing the number of men and women on the most prestigious positions in the academy. The academy, on the other

hand, strives to maintain autonomy towards the political field. Mertonian imperatives can be said to govern in academy, where meritocracy and the freedom of research are highly regarded.

### 3.4 Main gaps

- We see that Sweden has a long tradition in research of horizontal and vertical gender segregation. However we can see that regarding the scientific field, sectors like technology, medicine and education, are more covered than others. We also experience that the gender research solely emphasis women's conditions and to great extend so far has omitted to study the conditions of men in segregated sectors.
- The public scientific research is considerably well covered. The research in the private spheres remains however less available to the public.
- An interdisciplinary view of gender and sexuality is necessary partly to fill out the knowledge gap and partly to get better possibilities to understand and respect peoples' choices of lifestyle. Men's research and masculinity research is still in its infancy. In order to fill the gaps in gender research these disciplines need to develop.

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