Gender Equality in Academia - from Knowledge to Change

Øystein Gullvåg Holter and Lotta Snickare (Eds.)

CAPPELEN DAMM AKADEMISK

OPEN ACCESS

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FROM KNOWLEDGE TO CHANGE

Cathinka Dahl Hambro (Trans.)

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Preface to the English edition

The cover of this book shows Arnold Haukeland's sculpture "Air", made in 1961, embodying the free spirit of science. The sculpture stands in the middle of the campus at the University of Oslo. This is where staff and students from different faculties meet daily. This book is written in the interdisciplinary spirit of "Air".

The book is a revised and translated version of the Norwegian anthology *Likestilling i akademia* (2021). The text is adapted for international readers with more detail on the case context (Norway) where needed. Arguments are clarified and connected to international research debate, along with an update of sources.

Why is the top level of academia still often dominated by men? Why is this difficult to change? This book offers an in-depth study of why gender equality in academia is hard to achieve – and a study of actions and measures that work. It is based on a broad range of evidence from a multi-method approach including surveys, interviews and action research.

Despite Norway being on the frontline of global gender equality developments the prevalence of men at top levels in academia persists, according to the results of the new study. However, in this "experimental zone" of increasing gender equality, both the resistance and barriers, and the potentials and possibilities, take on new forms. The book includes models of these new forms and mechanisms recreating gender inequality, as well as ways they can be countered. Thus, it is relevant for a wider global community searching for better paths forward to realizing gender equality.

We would like to thank editor Marte Ericsson Ryste for her support in publishing this book, Cathinka Dahl Hambro for her translation and

assistance with revision, the institutions that have financed the work, and, not least, all of the researchers and students who have shared their experiences with us.

November 2022,
Øystein Gullvåg Holter and Lotta Snickare

Foreword

Female students entered universities and university colleges a long time ago. Nonetheless this has not produced a corresponding effect on the proportion of women in top academic positions. At the University of Oslo (UiO), we see an accumulated gender gap, which is particularly visible in the natural sciences and technology, having 40 per cent female students yet only 24 per cent female professors (2021). We recruit fewer women than the recruitment pool suggests, and it is obvious that this systematic dropout of women higher up on the career ladder results in a loss of talent – something we cannot afford. We share this challenge with other European academic communities.

There is little scientific support for hypotheses that the accumulated gender gap in academia is only due to academic traditions and oversight. Nor do the assessment and employment systems appear to be objective enough to bring about changes on their own. We have to deal with this knowledge actively. At the Faculty of Mathematics and Natural Sciences (MN) at UiO, we have, in collaboration with the Centre for Gender Research (STK), organized this work through the research project "FRONT: Female Researchers on Track" (2015–2019). With the Faculty of Theology, the Natural History Museum and the Royal Institute of Technology (KTH) in Stockholm, this project has been continued as "FRONT2: Future Research and Organizational Development in Natural Sciences, Technology, and Theology" (2019–2022). Through FRONT we have systematically sought new knowledge as a foundation for long-term measures and further work towards improved gender balance in our organizations. This book describes key elements of this new knowledge, and how such insight may be used when working for change. This knowledge is important internationally, and the initial Norwegian publication has therefore been augmented by this revised English edition.

The world faces enormous challenges requiring restructuring, which is dependent on research-based knowledge from universities. However, the development of a sustainable society presupposes an unbiased research and education system encompassing a diversity of research perspectives, as well as educating candidates from all segments of the population. We know that academic role models of both genders are essential to successful student recruitment, which in turn forms the basis for an academic career path. Consequently, student recruitment and career opportunities are closely entwined and established in the learning environment, work environment, and research culture we create together, among both students and employees.

The absence of women in higher academic positions affects universities' societal position and is much more than just a challenge for women themselves. Universities are important carriers of culture – they manage, develop, and disseminate knowledge, and educate the citizens of tomorrow. Skewed selection resulting in a persistent gender gap in academia must therefore be considered to be a comprehensive democratic problem. This perspective is rarely addressed in the debate, despite the fact that the university is generally concerned with rectifying social inequality. It should not be the exclusive domain of one-half of the population to define research agendas and manage the development of knowledge in society. The work to rectify gender skewness in academia, therefore, requires particular attention from all leaders and employees in the sector, in synergy with political leadership, and the sector's range of instruments – if we truly wish to take this challenge seriously.

Recent research has led to increased recognition of the research organization's and the research system's central role and revealed that competition for research funding and academic positions is not gender neutral. This recognition undermines the very idea of meritocracy, which is a fundamental ideal in academic culture and tradition. This is particularly important in light of the fact that competition is intensified by the accumulation of competitive advantages. The belief in scientific quality as an objective dimension, unaffected by the system and society within which it is assessed, appears naive. Academia's subjectivity is well documented in international research, and *implicit bias* (unconscious

prejudice) is a phenomenon of which academic leaders and organizations are increasingly aware. Additionally, gender-selective patterns are reinforced by professional hierarchies with their origins in old academic traditions. Moreover, research shows that a fiercely competitive climate may strengthen the "masculinization" of the researcher role, and exposes hierarchies among men, while simultaneously excluding women. Interaction between different hierarchies, and strong competition under current competitive conditions must be assumed to contribute to the significant gender gap that we find in top academic positions. FRONT has placed a great deal of emphasis on highlighting and understanding the significance that different professional hierarchies and implicit bias might have for career opportunities for women and men in our system. "Men and masculinities" is emphasized as a particular focus area.

FRONT's objective is to create long-term cultural change to improve gender equality and gender balance in the cooperating units, where the main objective is to rectify the gender gap in top academic positions. With funding from the Research Council of Norway's BALANCE programme, which aims to improve gender balance in Norwegian research, we have implemented and followed up research-based initiatives with close involvement from the management in the different departments. Through this interaction between research-based initiatives and research on the initiatives, we have developed an extensive knowledge base during the course of several years. This systematic, knowledge-based, working methodology with a long-term focus (10-year perspective), followed up directly by top leadership, is unique in our sector. It has also been vital for achieving recognition of gender balance as a significant organizational challenge in our units. Leading this work and following the organization through comprehensive development has been a pleasure, but also a challenge. It is my distinct conviction that close leadership involvement is essential for success, although of course these efforts must also progress elsewhere in the organization. This book is based on our work and our experiences in the project, and presents our research findings. I believe that the knowledge base developed here will have considerable transfer value both within and beyond the higher education sector.

I wish to thank everyone who has contributed to the project during the past several years! This book represents a very important part of the work, and I want to thank all the authors, especially Øystein Gullvåg Holter and Lotta Snickare, for their major efforts in producing, analyzing, and disseminating knowledge gathered from our organization. This knowledge has been compiled in such a way that it should be highly useful to others working for a gender-equal academia and working life. In addition to the authors, I wish to thank the project's administrative leaders, the project coordinators, steering committees, research groups, project participants, partners at UiO and KTH, heads of departments, and the dean's office at the MN faculty. Additionally, many thanks to the Research Council of Norway, which has funded and followed the project with great enthusiasm.

I hope the readers of this book will find the project and research findings interesting. I also hope that the book can contribute to the important work of change currently happening in Norway and other countries!

Professor Solveig Kristensen, Dean of the Faculty of Mathematics and Natural Sciences and project leader of FRONT, University of Oslo

Oslo, 1 November 2022

Introduction

"In my opinion, gender equality is, honestly, very important to us," says a male leader at the Faculty of Mathematics and Natural Sciences in the University of Oslo. He is not alone. A large majority of both employees and students at the faculty say they want a gender-equal workplace. How does this look in reality? Is the faculty gender-equal or not? It is easy to see that there is gender imbalance – in which the top academic and research leader positions are dominated by men – but is the faculty gender-equal? If not, why? And in that case, what can be done to increase gender equality?

The project "Female Researchers on Track" (FRONT) was initiated in the autumn of 2015 by the Faculty of Mathematics and Natural Sciences in the University of Oslo to analyze to what extent a lack of gender equality may be the cause of gender imbalance at the faculty and, if so, what would need to change in order to increase gender equality. The three-year project was funded by the Research Council of Norway as part of the programme "Gender Balance in Senior Positions and Research Management" (BALANSE).[1] The programme's primary objective is to improve gender balance on the senior level of Norwegian research through new knowledge, learning, and innovative measures. The call for proposals that FRONT was awarded placed great emphasis on a *combination* of measures and knowledge/research. This involved projects with applied utility, which also would constitute important research.

Many studies show that academia is not gender-equal. However, these are normally investigations of an academic organization from a specific perspective, or as a limited process. In this book, we present results from a broader perspective. The FRONT project studied the entire organization – not just focusing on a particular segment – and also implemented measures. Moreover, we have analyzed the effects of the measures, implemented for increased gender equality, through action

research. The material contains two questionnaire surveys, one for students and one for employees, as well as individual interviews, and action research linked to the measures. Altogether, this provides a broad and varied set of data. Therefore, these studies constitute a rich source of new knowledge, which is also important because it reveals the situation in a Nordic country, where gender equality has progressed further than, for example, in other parts of Europe and the U.S.

The surveys expand the gender-equality research area especially in terms of careers, work environment, and academic culture. Most existing studies are limited to a few topics (such as career or harassment), with relatively few variables. The questionnaires used in the FRONT surveys included many topics and variables, which in turn were developed and investigated further in interviews. Yet the project did not stop there. Within the same organization, we have also implemented a series of measures and initiatives aiming to change the organizational culture towards increased gender equality. These included a leadership development programme for the faculty management, a seminar for PhD supervisors, the establishment of a network for top female researchers, and a career development programme for women in temporary positions. The effects of these initiatives have also been analyzed. What has worked well and what has not worked?

An important dimension of the project's strategy was that the two parts – research and measures – should work together. This means that research results, in the form of new knowledge, have been used both in designing and implementing the project's measures. In turn, experiences from the various initiatives have been used in the development of surveys and interviews. This combination of methods has been essential, both in terms of identifying "robust" results, meaning patterns and tendencies emerging across methods, and being able to interpret different data sources in light of each other. The research has taken place in collaboration with the Faculty of Mathematics and Natural Sciences and the Centre for Gender Research (STK), both in the University of Oslo.

As mentioned, the book is based on three types of material: questionnaire surveys, interviews and action research.

The surveys consisted of one detailed questionnaire form (18 pages, 190 variables) for all employees at the faculty, and one less extensive form distributed to a sample of master students. The employee form was answered by 843 employees (485 men and 358 women), with a total response rate of 40–45 per cent among different groups of staff members (permanent employees), and a somewhat lower percentage among PhD students. The response rate among the master students was very high, 95 per cent, but the survey was smaller, had fewer questions, and a smaller sample of 213 students. The interviews included 78 staff members, lasted one to two hours, and were recorded and transcribed. The interviewees were mostly women, with a slightly smaller sample of men. The action research consisted of data collection and field notes from 23 seminars and workshops at the faculty, mostly mixed in terms of gender, and some with women only. The samples and methods are described in more detail in the appendix "Method".

In this book, we present the results of the project. The authors of the chapters have all followed and worked with the FRONT project in different ways. Some have been involved in all parts of the project, whereas others have participated in the action research or the analyses of the quantitative material. The book is largely a result of collaboration. The two editors have contributed equally to editing the book. At the same time, there has been a certain distribution of responsibility and work with the different chapters. For each chapter, the main author is mentioned first, and then co-authors are mentioned in order, based on the extent of their contribution to the chapter.

The book consists of three parts that may be read separately, but the whole is important, since the parts build upon and develop each other. In the first part, we describe the actual status of gender equality in the faculty. In the second, we present three theoretical models developed to provide a better understanding and insight into the situation, based on the project's empirical data. In the last part, we analyze the effects of three important initiatives implemented by the project. Each part is prefaced with an introduction. These are written by Holter and Snickare (part one and two) and by Snickare and Holter (part three).

The first part of the book contains six chapters based primarily on the surveys and interviews. In chapter one, "Gender-Equal Imbalance?",

we describe how students and employees at the faculty view gender balance and gender equality. The results show a gap between desired gender equality and gender balance on the one hand, and actual conditions at the faculty on the other. The imbalance is both horizontal between different disciplines, and vertical between position levels.

In the second chapter "Men, Masculinities and Professional Hierarchies", we analyze the implications of male dominance at the faculty – for both women and men. The empirical material in this chapter reveals a clear tendency, that men experience fewer problems with the work environment than women. We also see signs of informal comradeship among men, of a majority position inadequately examined, and the idea that an academic career is incompatible with family and care responsibilities – not just for women but also for men – as well as a persistent connection between men, masculinity and professional hierarchies.

In the third chapter "Sexual Harassment: Not an Isolated Problem", we discuss the extent of sexual harassment at the faculty, and show how sexual harassment is connected with other work environment and culture-related issues. Unwanted sexual attention is the most common type of sexual harassment, while other and more serious types (unwanted physical contact, coercion, stalking, physical assault) are rarer. However, most of those who have experienced more serious types of sexual harassment have also experienced unwanted sexual attention. Moreover, there is a strong connection between unwanted sexual harassment and various types of professional devaluation.

In the fourth chapter "Who Is Publishing What? How Gender Influences Publication", we explore scientific publications at the faculty from a gender perspective. Two models are presented based on two types of statistical analysis. Both show that gender is of little significance when position level, the portion of time for research, and to a weaker degree, total weekly working hours are taken into account.

In chapter five "Experiences in Academia: A New Survey Study", empirical differences and similarities between women's and men´s careers are summarized. Where previous chapters have described gender differences in specific areas, such as harassment or publishing, we now examine differences and similarities comprehensively as a whole. We present a

systematic overview of the results from the FRONT project with regard to gender and gender equality on various levels in the organization.

In the sixth and last chapter of part one, "Ethnicity, Racism and Intersectionality", we examine how life in academia is shaped and affected by ethnicity, that is by ethnic group affiliation. For example, are conditions in the work environment and academic culture, previously examined in relation to gender, also influenced by ethnic background? We also discuss the social class dimension, and how gender, ethnicity and class interact.

The second part of the book builds upon the main findings presented in the first part. In the three chapters in part two, we discuss how the findings may be interpreted, through outlining theories and interpretative frameworks. In chapter seven "The Bøygen Model: The Hypothesis of Accumulated Disadvantage", the metaphor *Bøygen* (or 'the Boyg') from Ibsen's play *Peer Gynt* is used. Although women and men seem equal on a number of parameters, a broad pattern emerges, in which women face more obstacles than men overall. Individually, the factors may seem moderate in effect, and the pattern can be difficult to see – just like Bøygen. Overall, the effect can still be great, directly, as well as in terms of reduced self-confidence and belief in one's own abilities. In this chapter, this is linked to international research on barriers to women in academia.

In chapter eight "The Janus Model: Why Women Experience Disadvantage", we use the metaphor *Janus*. Janus was a Roman god with two faces – one could appear friendly, the other stern. In the model, the friendly face represents differentiation based on gender that appears open and legitimate – women and men are "different but equal". Stratification in relation to gender is a more hidden process, but through ranking, certain positions in academia become more valuable than others, and women are often underrepresented where there is most to gain.

In chapter nine "The Triview Model: Three Views of a Problem", we interpret discursive practices, and how actors in the academic system understand and formulate questions relating to gender, gender balance, and gender equality. Here, we use three one-eyed cyclopes (from Greek mythology) as a metaphor for the pattern of different perceptions. The model describes three typical views that become clearly visible in the

FRONT material. The lack of gender balance can be seen as a non-problem, a women's problem, and a systemic problem. Different understanding of the problem can lead to different types of change strategies, as well as resistance to change.

In the book's third part, we describe and analyze the FRONT project's initiatives. The three chapters discuss the implementation of initiatives involving leaders, PhD supervisors, and top female researchers. Chapter ten "From Biology to Strategy: The Development of a Management Team", deals with the work in the faculty's management team. In the analysis, we examine the role of the management team – what the team can do specifically – in order to develop sustainable gender equality work in the organization, as well as what the team needs in order to succeed with this.

In chapter eleven "From Resistance to Change? Processes for Change Within an Organization", we take a closer look at whether the management team's work for increased gender equality had any effects within the organization. Did opposition to gender equality work increase or decrease? Possible future changes will be examined through an initiative for PhD supervisors at the faculty.

The book's twelfth chapter "From Exception to Norm: The Development of Resilience in a Network", is an analysis of a network for top female researchers. By combining gender theory and research on resilience, we analyze how resilience can be created on an individual level in an academic organization.

We hope the book will inspire further research, as well as initiatives to increase gender equality.

Øystein Gullvåg Holter and Lotta Snickare

Note

1 BALANSE received a grant from the Ministry of Education and Research in 2013. The programme lasts until 2022, and has a total budget of approximately NOK130 million. See more at the Research Council of Norway: https://www.forskningsradet.no/sok-om-finansiering/midler-fra-forskningsradet/balanse/

Part One

Results and Analyses

The first part of this book presents the Faculty of Mathematics and Natural Sciences (MN) in the University of Oslo, and the FRONT study of the faculty. We begin by introducing something that may seem like a paradox: Most employees and students want gender equality, yet the faculty is characterized by gender imbalance, particularly at the top. The following chapters explore crucial topics, such as academic prestige, men and masculinity, sexual harassment, and publishing. The results of the FRONT study – from both questionnaires and interview material – are presented and discussed topic by topic. The central question examines equal treatment. Do the results indicate an approximately equal distribution of advantages and disadvantages among men and women, or do they show a skewed selection and uneven distribution?

The chapters focus on the work environment and academic culture in terms of group collaboration, academic networks, relationship to colleagues, and international competition. The last two chapters in this part summarize the gender differences in our findings, and present these differences together with material regarding other types of social inequality, ethnicity in particular.

The most significant findings presented in in the first part of the book are further analyzed and discussed in the book's second part. The third part addresses measures for and solutions to the problems.

This first part consists of the following chapters:

Chapter one "Gender-Equal Imbalance?" introduces the faculty as a workplace, and explores the different perceptions of gender equality and gender balance among women and men.

Chapter two "Men, Masculinities and Professional Hierarchies" addresses gender and equality focusing on men, and how academic prestige is connected with masculinity.

Chapter three "Sexual Harassment: Not an Isolated Problem" describes the extent of sexual harassment, and the most common aspects of the work environment connected with this problem.

Chapter four "Who Is Publishing What? How Gender Influences Publication" addresses questions regarding scientific productivity, focusing on whether women publish less than men and if so, why.

Chapter five "Experiences in Academia: A New Survey Study" describes and summarizes one of the main findings of the study: a gender gap in terms of experiences and obstacles in one's career.

Chapter six "Ethnicity, Racism and Intersectionality" looks at diversity and social imbalance from a broader perspective, not only gender balance. The chapter focuses on ethnicity and how various dimensions such as gender, ethnicity and class are entwined.

CHAPTER 1

Gender-Equal Imbalance?

Lotta Snickare
University of Oslo

Øystein Gullvåg Holter
University of Oslo

Abstract
Most staff and students at the Faculty of Mathematics and Natural Sciences at Oslo University want gender equality, both in the workplace and in their private lives. Yet, since they also assume that academia is a meritocracy, the faculty's gender imbalance is seen as a result of women and men making different choices. Above all, the vertical gender balance, with more men at the top and in leadership positions, is explained by the fact that women prioritize children and family over an academic career. Our quantitative and qualitative data, however, refute the explanation that women deliberately opt out of an academic career in favour of active parenting. Instead, we show that more women than men have failed to fulfil their own career ambitions. On the other hand, we also note that the potential to combine work and family are different for women and men.

Keywords: equality, gender, gender imbalance, career, academia

Introduction

The Faculty of Mathematics and Natural Sciences in the University of Oslo has approximately 1200 academic employees: 400 women and 800 men. Although the faculty has almost achieved gender balance among its bachelor and master students, the middle and higher positions,

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especially top research leader positions, are numerically dominated by men. There is an increasing gender skewness from the student level, having at least 40 per cent women, to the professor level, having 22 per cent. This gender imbalance is visible in two ways: *vertically*, between different positions; and *horizontally*, between different disciplines and research groups. There are more women on the lower levels and administrative functions, and more men on the higher levels and leadership positions.

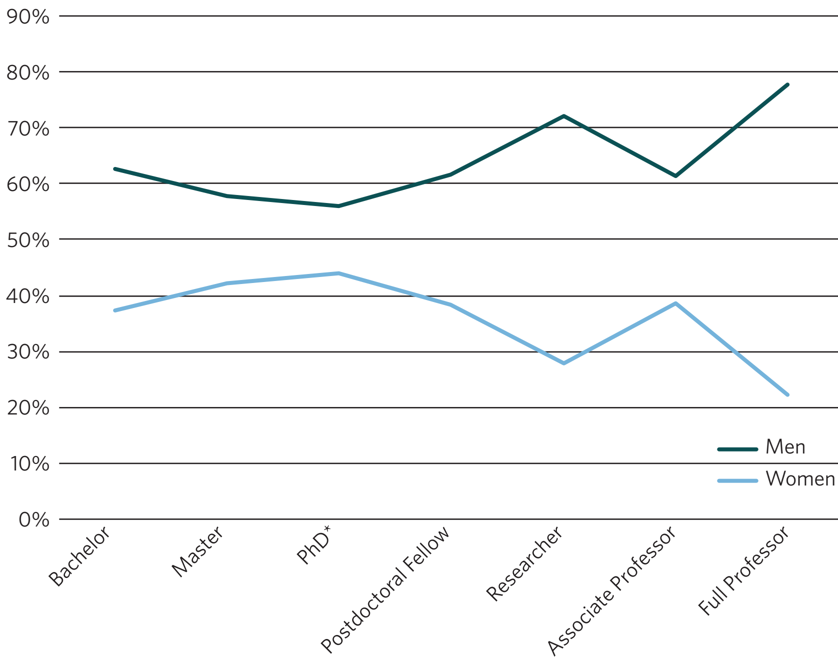

Figure 1.1. Gender Distribution at the Faculty of Mathematics and Natural Sciences in the University of Oslo 2020, according to position level. Source: Database for statistikk om høyere utdanning (DBH).

*work year, not number of PhD contracts

Although the faculty has a total of approximately 40 per cent female students, the proportion of women varies greatly between departments and degree programmes. While programmes within the biosciences and pharmacy have more than 70 per cent women, there are programmes within physics, mathematics and informatics with approximately 20 per cent women and 80 percent men (DBH, 2020). On the other hand,

the proportion of female professors is more or less the same throughout the faculty, at barely 20 per cent.

There are also major differences within one and the same department. When the FRONT project began, there were twelve research groups in the Department of Informatics (IFI): one numerically female-dominated, one with an even gender distribution, and ten male-dominated.[1]

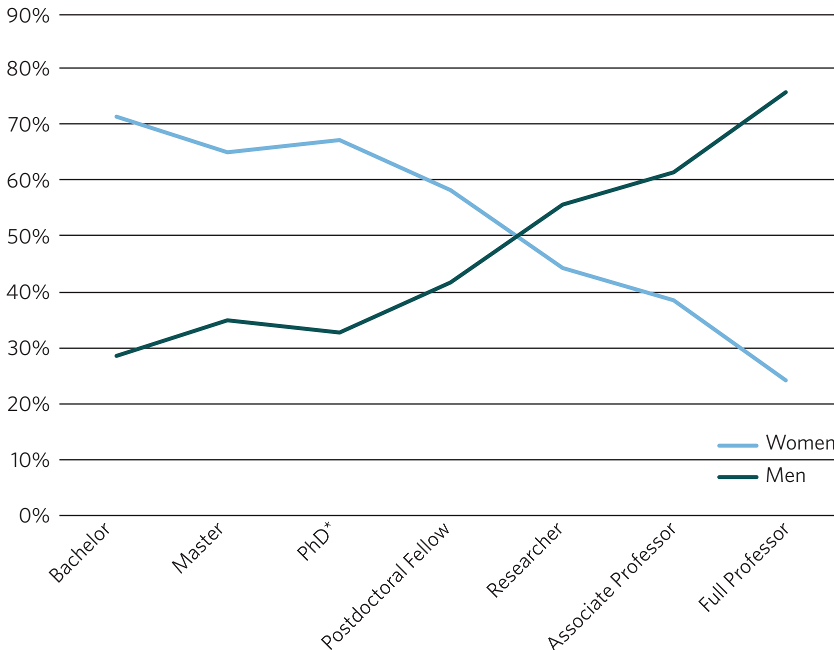

Figure 1.2. Gender Distribution at the Department of Biosciences 2020, according to position level. Source: Database for statistikk om høyere utdanning (DBH).

*work year, not number of PhD contracts

Gender balance and gender equality are often referred to as if they were the same thing, or two sides of the same issue. We consider the degree of gender balance as a measuring stick for gender equality in an organization. But gender balance and gender equality are not identical. Gender balance is first and foremost about representation, meaning there is an equal proportion of women and men within an educational programme, a field of research, or a position category. Gender equality, on the other

hand, refers to whether men and women have the same opportunities, rights and duties in all areas of life. It means, for instance, that they have the same opportunity to get an education and find work in any field of research or in any position category (NOU 2012: 15).

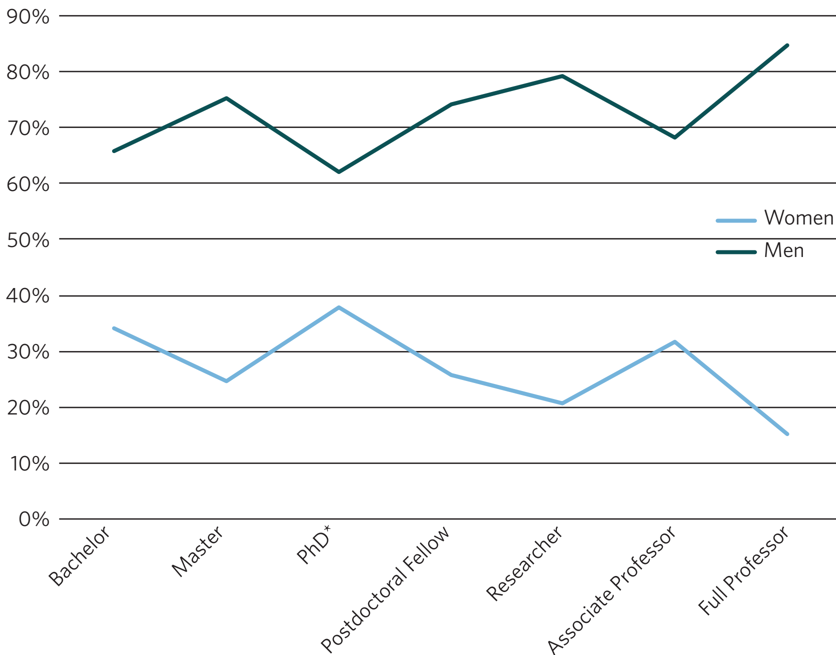

Figure 1.3. Gender Distribution at the Department of Informatics 2020, according to position level. Source: Database for statistikk om høyere utdanning (DBH).

*work year, not number of PhD contracts

In Norway and other Nordic countries, gender equality work in academia has been developing since the 1980s, often with gender balance as a primary goal.[2] (Bergman, 2013; Husu, 2015; Thun, 2019). Despite the Norwegian gender equality work, Norway is not very different from the EU average in gender balance. Both within the EU and in Norway, a slight majority of women study and graduate from universities and university colleges.[3] Norway is slightly better than the EU average in regard to the proportion of female professors. Within the EU, the proportion of female professors is 24 per cent, and in Norway it is 28 per cent (European Commission, 2020). There are major differences between disciplines, however. Both

within the EU and in Norway, the proportion of female students and researchers is considerably higher within medicine/health sciences, the humanities, and social sciences than within mathematics, the natural sciences and technology.[4]

In this chapter, we describe how students and employees at the Faculty of Mathematics and Natural Sciences (MN faculty) in the University of Oslo relate to gender equality and gender balance. We begin by describing attitudes, that is, whether or not gender equality and gender balance are desirable. We then go on to describe different explanatory models for a gender imbalance that is obvious to all. Do students and employees consider gender imbalance an effect of a gender-unequal faculty or is it rooted in something else?

We also explore how the proposed explanations correspond to research on academia from a gender perspective – both in our own study of the MN faculty and other national and international research. Our own material is both qualitative and quantitative, meaning that we have worked with two questionnaire surveys, one for students and one for employees, and conducted interviews with women and men in various roles at the faculty. The material and how we collected it are described in more detail in the book's appendix "Method".

Attitudes to Gender Equality

Many students and employees at the faculty express an explicit desire for gender equality. They want both to work in a gender-equal workplace and have a gender-equal private life. The survey of master students indicates that nearly 80 per cent, slightly more women than men, want an equal distribution of care responsibility, housework, and paid work within the family. Among the master students, only 10 per cent of the women and 15 per cent of the men completely agree that "gender equality has come far enough". Instead, many wish that gender equality was given more attention.

The interviews with employees indicate a similar pattern. "In my opinion, completely honest, gender equality is crucial to us," says Aksel,[5] a male leader at the faculty. Wenche, a female leader, is even more explicit,

saying, "We may have to make some decisions on account of something else. But you then have to weigh them against each other, and the gender equality aspect cannot always yield, because if it does we will never move on. Sometimes it is, in fact, exactly what we need to strengthen, I think." Gender equality is not something we can work for only when it suits us, according to Wenche. Sometimes, gender equality will compete with other vital issues, and then it is crucial that gender equality is not always deprioritized.

> There is gender equality, but unfortunately not gender balance. The men stay and have careers, whereas the women choose to quit.
>
> (From an interview with Tobias, a male professor)

We have heard versions of the above quote many times during the project's interviews and seminars. Despite the importance of gender equality and the fact that it is something many people want, there is a common perception that gender imbalance within the faculty is independent of gender inequality, and it rather has to do with women and men making different choices. That the faculty is not gender-balanced is visible in meeting rooms, laboratories and lecture theatres. Gender equality, or the lack thereof, is more difficult to observe with the naked eye. Since everyone knows that the natural sciences attract more men than women, gender inequality becomes unnecessary as an explanation for the gender imbalance.

Another thing that may support the perception that gender inequality is not the reason behind gender imbalance is Norway's position as one of the world's most gender-equal countries (see also World Economic Forum, 2020). That Norway is best in gender equality can be easily misunderstood to mean that Norway *is* gender-equal. "Gender equality is part of Norway's identity. Norwegian society is built on equality between women and men," according to the first page of the government's white paper on gender equality "Likestilling i praksis – Like muligheter for kvinner og menn" ("Gender Equality in Practice: Equal Opportunities for Women and Men", Meld. St. 7 (2015–2016)). A university in a society built on gender equality, where gender equality is part of its identity, *must* be gender-equal.

Among participants in one of the project's long-term initiatives,[6] the image of academia changed during the initiative. In the interviews conducted prior to the initiative's start, a picture of academia as a strong meritocracy emerges. In later discussions, in the concluding phase of the initiative, the view of academia as a meritocracy had changed. What was first interpreted as exceptions, individual occurrences or individual challenges, were now considered expressions of gender-unequal structures. Hege, for instance, a female associate professor, says the following in the last interview: "It is easy to think that I am the only one dealing with this, but then I hear that everyone else deals with the same issues."

She also describes how her altered view of the organization affects her behaviour: "I look for things that are problematic for women. I am more attentive to how women are treated and whether women are contacted in connection to appointment processes etc." Tirild, also a female associate professor, reflects upon how she, in the same way as the rest of the group of participants, was initially negative to the FRONT project being based on gender research, but that she subsequently changed her opinion. "Gender theory and gender research were not things that could help me in my situation there and then. The theory is interesting at a later stage … I noticed that my boss agreed with me when we spoke before the meeting, but not when we were in the meeting with the others – then he agreed with the men. He criticized me in front of the others who were there. Gender theory became an eye-opener for this."

The survey among employees at the faculty shows that female employees in particular perceive the faculty as gender unequal. Women's and men's experiences with culture and academic community differ in a number of areas. One example is the question of whether the faculty is sexist or not. Of the men 47 per cent, but only 28 per cent of the women, completely agreed that the culture in their workplace is non-sexist. The survey reveals that the image of the faculty as a meritocracy from the interviews is highly abstract and a matter of principle. The more we ask about practical experiences, the more we see other realities emerge.[7]

In surveys and interviews, both students and employees express their support for gender equality. The interviews also show that the

interviewees – both women and men – often consider academia to be gender-equal. The survey among employees provides a different picture, however. As mentioned, only around half of the men and around one-fourth of the women completely agreed that the culture in their workplace was non-sexist. It is also interesting to see that the view of academia and the faculty as meritocratic and gender-equal changed among the interviewees who participated in some of the project's long-term initiatives. Rather than interpreting incidents as individual ups and downs, they were considered expressions of the faculty not being gender-equal.

Attitudes to Gender Balance and Explanations for Gender Imbalance

> Because I think research also needs women, just to see things in a slightly different way. So I think women in research are important.
>
> (From an interview with Heidi, a female postdoctoral fellow)

Although students and employees agree that they want gender equality, there is less agreement regarding the importance of gender balance. Many would like a workplace or degree programme with an approximately equal proportion of women and men. But since they consider academia a gender-equal meritocracy, their explanation for the imbalance is not gender discrimination but rather individual choices, something that neither can nor should be controlled. Instead, some think the work for increased gender balance can have undesirable effects. Kari, a female postdoctoral fellow, says, for instance, "I think it is better if we get more women, but we should also ensure that we don't recruit people just because they have a specific gender."

Those arguing for gender balance often emphasize that women can bring out something new and different in the traditional "male disciplines". According to them, women and men are different, or they have different experiences, and can therefore contribute different perspectives in the workplace and in research. Some also emphasize representation and democracy, but academic quality is the main issue. In the introductory quote to this section, the female postdoctoral fellow says

that more gender balance leads to better research. Similarly, a male professor and leader at the faculty asserts that "better balance provides a better work environment, and we have to deliver to society – therefore, there should be more women involved in shaping the discipline." Both of them are positive to more women within the MN faculty's male-dominated disciplines. But the purpose of the balance is not primarily for the individual or organization. It is rather for an overarching and relatively abstract societal level. It can be difficult to feel personal involvement in this issue, and also see how initiatives on the organizational or individual level can result in this type of structural change. This feeling can be strengthened if one believes that the problems are caused primarily by "other" structures or social conditions than the university itself, such as family and socialization, and perhaps also biological gender differences.

Several interviewees attempt to explain how such a gender-equal country as Norway still has a gender-imbalanced labour market. For instance, a male professor, Petter, says, "Norway, in which the opportunities are in principle equal, has kept a gender-segregated labour market, indicating that we have personal gender preferences, rather than systematic obstacles preventing people from thriving."

Because Norway is one of the most gender-equal countries in the world, Petter is of the opinion that it is entirely gender-equal, at least "in principle". Therefore, the existing gender imbalance is not likely to result from gender discrimination, but rather from women and men making different choices. According to Petter, this is dependent on "gender-driven motivations." Several of the interviewees express similar ideas. As an explanation for why so few women study and work in informatics, Leif, a male professor, says, "I think there is this boys' club, where they […] keep at it like they always have." Ingrid, a female postdoctoral fellow, agrees. She says, "I don't think women are as interested in hard sciences, like programming and such."

However, most interviewees think the most common reason for the gender imbalance is different requirements for women and men – and also that women and men make different choices – when it comes to starting a family. Hedda, a female associate professor, responds to the

question of why there are fewer women in higher positions in her department by describing how one of her female PhD students, with "excellent publications", chose to stay in Oslo, despite her advice to apply for a mobility grant, because she had a boyfriend and a new apartment there. Such a choice means that an academic career becomes much more "difficult". According to Ingvild, a female professor, most women leaving academia do so between the first and the second postdoctoral period. They are then at an age when they wish to start a family, and are therefore more in need of a permanent position. They need to know that the chances are good that they will be able to stay within academia, in order to choose such an uncertain future. "They need a different type of feedback in order to apply a second time," she says. They need to hear, "You're good, we'll make it work, I will help you."

Interviews with leaders at the faculty conducted early in the project period, and before the initiatives were implemented, show a view of the academic career path that is largely meritocratic (cf. Thun, 2019). That an organizational culture with long work days and temporary positions have somewhat different effects on women and men is considered undesirable but unavoidable. Research leaders describe the ideal career path as one or two postdoc periods, at least one at a foreign university, followed by a temporary research position financed by their own project funds. Only after ten years of temporary positions and working abroad should one apply for a position as associate professor.

> I think if everyone thinks they're going in this direction, we will have a major challenge. We are different by nature, and I suppose I have always been worried that we push too many in this direction.
>
> (From an interview with Leif, a male professor and leader)

The fact that these trial periods, including the need for mobility and the long period of temporary work, cause many to choose to leave academia is not a problem, according to Leif. On the contrary, in the above quote he says it would be a "major challenge" if all PhD students and postdoctoral fellows wanted an academic career. Most of them have to leave academia, he maintains.

The image of the academic career's different stages is established within the organization:

> It is almost like career guidance, what is it that you need, I had precisely that conversation yesterday with one of our best PhD students. And then I have to ask him directly, "Would you like to do a postdoc?". Yes, he would. "Would you like to do a postdoc and then quit, or would you like to do a postdoc and then perhaps see where it ends?" Yes, it was the latter. But then you have to go out, you have to travel abroad [...] you have to go away and publish something without me.
>
> (From an interview with Sigrid, a female associate professor)

When the female associate professor advises her PhD student on how to pursue an academic career, she carefully emphasizes that he must apply for a postdoctoral fellowship abroad, and prove his independence as a researcher by publishing articles with other researchers than herself. Anne, a female postdoctoral fellow, expresses the same idea. "I know that I must have a period abroad, but after that, I might perhaps come back to Oslo and apply for my own project."

Both leaders and young researchers agree that the type of career described above is difficult to accomplish in combination with starting a family. Stein, a male professor and leader, describes how he experienced early in his career that all the younger female researchers and some of the men in his group "got a family life" and were forced to divide their time between research and family. He continues, "And then there were these guys, like loners, right – yes, nice people – who remained for a period. [...] Yes, the men who settled down, and the women, were lagging behind the "loner group" consisting of only guys since they didn't do anything else anyway. And they published more often and more [papers], and their careers accelerated." Stein describes it as equally difficult for women and men to combine work as a researcher with family life. The gender difference is that all the women in his group, but only "some of the men", chose to start a family. The men who did not start a family instead concentrated entirely on research, and got a headstart in their career before they would start a family at a later stage.

There is also a widespread image within the organization that many working hours and one-sided concentration on work is good for an academic career. An academic career makes other demands than a normal working life. "It is impossible to write a good PhD dissertation and work 40 hours a week. You have to work more. Sometimes you don't need to work much more than that, but in certain periods you have to work almost 24 hours a day," says Jon, a male professor. Marthe, a female associate professor, similarly describes how a postdoctoral fellow, who does not want to take night shifts at the lab, is not suited for a researcher career. "I had a postdoctoral fellow who did not want to take night shifts at the lab. She said it made her too exhausted. That she needed to sleep. That is not possible. Everyone must help out. Sometimes you have to work 24 hours. You can't say no to that."

A female postdoctoral fellow, Kari, describes how a career path in academia, with a long period of temporary positions, affects women and men differently. "I believe we women have a bit, are slightly more worried about temporary positions since, having passed 30 and starting a family while having a temporary position is a little [...] I think perhaps it is a little more difficult for girls." According to Kari, women do not have the same opportunity as men to postpone starting a family. It has to happen during the same period in your career that you qualify for a permanent position.

Despite the fact that both leaders and researchers agree that it is difficult to have a career in academia in combination with starting a family, none of the interviewees suggest that career conditions should change. The faculty considers itself part of an international community in which it is not possible for an individual organization to alter anything as fundamental as qualification requirements. The researchers educated in the faculty must be able to compete with international researchers. One of the leaders explains, "If we are to succeed as a university, these people also have to be attractive elsewhere."

In the interviews with female associate professors and full professors, that is those who have made a career, family and children are also mentioned often, but now as something they will not allow to be a hindrance to their careers. Two associate professors, Sigrid and Agnes, say:

> I have the ability to work quite a lot, so I can sit […] so all these huge applications, I sat for like … or I was awake for perhaps … these 36-hour sessions. And then there were some days where I would sit here during the day, and then go home, the children, "Duh duh duh," put them to bed and then back here and then, "Thrrr." Then I was here during the night, then came home to make [breakfast and lunch packs], and sent them off.
>
> (Sigrid, female associate professor)

> And then I'll sit down and work again when my son has gone to bed. […] And I had a … yes, I worked most of Easter, I worked most of the Christmas holiday, I … yes, I worked most of these red-letter days, right […] I did not get full work days then, since kindergarten was closed, but I would sit and work while he had his nap during the day and after … before he got up and after he had gone to bed and so on.
>
> (Agnes, female associate professor)

Another strategy is to prioritize an academic career and not have children. Kathrine, also a female associate professor, says, "I still don't have children. It hasn't been my priority – because – yes, I only wanted to become a good researcher."

Students and employees, women and men – they all see gender imbalance in the faculty. But at the same time, most of them presume that academia is a functioning meritocracy, and that the imbalance results from men and women making different choices. The interviewees agree that family and children are an obstacle when building an academic career, and gender imbalance is most often considered an effect of women choosing to be more active as parents than men. With such a perspective, the responsibility for gender imbalance is placed mainly outside academia, and consequently, the motivation for changing the system within academia is limited.

Can Gender Imbalance Be Due to Women and Men Having Different Ambitions?

Is it the case that women and men at the faculty choose differently? Might gender imbalance be explained by what many interviewees think – that

women choose to deprioritize their careers in favour of family? The survey of employees provides a different picture. For instance, when we look at the extent to which women and men feel they have achieved their career ambitions in their current position, 59 per cent of all employees respond that they have fulfilled their ambitions, whereas 41 per cent say they have not. The proportion of negative responses is higher among women (47 per cent) than among men (38 per cent). This tendency pertains to most position levels. In other words, we do not see any signs of a lower ambition level among women, perhaps rather the opposite.[8]

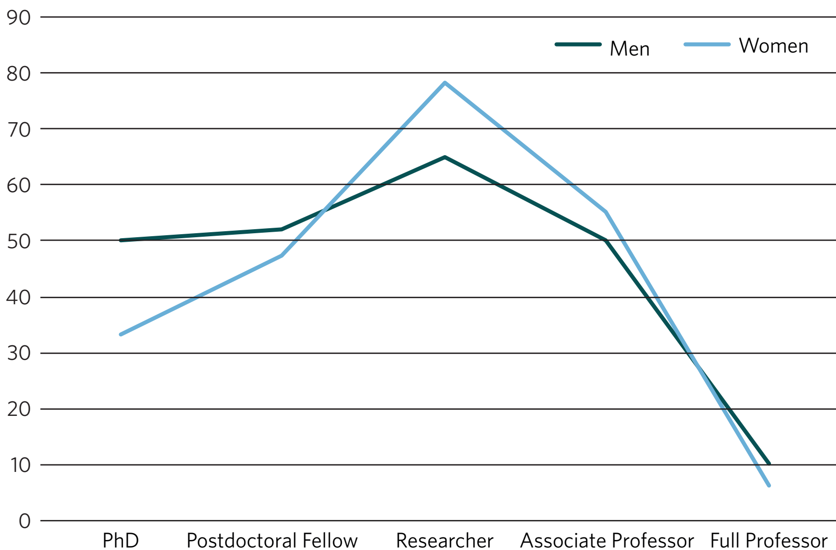

Figure 1.4. The Proportion of Employees Not Satisfied With Their Current Position in Relation to Their Ambitions, by Position Level and Gender. The figures are given as percentages. Source: FRONT Employee survey (N = 623 academic employees).

The high level of dissatisfaction at the researcher level is expected, since this is often perceived as a "dead end" (Figure 1.4). However, a notable result is the high level of dissatisfaction at all levels except the highest one, indication a clear ambition to reach higher levels within academia. At the full professor level, the proportion of both men and women who are dissatisfied goes down, which makes sense. The question here is "ambitions fulfilled in relation to the current position level." There is no higher position level to which full professors can advance. If women's ambition levels were lower

than men's, they ought to be more satisfied before the top of the career ladder. And perhaps they ought to be particularly "happy to get into" top positions. However, the results are not consistent with this hypothesis.

We also see some of the same patterns based on age (Figure 1.5). Being a senior seems to work best for men.

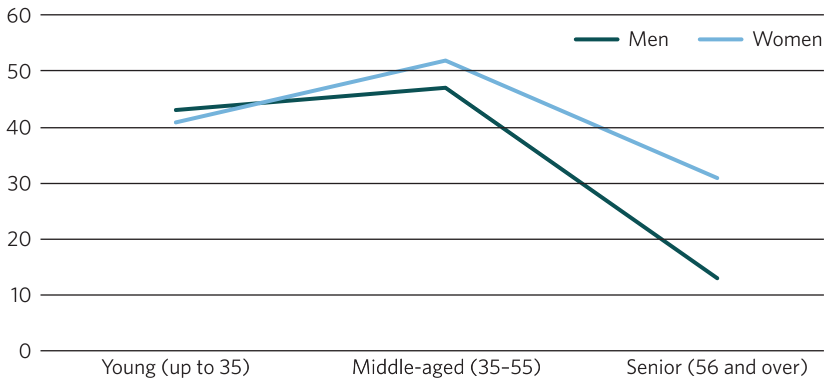

Figure 1.5. The Proportion of Employees Not Satisfied with Their Current Position in Relation to Their Ambitions, by Age and Gender. The figures are given as percentages. Source: FRONT Employee survey (N = 409 academic employees).

Women do not have lower ambitions than men. The proportion of those not experiencing that their ambitions are met in their current position is higher among women than men of advanced age, particularly among those in the 56+ age group. Here, a gender gap appears, more fully described in Chapter 5.

The female associate professors' descriptions of how they manage to amass many working hours, despite obligations to children and family, in the previous section show high ambition and motivation. The interviewed associate professors also describe how they work to build their research platforms:

> But I have used so much energy to achieve this. And this is very good for my future, I hope, and I therefore spend a lot of time on it. I spend 60 per cent of my time on strategy, development and ideas.
>
> (Kathrine, female associate professor)

In the above quote, Kathrine says that she spends 60 per cent of her time on strategic work, which she believes is crucial to her career. Nora says

approximately the same. She wishes to be identified with her field of research, not only by other researchers, but also by the media. If there is going to be a conference within her field or someone from the media has a question, she should be the obvious person to turn to. “I have to see if I, perhaps I have to attend more conferences. They mentioned that, yes, it has to be, you have to “be” your subject area in Norway. If the media are talking about it they have to come to you.”

The interviews with researchers on lower levels, postdoctoral fellows and temporary research positions, describe a slightly different reality. Marit says she perceives “an expression of goodwill” in the research group where she works, which she interprets as a signal that they want her there also after her postdoctoral fellowship. She continues, “So I thought as a kind of idea for myself that it is OK, I’ll do some teaching, it is a way of making myself useful in this group.” Marit’s story is not about becoming a top researcher, the one person to whom both other researchers and the media turn. It is about having the opportunity to continue as a researcher after the temporary position she has now has ended. With that goal in mind, she takes on various tasks to prove her competence, and how much her research group needs her.

Neither surveys nor interviews show that women and men at the faculty make different choices, where women consciously choose a lower career level in order to have time for children and family. For instance, the survey shows that women are less satisfied with their careers than men are. Many wish they were further up on the career ladder than they are. Analysis of the interview material reveals female researchers with high ambition levels, associate professors planning for a career as top researchers, and postdoctoral fellows interpreting and acting on signals in the organization to be able to continue as researchers.

Whose Job Comes First?

Even if a woman and a man make the same choices regarding career and family, they nevertheless encounter different challenges. Uneven support at home is part of the picture. The survey of employees indicates that many academic households gave equal priority to partners’ careers in

the past year, but we also see signs that the man's career still has higher priority.

Women are married to other academics more often than men are. Among those who had a partner, 40 per cent of the women and 28 per cent of the men reported that their partner was an academic. When we asked about career breaks due to relocation, either in connection with their own job or their partner's, women and men gave slightly different pictures of the situation. Taking a career break in relation to one's partner's job was unusual for both men and women, although the women had a somewhat longer break than the men, on average. The differences were clearer when asked if the partner had taken a career break on account of their job. The men's partners had taken a break of just over four months for the men's jobs, whereas the women's partners had taken a leave of less than two months.

The interview material indicates the same tendency. Male researchers, to a greater extent than female, have a partner who supports their career. Bente, a female associate professor, describes how she cannot get advice on schooling and similar things from her male colleagues before a stay abroad. "When I asked my colleagues how they arranged for their children's schooling when they were on sabbatical, no one knew. It was their wives who took care of all the practicalities in connection to the relocation." Many women, but none of the men, also talk about difficulties getting their partner to accompany them abroad. Maren, a female associate professor, says, "But I do not really envisage a year or six months out, and that has to do with my family situation – that I don't have a very flexible man in that sense." Heidi, a female postdoctoral fellow, describes the same thing. "I applied for postdoctoral positions in France. I wanted to work at a lab there. But now I have a Norwegian partner who doesn't want to live abroad. So now I'm staying here."

When asked about parental leave, 39 per cent of employees said they had taken parental leave during their time as PhD students or later in their career (37 per cent of the men, 42 per cent of the women). The women who had taken leave have, on average, spent 11 months on it, whereas the men spent on average four months. Of the women who had been on leave 30 per cent experienced difficulties when they returned to work, compared

to 5 per cent of the leave-taking men. Those experiencing difficulties mentioned problems combining work and family life, difficulties getting back into the discipline, a lack of things to do at work, and/or a change of tasks, lack of inclusion, and academic devaluation.

Respondents living with a spouse or partner were also asked whether they were equally committed to both careers. An overwhelming majority answered yes to this general question. However, the question was followed by a more precise and practical question concerning which partner's career had actually been prioritized in the past year. As shown in Figure 1.6, 29 per cent of the men and 23 per cent of the women responded that their own careers had first priority. Approximately half of all respondents reported that both partners had roughly the same priority in the past year, whereas 8 per cent of the men and 18 per cent of the women said that their partner's career had priority.

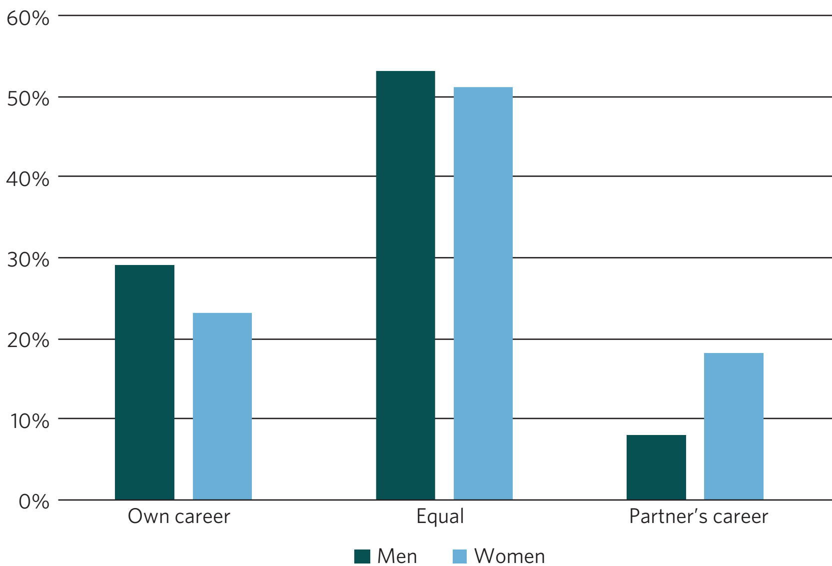

Figure 1.6. Which Career Had the Highest Priority in the Household Last Year, by Gender (percentage, married and cohabiting). Source: FRONT Employee survey (N = 609).

Even though both men and women frequently say that their career was prioritized or that the prioritization was equal, there were nevertheless considerably more women whose partner's career was prioritized.

We also see that the proportion who talk about unequal prioritization, that either the man or the woman's career came first, is greatest at the postdoctoral level. This may reflect a particularly challenging phase of career development in which the academic career comes first, no matter whether it is men or women.

Long Work Days and Priorities in the Household

Based on self-reported figures in the survey, it appears that many employees work long hours.

Among the academic employees, the average work week is 46.5 hours (men 46.8 hours, women 46.1 hours). Administrative employees report that they work an average of 39.8 hours per week. Working hours were considerably longer among professors, with an average of 50 hours, than among the lower academic position levels, with an average of 45–46 hours. However, there are major variations in working hours during different periods. In the interviews, several researchers describe how they work 70 hours or more a week, for example, in periods when they work with grant applications, whereas the working week is more normal in other periods. Geir, a male professor, says, "I sat in my basement for three months and wrote the application. It would never have happened unless my wife supported me. Our children are grown now, which makes it easier." Hedda, a female associate professor, describes almost the same thing. "I wrote the application in a month. But that is not something I would recommend. I worked almost 24 hours a day."

The academic employees spend, on average, 25 per cent of their working hours teaching, 55 per cent on research, and 11 per cent on administration (the rest is other/unanswered). The proportion of research time was highest among the postdoctoral fellows (80 per cent) and employees in the position category of researcher (73 per cent). Among associate professors, the average was down to 30 per cent on research, whereas professors reported that they spent 37 per cent of their time on research, 35 per cent on teaching, 17 per cent on administration, and the rest on other/unanswered.[9] We also see clear gender differences in the amount of time spent on research in the two latter position levels. Whereas male associate

professors spend 35 per cent of their working hours on research, the figure is only 24 per cent for female associate professors. There is also a considerable difference among professors. Male professors report spending 39 per cent of their working hours on research, whereas the figure is 33 per cent for female professors.

If we look at men saying that their partner's career has been given priority in the past year, an otherwise relatively "typical female" position, an interesting pattern emerges. The question of career divides households into three groups: one where the man's career has first priority; one in which both parts have approximately equal priority; and one where the woman's career has first priority. Men in households reporting that the woman's career has priority do not, as often, report problems related to a culture with long working hours. There is up to a three times greater inclination to talk about this among men whose own career comes first. In cases where the female partner's career has priority, 10 per cent have problems with the work hour culture, 16 per cent have problems in households where the partners' careers have equal priority, and 26 per cent report problems related to long working days in families where the man's career has priority.

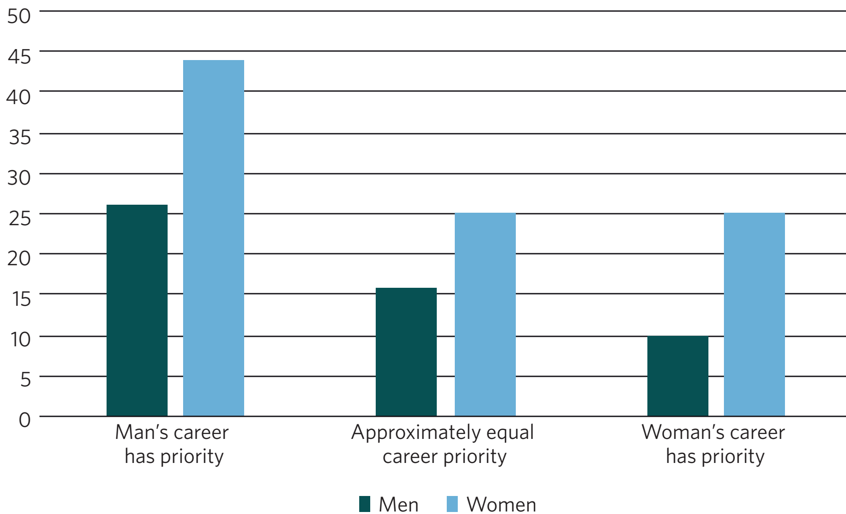

Figure 1.7. Proportion of Women and Men Stating They Have Problems With a Long Work Hour Culture by Career Priorities in the Household. The figures are given as percentages. Source: FRONT Employee survey (N = 608 married/cohabitants).

The figures are similar among the women. Among women whose partner's career had first priority 44 per cent experienced problems with a long work hour culture, 25 per cent where there was equal priority, and 25 per cent when their own career had priority. Again, a gender gap appears, in male job priority households especially. Based on reports from both genders, it thus appears that women have jobs with fewer demands for long working hours. But there is little in the material supporting this interpretation. A more relevant explanation may be that women plan their work days in a way that does not disturb their family life. We have previously described how the female researchers leave work to pick up their children from kindergarten, prepare dinner and help with homework. However, when family obligations are completed and the children have been put to bed, they either go back to work, or they sit down at their computer at home to work another three or four hours. If the men, to a more considerable degree, remain in the workplace until they are done with their work for the day, this will, of course, have a bigger impact on their family life.

These findings strengthen the image that the male career usually has first priority in marriage and partnerships. The man's job seems to be the biggest "problem generator" within the long work hour culture. A possible reason may be traditions and gender roles that remain from the time when the man was considered "the family's main breadwinner," and that demands for long working hours on the man's part are connected to this.

The surveys, supported by the interviews, do not show, as mentioned, that women opt out of careers to focus on the family. But we can see that women and men work under different conditions in the faculty. The women are married to other academics more often than the men are. The men's partners took longer career breaks in connection to the man's job than the women's partners. The women who had taken parental leave were away from work for more extended periods than the men (an average of eleven and four months, respectively), and experienced more difficulties when returning to the workplace. The men are more often in relationships in which their own career has priority, and are rarely in relationships in which their partner's career has priority. One in three male professors report being in a relationship in which their career is

prioritized, whereas less than one in ten female professors say the same. When the man's career comes first, both women and men experience problems related to the culture of long work hours.

Discussion

Both women and men, students and employees, express the desire for a gender-equal and gender-balanced faculty. But when gender equality is considered an effect of a meritocratic organization, meaning something that already permeates the faculty's processes and culture, gender imbalance becomes the result of individual choices. In many of the interviews, both women and men describe academia as a functioning meritocracy.[10] They do not consider being a meritocracy a vision that academic organizations such as the MN faculty strive to achieve. They presume that the organization's systems and processes actually work in a meritocratic way. They express the desire for gender equality as a self-evident part of a meritocratic ideal, and thus perceive academia, and also the MN faculty, as gender-equal.[11]

That the interviewees consider both academia in general and their own faculty as a functioning meritocracy is in line with studies by, for example Nielsen (2016), and Brandser and Sümer (2017). Nielsen explores a Danish university, whereas Brandser and Sümer gather their empirical data from Norway. Henningsen and Liestøl (2013) take things a step further, claiming that there is not only a notion of academia as a meritocracy but also that measures working for gender balance may result in women being perceived as prioritized, and having advantages within the academic system. According to them, this notion enables the actual structural and cultural barriers to women to become invisible. The idea that academia "is" gender-equal is probably stronger in Norway and other Nordic countries than in the U.S., for example. Norway may be interpreted as a gender-equal country, and gender equality may even be emphasized as a national value, part of the "Norwegian identity", as mentioned above. From here, it is easy to conclude that "gender equality has already been achieved" and that no further measures are needed. One thus overlooks the fact that being in the lead in the world is not the same

as having reached one's goal, and that there is considerable variation within Norway and other countries.

Brandser and Sümer (2017, p. 31) describe how both temporary and permanent employees at the University of Bergen agreed that the recruitment process was fair – although they were aware that the process "could be manipulated in various ways", either by "creating positions", "tailor-made job announcements" or "inviting specific applicants". Several studies of the recruitment process have been carried out since Elisabeth Fürst, in her pioneering 1988 study of the University of Oslo, demonstrated how gender-stereotypical ideas about women and men influenced the assessment of competence (see e.g., Nielsen, 2016; van den Brink & Benschop, 2011). The major opposition to Fürst's result (Fürst, 2012) may be interpreted as a defence of the idea of academia, and thus science in general, as objective and neutral (Hovdhaugen et al., 2004). The women participating in one of the FRONT project's initiatives (see Chapter 12) changed their view of the faculty as a meritocracy during the initiative. What were described as single occurrences and exceptions in interviews before the initiative began, such as gender-stereotypical evaluations of competence, were interpreted as a consequence of gender-unequal structures towards the end of the initiative. Our results indicate that the interviewees, by sharing their experiences of "single occurrences", realized that they were, in fact, not isolated incidents, but rather parts of a pattern and a structure. When the idea of science being objective is strong, combined with the notion that academia is a purely meritocratic organization, more than an individual experience is required for the image of a meritocracy to crumble.

As stated in the introduction, there is also a horizontal gender imbalance in the MN faculty (which we will look at in more detail in Chapter 2). This imbalance, that women and men choose different disciplines and approaches to the disciplines, is described by most interviewees as personal choices. Women and men are simply interested in different things. Male students, therefore, choose male-dominated disciplines, whereas female students choose disciplines and degree programmes with more women – despite the fact that both female and male students prefer a gender-balanced student environment (Thun & Holter, 2013). In accordance with this widespread understanding, it is not an

indication of gender discrimination that specific disciplines are considered "boy" disciplines and attract more boys, while others are considered "girl" disciplines and attract more girls. Instead, it is considered a sign of women and men having different interests. In a study of the history discipline, Tømte and Egeland (2016, p. 32) demonstrate how certain disciplines, approaches and methods are associated with "masculinity" historically and culturally. This, in turn, is interpreted as "an effect of women and men being different, and therefore interested in and suited for different things." According to Vabø et al. (2012), there are notions about what men and women should do and are suited for in academia, as in all other organizations. Thun and Holter (2013) demonstrate how different disciplines at the University of Oslo are defined as either "soft" or "hard", and how the soft disciplines are associated with women, while the hard are associated with men.

Our study confirms these results. For instance, several of the interviewees describe interdisciplinary studies being defined as less prestigious than studies closer to the core of the discipline, and that the less prestigious parts of a discipline are also defined as feminine.[12]

The interviewees describe horizontal and vertical gender balance within education and research as important, particularly on the societal level (see also Brandser & Sümer, 2017). But if academia's meritocratic principles must be adjusted in order to achieve a vertical balance, for example through quota-like measures, women as well as men are negative. The image of an ideal academic (see Lund, 2012), who can pursue the ideal career without obstacles, such as parental leave or picking up children from kindergarten, is highly prominent in the interviews. The challenge of combining childcare and a career as a researcher, for instance, affects everyone who wants to be an active parent, meaning both men and women (Orning, 2016). The fact that it is more difficult for women to postpone having children than men, until the ten years of temporary positions and high publication levels have resulted in a permanent position, is therefore not considered a gendered structure.[13] Instead, the absence of women on higher position levels is seen as a lack of ambition, and above all, that women choose to give priority to their family (van den Brink, 2011).

However, when we examine the organization more closely to see whether vertical gender imbalance may be explained by men and women making different choices, and whether women consciously opt out of a career to be a more active parent, this view is contradicted by both surveys and interviews. Instead, the surveys as well as the interviews show that women and men work under different conditions at the faculty. The women are rarely in relationships in which their own career has priority. When the man's career comes first, both women and men experience problems with a long work hour culture. The fact that the man still has the role of primary breadwinner, and thus must fulfill the demand for long working hours, is an underlying reason (Halrynjo, 2017; Halrynjo & Lyng, 2017; Holter et al., 2009; Holter & Aarseth, 1993; Snickare & Holter, 2018). We also see a significant difference in the distribution of working hours spent on different tasks, with female associate professors and full professors spending a greater part of their time on teaching and administration, and less time on research than their male colleagues. This will negatively affect their career opportunities, as long as academic competence is measured mainly in terms of scientific publications (e.g., Addis, 2010). The imbalanced work distribution between women and men is a pattern also found in international studies (e.g., Aldercotte et al., 2017). The Swedish Research Council describes work displacement as a primary cause of gender imbalance in higher academic positions. Women are more active than men in research areas characterized by a lot of teaching, which also provides fewer opportunities for them to obtain scientific merits. Additionally, women within all disciplines respond that they have less time for research than their male colleagues (Vetenskapsrådet, 2021).

The "ideal career" in academia is characterized by competition, with high demands in terms of constantly applying for prestigious projects and funding, high publication frequency, international mobility, and networking. Our results resemble findings from studies of elite professions in Norway (Aarseth, 2014; Halrynjo, 2017; Halrynjo et al., 2019). In occupations that compete for customers, clients and projects, being able to invest time and energy at work becomes a substantial competitive advantage. To avoid losing momentum, having flexibility at home (in terms

of having a supportive partner) becomes essential in order to be able to work when needed. Two such careers within the same family can be demanding. A study of Norwegian elite professions shows that even the most gender-equality oriented couples can experience sliding back into a traditional gendered pattern.[14] When mothers, to a much larger extent than fathers, take extended parental leave they risk losing momentum, while at the same time showing clearly that they are replaceable. Others can and must take over their tasks, customers, and projects. On the other hand, fathers in professional careers often find ways that allow them to adapt and postpone their leave without losing customers and investment opportunities. While the fathers can continue to be irreplaceable at work, the mothers become irreplaceable at home (Halrynjo, 2017; Halrynjo & Lyng, 2017).

The surveys show that women are more dissatisfied with their careers than men are. They want to get further. This is strengthened by the interviews. On the individual level, women try to adapt to the ideal career and the ideal worker. Some choose not to have children, whereas others compensate for lost working hours spent picking up children from kindergarten or helping out with homework, by working at night or on holidays.

That leaders within an organization have a different picture of what women on lower levels in the organization want in terms of work and career was shown almost thirty years ago in the Swedish official report *Mäns föreställningar om kvinnor och chefskap* (*Men's Ideas About Women and Leadership*, SOU 1994: 3). The male leaders who were interviewed all had the idea that women on the levels below themselves in the organization did not want to move up the career ladder, since long working hours or many required business trips could not be easily combined with family and children. The study also included interviews with women in the same organizations – who presented a completely different picture. They wanted to move up, and had various strategies for handling new work requirements. Van den Brink (2011) demonstrates how the same reasoning permeates academia. The absence of women in leading positions is explained by a lack of ambition, while the women themselves report having equally high career ambitions as men.

Our study is in line with these results. There is a notion within the entire organization, not just among leaders, that it is difficult to have an academic career and be an active parent at the same time. Here, the idea of the ideal academic worker emerges as a "phantom" – that is, someone working 24 hours a day, either writing grant applications and articles, or handling experimental studies in the laboratory (Lindgren, 1996, 1999; Lund, 2012). They always prioritize work and have no other interests or obligations. The survey confirms long working hours, especially on higher levels, with an average of 46.5 hours a week for all the academic employees.[15] The interviews confirm a high but varied workload with flexibility, making balancing work with family obligations somewhat easier. The notion of the constantly working ideal academic employee is not always reality for employees at the MN faculty, yet it still exists as an ideal model, one that seems difficult to live up to, and probably makes an academic career seem unattractive to many.

Conclusion

Nearly all – women and men, students and employees – support gender equality. But since they presume at the same time that academia is a functioning meritocracy, the faculty's visible gender imbalance is regarded as a result of women's and men's different choices. Above all, the vertical gender imbalance, with more men on higher levels and in leading positions, is explained in terms of women choosing children and family over an academic career. That a working culture of long days and temporary positions affects women and men differently is described as undesirable, but nevertheless unavoidable. Career requirements are considered to be objective and inevitable, since the faculty must be able to compete internationally.

The results of our studies do not support the explanation that women consciously opt out of an academic career to be active and present as parents. Instead, they show an academic organization that fails to meet the ambitions of women compared to men, so that more women than men have unfulfilled career goals. Moreover, we see that conditions for combining work and family are different for women and men. More often

than men, women have a partner who is also an academic. The men are, more often than women, in relationships where their own career has priority, and are less often in relationships where their partner's career has first priority. For example, one in three male professors say they are in relationships in which their own career has priority, whereas less than one in ten female professors say the same. The men's partners also have longer career breaks connected to the man's job than do the women's partners. When the man's career comes first, both women and men experience problems with a culture of long working hours, but the same does not apply if the woman's career comes first. When women describe how they combine work and family obligations by working evenings and holidays, the men report how they get a lot of support from their partner in busy periods.

The idea of the ideal academic worker (see Lund, 2012), who is able to work 24 hours a day writing applications and articles, or handling experiments in the laboratory, who always prioritizes work and has no outside interests or obligations, is powerful within the organization. That this "phantom researcher" ideal affects women and men differently is not discussed.

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Notes

1. Some of the categories in Figures 1.1–1.3 should be interpreted with extra caution. Especially, the researcher category is highly diverse, often based on temporary external funding and not necessarily a step up on the career ladder. Also, the female proportion of bachelor students is probably higher than shown in Figure 1.1 due to irregularities in the statistics. The figures are snapshots of ongoing changes. For example, the apparent fall in the female proportion from bachelor to master level in informatics (Figure 1.3) is due to a strongly increasing proportion of women on the bachelor level, which will probably also be reflected on the master level in a couple of years.
2. "Forskningsmeldingen 2009" ("The 2009 Research Report") says, for example: "The government considers as one of its most important challenges to strive for an equal number of women and men on all job levels and in all disciplines" (translated from Norwegian).
3. In the EU, 54 per cent of all bachelor and master students are women. In Norway, the proportion of women is 59 per cent (Diku, 2019; European Commission, 2019).
4. In the EU, only 32 per cent of students, 37 per cent of PhD students, and 15 per cent of professors are women in mathematics and the natural sciences. In Norway, the figures are somewhat higher: 34 per cent, 40 per cent and 16 per cent, respectively (Diku, 2019; European Commission, 2019).
5. All interviewees are anonymized. Aksel, Wenche, and Tobias, etc. are fictitious names.
6. A detailed description of the interview material can be found in the appendix "Method". We conducted interviews with two objectives in mind: investigating how women and men perceive their workplace, and investigating the effect of different initiatives.
7. See more about this in Chapter 5.
8. This applies to the employees – we know less about ambitions among those who have left the faculty. Satisfaction with ambitions also varies somewhat with other variables in the survey, although this does not have a particularly strong effect with regard to gender. It is somewhat higher among participants having Norwegian family backgrounds compared to those having non-Norwegian backgrounds. Respondents whose parents had a high level of education

answered yes slightly less often than those whose parents had a medium or low level. Parents' level of education thus indicates higher career ambitions, although the association is not very strong.

9 The proportion of time for research reflects, in part, the contents of the different positions. Postdoctoral fellows have 0–25 per cent teaching as part of their contracts, whereas researchers are not supposed to teach at all.

10 As already mentioned, those participating in one of the FRONT project's long-term initiatives changed their perception.

11 See also earlier publications in the project, e.g., Thun, 2018, 2019.

12 See Chapter 2, "Men, Masculinities and Professional Hierarchies".

13 This is described in more detail in a previous publication from the project: Thun, C. (2019). Akademisk karriere som 'risikosport'. Midlertidighet i et kjønnsperspektiv. *Søkelys på Arbeidslivet*, *36*, (4–20).

14 A "classic" description in Norwegian gender research is Hanne Haavind's article «Makt og kjærlighet i ekteskapet» (1982). She later revised the model towards increased gender equality (Haavind, 2006).

15 The normal work week in Norway is 37.5 hours.

CHAPTER 2

Men, Masculinities and Professional Hierarchies

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Abstract: Men, Masculinities and Professional Hierarchies
Research on gender equality in academia addresses men's experiences to only a limited extent, and the significance of masculine norms is also poorly elucidated. In this chapter, we present our results on the effects of male dominance in the Faculty of Mathematics and Natural Sciences in the University of Oslo. We first discuss whether it is an advantage to be a man at the faculty. Our data mainly confirms this. The main career challenges and problems affect men as well as women, but less frequently. We were not able to identify a specific "male" pattern of problems. Instead, the most frequent problems among the men resemble the problems among the women, like unfair competition and devaluation. In the interviews, some men feel "as affected as women" and oppose specific measures for women. Yet the survey data shows that women are more affected, especially in some respects, like combining career and care leave, and unwanted sexual attention. There are also signs of informal comradeship among men, an inadequately examined majority position, the idea that an academic career is incompatible with family and caregiving – not just for women, but for men too – and tendencies towards a persistent connection between men, masculinity and professional hierarchies.

Keywords: men, masculinity, gender equality, academia, professional hierarchies

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Introduction

In Norway, as in other countries, the “problem” of boys in school, and boys’ poorer results compared with girls, has been a matter of media attention and research (Vogt, 2018). Yet men in academia remain a grey area, which has received little attention and study. This is despite the fact that academia in the past century and a half has developed from being entirely male-dominated to becoming a more gender-balanced institution. As described in the introduction to the previous chapter, there is, in Norwegian universities, approximate gender balance among all academic employees. However, there is a major imbalance between different disciplines and position levels. Men are in the majority on all levels in the Norwegian faculties of natural sciences and technology. In almost all other areas females dominate the lower levels, while males remain in the majority on the highest levels.

That men and masculinities have received little attention in research on academia from a gender perspective has various implications. For instance, a frequently discussed topic here is that women are stopped by various barriers in their career development. However, that some men are also affected by the same barriers affecting women is not elucidated. Individuals experience obstacles across gender divisions, although women experience them more.

When research largely fails to address men, the chances of understanding what happens when women are pushed out or decide to withdraw towards the top levels are also reduced. For example, does this happen due to opposition from the men in the organization, or are there other primary factors at work? When men’s perspectives and experiences are not addressed in research, the arguments are often characterized by an abstract model of competition between the genders, in which one gender loses and the other wins. Gender becomes like two “classes” with opposing interests. However, this is neither in line with gender equality research, nor recent gender research. Gender research emphasizes that we, both women and men, “do gender”[1] – at the same time as society and culture largely set the standards for acceptable ways of “doing”. The rules for doing gender can be even more regulated for men than for women (see e.g., Brandth & Kvande, 2015; Connell, 1995; Ekenstam et al., 1998; Ø. Holter, 2007; Ø. Holter et al., 2009; Kimmel et al., 2004; Lorentzen, 1996; Lorentzen & Ekenstam, 2006; Messerschmidt, 2015).

We wish to bring men more clearly into the picture, and in this chapter we present the results of our studies on the possible implications of numerical male dominance at the Faculty of Mathematics and Natural Sciences (MN faculty) in the University of Oslo – for women and men. We begin by describing what it is like to be a man at the MN faculty. Is it still the case that top positions in the natural sciences are a "man-size" job? Or do men also encounter specific problems, precisely because they are men? We then discuss what it means to be in the majority. For example, does male dominance in higher positions have an impact on the work environment and career paths? Since the MN faculty consists of highly different disciplines, we have also explored whether there are connections between men and masculinity on the one hand, and academic prestige and professional hierarchies on the other. Our material consists of two surveys, one among students and one among employees, interviews with men and women, as well as participatory observation.[2]

What Is It Like to Be a Man at the Faculty of Mathematics and Natural Sciences?

> It's not that I devalue women. But I have realized that I "speak highly" of men. I talk about their competence differently. I recommend them more often for things.
>
> (Aksel, male professor and leader)

Is being a man an advantage at the MN faculty? Based on our data, the simple answer is "yes". Considering that Norway is a relatively gender-equal country, this result is not quite what one would expect. The surveys, in particular, demonstrate a significant gender gap in men's favour, a plus for men statistically speaking. Our qualitative data, interviews and observations, confirm this. For instance, in the above quote Aksel describes how he has realized that he "makes" men competent by praising their competence and recommending them for various tasks – without promoting women to the same extent.

When asking master students, "Have you experienced negative social treatment from peers/fellow students in your master programme/group?", only 9 per cent of the men said yes compared with 28 per cent of the women. The corresponding figures for the same question on

negative academic treatment are 10 per cent for men and 16 per cent for women. The survey shows that negative experiences with the student environment are considerably less common among male students than female students.

The differences continue among the PhD students. For instance, PhD students assess their supervision differently based on gender. Thus 9 per cent of the men and 13 per cent of the women say they were not encouraged by their PhD supervisor to continue to do a postdoctoral fellowship, and 12 per cent of the men, compared with 19 per cent of the women, were not introduced to international research networks by their supervisor. Self-esteem as researchers is also more visible among men. For example, 43 per cent of the men and 31 per cent of the women say that they think they have "talent" for research.

Also, among employees, men report career problems considerably less often compared with women. Only about half as many men as women respond "yes" to questions on whether they are negatively assessed or scrutinized in the workplace, or whether they have to work harder than their colleagues to be evaluated as legitimate researchers or employees. More men than women feel that there is a supportive culture in the workplace, and fewer men feel that professional isolation or colleagues' attitudes affect their careers negatively. If we look at all factors in the employee survey having negative effects on careers, it appears that men fare better (fewer problems) than women on two-thirds of the factors in question, whereas one-third of the factors are approximately equal for men and women.

Variations Among Men

As a tendency, being a man is a statistical plus in the faculty, but it does not mean that *all* men, or men in each and every situation, have better career experiences compared with women. Instead, the data show a more varied picture. Men and women report many of the same career challenges and obstacles, although women report these problems more frequently than men. Nevertheless a considerable proportion of men experience similar problems to women. For instance, two in three who

report problems with academic devaluation are women. But one in three are men. In other words, genders do not constitute "pure" classes or categories.

A number of the interviewees also believe that it is not gender alone that causes problems, but rather other conditions. For example, when difficulties combining a research career with starting a family is discussed, Stein, a male professor and leader, describes how "the men who settled down, and the women, were lagging behind." In his opinion, there is no difference between men and women who start a family. They will meet the same career obstacles. The difference lies in the fact that more men do not start a family during the critical period of qualifying for a permanent position – and they can therefore focus entirely on work. Martin, a male postdoctoral fellow, also emphasizes that it is not gender, but the amount of care work that negatively affects career opportunities. "Having children affects men's careers just as hard as women's," he says. "Just as hard" is not in line with our material, but there is a clear enough tendency that it *also* affects men.

Thus men also experience problems with the work environment and culture, and it is natural to ask whether men experience problems *specific* to them, or problems similar to those that women experience. In the surveys, men in "typically female" positions report more problems. Their problems might entail issues like combining caregiving responsibilities with work, or that their partner's career has priority at home. But is there also a problem factor "typical for men"?

Here, the material is surprisingly silent. In the surveys, men and women *either* come out approximately equal, *or* men come out better (fewer problems). There are probably also some additional burdens for men that women rarely experience, but they do not form any specific patterns in our data material (see Chapter 5, "Experiences in Academia: A New Survey Study").

Who Are the Majority?

Men are the majority on the professor level in all MN departments except one. Five departments are male-dominated on student and recruitment

levels, while there is approximate gender balance in two departments, and a female majority in two.

Some of the differences between women's and men's experiences and perceptions were most visible in the department having female dominance in recruitment positions and male dominance on higher levels. Even though this is not a common situation in the faculty, it is common when looking at the university as a whole. In this situation, men on the lower levels see a majority of women among their peer colleagues. However, higher up in the position hierarchy, men are in the majority, and the unit can therefore implement gender equality measures with affirmative action for women. Mads, a postdoctoral fellow, illustrates how some men find this unreasonable. “If you're getting as much help as the women do, it is no wonder that you succeed.” Heidi, a female postdoctoral fellow, also describes how her male postdoctoral colleagues find the faculty's gender equality measures unfair.

> So I've also spoken about this a little with at least two entirely different postdocs who are both men. And I've received the exact same reaction, that they were, ah, a bit grumpy because they think that we [the women] get help while they don't. Because it is also very difficult for men to get a position, and they are in the minority in the department.

The female researchers in the same department also talk about minority situations. Hedda, a female associate professor, says she has “grown up” in the department. She has been a student, a PhD student, and a postdoctoral fellow there. During the entire period, she had many female colleagues, and did not think much about gender balance or gender equality measures. Now, when she has a permanent position as an associate professor, things look a bit different. “Now I suddenly find myself being the only woman in a room,” she says. Siri, a female postdoctoral fellow in the same department, confirms Hedda's description. “So there are several female top researchers, but of course, there are more men. […] It doesn't really feel male-dominated. Not in a way that you think about. […] But on the other hand, most of the professors are men, so you can often end up in a situation where you are the only woman.”

Neither men nor women say much about what it is like to be in the majority. When women achieve higher career positions, they suddenly realize that they are in the minority, as Hedda says. They have not reflected much upon the fact that they were in the majority group as students or doctoral candidates. Similarly, the male postdoctoral fellows describe belonging to the minority group, despite no longer being students with 70 per cent female peers. The group of postdoctoral fellows consists of an approximately equal proportion of men and women, and as male postdoctoral fellows, they ought to find themselves most often in situations, "spaces", with approximate gender balance or with a majority of senior male researchers.

The female researchers in departments with male dominance from student to professor levels also talk about their minority situations. For instance, Kathrine, a female associate professor, says she feels lonely. "I feel quite lonely right now, without any female role models. I am in a field in which I am often the only woman in a group of 20 to 25 men. Yes, so I would like to see more women." She describes what she misses. "It is more that men are usually more, they talk more easily with men, they find it less embarrassing, I think […] so in a way, there is comradeship among men that they don't have with a woman. And since there are not enough women, we don't have the same [situation]. […] I have no friendships with women."

Neither men nor women reflect upon their situations when they are the majority. For both men and women, it is the minority position that is experienced negatively, and thus is also commented upon.

Men, Women and Networks

Although men, as well as women, describe gender balance at work mainly as an ideal, they also report difficulties with cross-gender cooperation. Erik, a male professor in one of the departments where men are in the majority, from student to professor levels, describes, for example, how he is happy to meet with his PhD students off campus: "If we need to talk about something more complicated, I think we have better discussions if we go for a walk together." According to Erik, working like this is

more complicated with female PhD students than with males. He mentions episodes in which he has been with his male PhD students, where women might feel uncomfortable. In general, he is worried that women might often feel awkward in more informal environments.

None of the men mention problems with the work itself: that women might perform worse than men; have a different idea about how research should be done; be less adequate writers, and so on. It is working with women outside the university's office premises and laboratories that many men find difficult. They describe a concern that the women might feel uncomfortable, or think that the men want something more than just being colleagues. For instance, some like to go to a cottage to concentrate on their writing for a few days. Doing this in a research group with only men is fine, but it becomes difficult if there are women in the group. In the same way, going to conferences with female colleagues or PhD students is described as more awkward. The formal part of the conference is no problem, but problems arise in the more informal parts, such as the journey itself, having beer in the bar with colleagues from another university, or dinner and socializing in the evening.

It is not only in departments where women are in the minority that men feel more comfortable with other men than with women. Svein, a professor and leader of a research group in one of the departments with more female than male students and PhD students, says: "I have more female PhD students than males in my group. But the men are much more active. They invited us seniors to play football […], and we went for a beer afterwards. So I … the situation now is that I know them better. But I can't say no just because the women don't ask."

Women also describe difficulties with cross-gender cooperation. Mostly the informal situations become problematic in terms of working with men, although there is less emphasis on the informal parts of professional activities. Instead they often mention purely social situations. Marianne, a female postdoctoral fellow in a male-dominated research group, says, "There is nothing wrong with the other members of the group […] but all the things we do together revolve around sports or alcohol. I am not interested in that, and I feel uncomfortable and excluded." In a workshop discussion about how important the informal parts of, say,

a conference are for networking, men and women had different opinions. For the men, beer in the bar after the conference dinner was important for making contacts that might lead to various types of research collaboration. For the women, it was the formal conference activities that culminated in networking, such as presentations and the following discussions.

Do the difficulties with cross-gender cooperation described by both women and men have an impact on the researchers' professional work? Since men are in the majority on the professor level in all MN departments except one, and five out of nine departments are male-dominated on student and recruitment levels too, do men thus have better access to networks and support from colleagues than women? When we asked about access to networks in the employee survey, there was no gender difference in the responses on networks within Norway. But the men reported, somewhat more than the women, that they have secured access to international networks through their supervisor. Compared with 19 per cent of the women, 12 per cent of the men said they had no such access. There was also a clear gender difference in responses when we asked about which factors they considered crucial for becoming successful in academia. The greatest difference related to factors that men emphasize less than women. For instance men, to a lesser degree than women, think that good support from a senior/mentor, a network and mobility are crucial for success. They are also less concerned with role models. One possible interpretation is that men place less emphasis on things in which they already feel included. They are surrounded by male mentors and role models, and do not need to emphasize this. It is natural for them to belong to networks and get support from senior researchers. Therefore, they do not take notice of this the same way that women, who feel more excluded, do.[3]

In the interviews, however, both women and men describe networks and support from colleagues in higher positions as highly important for one's opportunities to build a career in academia. Differences in answers between the quantitative and the qualitative material may be because "network" was not defined in the employee survey. The question may therefore have been interpreted narrowly, that it related primarily to formal networks. The interviews describe mostly the importance of

informal networks and mentorships. For example, a male professor Jan, says, "International collaboration has always been there, and it is crucial. When you're new, international collaboration, particularly with established researchers, is important to build a network, an international network, and to be invited to conferences and get access to a bigger network." Bjørn, a male professor, also emphasizes how vital networks have been for his career:

> My boss at the time, my professor, invited this guy to come to us. I was a new PhD student, and we met the first day he came here and we started talking about what we had done, what we wanted to do, and he said, "Hey, I have something, maybe this might interest you." And I said, "Wow, this looks exciting. Perhaps we could do something together here?" And that's how it all began to roll, you know.

There is strong agreement that in order to succeed, you need to have an extensive and strong international network. Certain names within one's field "open doors", and it is in one's interest to be close to these people. The interviewees describe how they became members of such networks by being introduced through colleagues or supervisors. Having access to a network means, for instance, better opportunities for appointments, particularly to lower positions as PhD students or postdoctoral fellows. The person appointed to the post does not necessarily have to be part of the network. It is enough to be recommended by a network member.

However, some of our qualitative data show a clear gender pattern, in which men network with men and support other men to a greater extent than they network with women or support women. The interviewees are very aware of this. The underlying understanding is that people want to surround themselves with others like themselves, since this makes them more "comfortable". This thus has different consequences for women and men. Henry, a male professor, says, for instance:

> Maybe, maybe there is some bias. Sometimes it is easy to put your finger on it. I have definitely heard opinions from male, let me say, older male professors who don't expect enough from their female students, don't expect the same. […] In figures, it is an environment dominated by men and where I'm guessing that men feel comfortable, perhaps more than women. Because I mean,

> just look at the figures. […] When it comes to hiring, in relation to my own postdocs, if everything else is the same, I would choose the person with whom I think I have the best chemistry on a personal level. Because you collaborate all the time, you want to have a person you can work well with. And if other people encounter the same selection criteria, then there is a lot of room for bias here.

Marit, a female associate professor, describes the same thing, but from an "outsider perspective": "They think they are "pro" gender equality, but they behave as if […] they unconsciously favour, perhaps, a man – without being aware of it themselves. Not because they do it on purpose, but perhaps it is just because you are not entirely aware of what you do or say."

The interviewees, both women and men, describe how the networks that are decisive for a career in academia are often formed in informal settings and built on "chemistry", in other words, that people enjoy and are comfortable in each other's company. At the same time, both men and women describe problems with cross-gender cooperation. Male PhD supervisors explain that they feel more comfortable in their relations with male PhD students than with females, and female researchers describe how they feel left out in male-dominated work environments. As men are in the majority, both in the faculty and in higher education as a whole, these findings indicate that men have better access to informal networks, and thus career opportunities, than women.

Gender and Professional Hierarchies

> But I am in a group that doesn't have very high status. My discipline is considered a little softer. We work very interdisciplinary.
>
> (Grete, a female postdoctoral fellow)

As we have already pointed out, the MN faculty is gender divided. Five of nine departments are numerically dominated by men on all levels, whereas the four remaining departments are gender balanced or have female dominance on the student level, and only one has gender balance on higher levels also. Gender division is also visible within the

departments. In the Department of Mathematics, for instance, almost all the female academic employees work in the field of statistics, and there are virtually none in pure mathematics.

For a long time, gender equality research has emphasized the importance of divisions of labour in society (women in "soft" jobs, men in "hard" jobs), and how the unequal rewarding of these areas contributes to goals of gender equality not being achieved (e.g., Ellingsæter & Solheim, 2002). The "hard" areas are associated with masculinity, whereas the "soft" are associated with femininity.[4] This is still relevant with regard to gendered work distribution in academia.

Our qualitative material clearly shows that some research areas and groups have higher status than others. When Grete, in the above quote, described her field of research to a seminar group, and how being "interdisciplinary" was a minus, the participants clearly understood what she meant. Many of them referred to Grete's description in their own presentations. Jorunn, also a female postdoctoral fellow, said for instance, "My field of research is also considered soft. It does not have high status either. I think it is because my group consists of researchers from two different departments." Marit, a female postdoctoral fellow, also describes how her group is considered "soft". Despite the fact that she is working in a group with low status, she nevertheless feels that she, as an individual, is regarded as competent, even outside the group. She believes this is due to her educational background being within the discipline's core. It is "very technical theoretical":

> I think that this particular goodwill reaches outside the group too. Because I have a very technical theoretical background. But our group is considered soft, as a soft approach within the discipline. I am well aware that many of those who consider themselves at the core of the discipline, which is heavily technical or highly mathematically technical, they think perhaps that what we're doing is a little soft and maybe not an actual part of the discipline.

The surveys confirm the qualitative material at this point, showing a minus factor for interdisciplinary and "soft" subjects (see Chapter 5). According to our data, these are not the easiest paths to a successful career at the faculty.

Previous studies have demonstrated a correlation between gender balance and professional hierarchy: the higher up in the hierarchy a discipline is placed, the lower the proportion of women. For example, Henningsen and Liestøl (2013) show that women as a group make professional priorities, implying that they will enter in the lower part of what may be referred to as academia's value and prestige hierarchies. Academic disciplines that are traditionally considered "hard" and placed at the top of the hierarchy have the lowest proportion of women, whereas disciplines traditionally regarded as "soft" have the highest proportion. This association is very strong. Furthermore, professional hierarchy and the division into "hard" and "soft" academic disciplines are connected with cultural prestige, reward and status (Henningsen & Liestøl, 2013).

In the survey among master students, we asked whether they believe that their master programme is considered to be feminine or masculine. Of those responding 10 per cent said "yes" feminine, 18 per cent responded "yes" masculine, and 69 per cent responded "neither". On questions about which disciplines have the highest status, feminine or masculine, 11 per cent responded masculine, and 1 per cent feminine. However, most responded that the disciplines had equal status (30 per cent) or refrained from responding. The results can be interpreted to suggest that many of the master students believe that gender equality is already established – gender *should* not matter.[5]

Men in Male-Dominated Disciplines

How do professional hierarchies affect the men's situation in the faculty? Do men perform better within male-dominated disciplines? On account of anonymity, the variable "department/unit" was omitted from the database containing the results of the employee survey. In order to still be able to investigate the effect of professional hierarchies, the variable "professional hierarchy" was created, in which the units at the faculty were merged into the following three professional hierarchical levels:

- The high level corresponds to the "hardest" disciplines (mathematics, physics, astrophysics)
- The middle level corresponds to disciplines in the middle (informatics, geosciences, chemistry)
- The low level corresponds to the "softest" disciplines (biology, pharmacy)

The levels were partly inspired by the classical positivist professional hierarchy formulated by Auguste Comte nearly 200 years ago, although the categorization is obviously quite rough, with major variations within categories.

The professional hierarchy shows the anticipated connection to gender in our data. The high level is numerically male-dominated, with approximately two of three researchers being men, whereas the low level is female-dominated, with two of three being women, when all position levels are taken into account. Gender balance influences the work environment and culture. Yet some of the main problems, such as negative professional attention and unwanted sexual attention, are distributed somewhat similarly. The data suggest that gender balance plays an important role, especially when connected to other factors, like the "soft/hard" hierarchy.

Professional hierarchy, alone, does not have much impact on the important variables in the study, including environmental ones, such as negative professional attention and unwanted sexual attention, and cultural variables, such as the unit being non-sexist. This also holds true when controlled for gender. The pattern emerging from separate analyses of men and women is approximately the same. The differences are small and insignificant.

The most important reason why professional hierarchies do not play a much more explicit role here may be that the variable is too general, in addition to potential local variations. The tripartite hierarchy variable does not include gendered division of labour, and the prestige hierarchy within each discipline. The situation at the Department of Informatics illustrates this numerically. In the department's six largest master programmes, the proportion of women varied in 2020 between 14 and

59 per cent, with parallel differences among the teaching staff. Another possible interpretation is that the disciplinary orientation (hard, middle, soft) does not matter much in itself, but is a structural background factor that matters more when combined with other factors – for example a fluctuating transition between "prestige" and "masculinity".

The survey nevertheless indicates clear gender differences at one crucial point in relation to the significance of the professional hierarchy variable. This is the question of whether one feels that one's career ambitions have been fulfilled in one's current position, as shown in Figure 2.1.

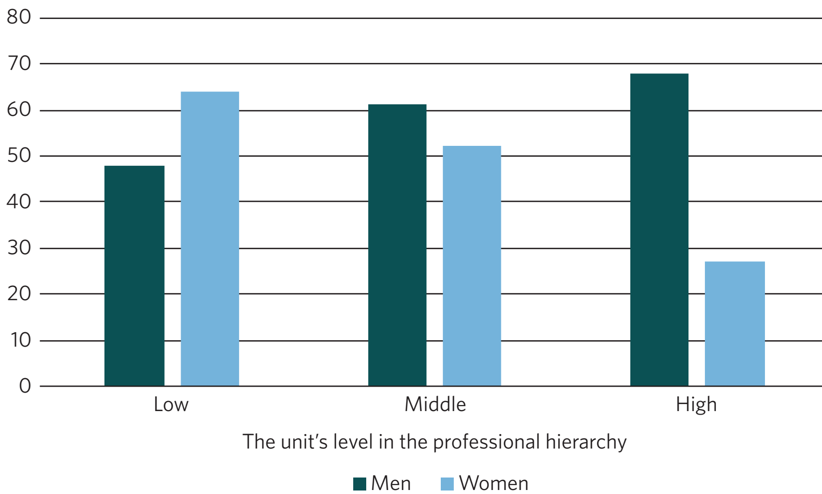

Figure 2.1. The Proportion Having Fulfilled Their Career Ambitions in Their Current Position, by Gender and Professional Hierarchy. The figures are shown as percentages.
Source: The FRONT employee survey (N = 409 academic employees).

Here the difference between men's and women's experiences is very clear. In lower prestige levels/areas with many women, women are more often satisfied (ambition fulfilled) than men. In the high level/male-dominated disciplines, men are satisfied more than twice as often as women. These differences are not due to different position levels, since control for position levels shows that this plays a minor role.

The graphs for the two genders draw a relatively convincing picture of professional hierarchy's – or gender distribution in the work environment – implications for the experience of satisfaction with one's

career ambitions. For men, it is conceivable that there is an added benefit to having succeeded in a subject at the top of a hierarchy, created primarily by men. For women, the "male generated" hierarchy may have less importance, and it is possibly easier to succeed – and to perceive oneself as successful – within a discipline that attracts many women. Also both genders possibly find it easier working within fields dominated by their own gender, as we have seen exemplified in the interviews referred to above (see also Holter & Rogg, 2010).

Discussion

The empirical material in this chapter reveals a clear tendency: Men experience fewer problems related to the work environment than women. We see signs of informal communities among men, a majority position that is inadequately reflected upon, and the idea that an academic career is incompatible with family and caregiving – not just for women, but also for men. There are also indications that professional hierarchies – gender distribution in the academic community – are significant in terms of experiencing satisfaction related to one's career ambitions.

That men experience fewer problems related to the work environment and academic culture than women is not a result specific to our material. On the contrary, these results are in accordance with results from other studies, carried out in similar academic institutions and organizations, in countries such as Ireland and the United Kingdom. The FRONT questionnaire survey for employees is based on the questionnaire forms from the Irish survey Integer, and the survey Asset from the United Kingdom (Aldercotte et al., 2017; Drew, 2013), which means that results can be compared more precisely. Integer and FRONT provide an almost surprisingly identical picture of women's and men's perceptions of the work environment. In the Irish survey, as in our project, the researchers found that women, less often than men, felt that colleagues asked for their views, and they more often than men experienced negative academic attention ("scrutiny") from colleagues. Considerably fewer women than men thought that the culture in their unit was non-sexist or respectful, and male respondents

felt evaluated more positively than their female counterparts, both with regard to teaching and research (Drew, 2013). The results from the Asset survey also correspond to ours. Here, the researchers found that women received less positive feedback, less recognition, and had fewer resources and less support than men (Aldercotte et al., 2017).[6]

The material in this chapter must be seen in light of the "gender gap" in experiences described more extensively in Chapter 5 "Experiences in Academia: A New Survey Study". The effect of women's substantial problems with the work environment and academic culture was formulated back in the 1990s in the hypothesis "accumulation of disadvantage". The hypothesis, which is based on studies from the U.S. and other countries, claims that there is not *one* individual factor that squeezes women out as they climb the career ladder, but rather that it is a complex process with many components consisting of various causes and effects (see e.g., Blue et al., 2018; Husu, 2005; Ivle, 2012; Pollack, 2013). This hypothesis is discussed in more detail in Chapter 7.

Comradeship Among Men

Could tendencies towards informal fellowship among men found in the empirical material be one of the reasons why men report fewer problems with the work environment and academic culture? What does it mean to other men that a number of male researchers say they feel more comfortable including men than women in informal settings and networks? Informal comradeship among men is an element described in many theoretical traditions, and is often referred to as *homosociality* (see e.g., Holgersson, 2006, 2013; Lindgren, 1996).

Homosocial means male-oriented – not necessarily gender-unequal. Yet it is associated with gender inequality in historical as well as modern research. Homosociality has been connected with domination or "master suppression" techniques in Nordic research (Holter, 1976; Ås, 1981). The theory includes subtle and partly informal forms of gender discrimination (that historically have replaced more direct and violent forms of oppression), including ascription of guilt and shame, social isolation, body language and other mechanisms.

In organizations dominated by men in the highest positions, as in academia, this often means that men identify with, want to work with, and also understand their position in relation to other men. Women are excluded because they disrupt the dominating culture, and because they do not possess the power resources that would make it worthwhile to include them (Lindgren, 1996). Specifically, the way in which homosocial structures function is that men in higher positions help men in lower positions, for example by inviting them into various networks. It is expected that those invited "repay" by showing loyalty and providing the same type of help when they come into positions of power themselves (see e.g., Hamrén, 2007; Snickare, 2012). Husu (2005) maintains that it is difficult for those not involved in the homosocial structures to see what is going on, since they appear as non-events for those on the outside:

> What happens [for those outside the homosocial structures, our comment] could, in fact, be that "nothing happens", or that something that should happen in one's career does not – you are not seen, heard, read, referred to or quoted, invited, encouraged. You are not supported, valued and confirmed. (Husu, 2005, p. 25, translated from the Swedish)

According to Brandser and Sümer (2017), homosocial structures appear not only as non-events to those not included, but on higher position levels, they also appear as active opposition.

Networks are undoubtedly important for work and careers in academia (see e.g., van Balen et al., 2012; Caplan, 1995; Pourciau, 2006). Criteria for academic success and distinction are created and defined in networks of researchers – researchers who are in turn involved in other networks, such as universities, research centres, scientific journals, and research councils. The gatekeepers to these arenas – who have the power to define scientific quality and recognition – are still primarily men (Nielsen, 2015; Osborn et al., 2000). Recruitment to such gatekeeper positions is also largely informal, and often occurs through invitations based on one's position within a network (van den Brink, 2010).

At the beginning of a career as a researcher, long-term, temporary positions are common. For younger researchers to remain in academia, they need to be seen and employed by more experienced researchers in

higher positions. Nielsen (2016) demonstrates how homosocial structures affect recruitment in academia. Men in leading positions contribute to recreating male dominance in the organization by "seeing" and assessing other men's competence. In this way, an informal group is created for those who have been "approved" and are intended for various career opportunities. According to Nielsen (2017), a consequence of this can be that women realize they are not included in these homosocial structures that may provide career success, and therefore choose to leave academia, or refrain from investing in the battle for the absolute top positions.

Our study confirms and elaborates the results from the other studies referred to. That men are more comfortable with other men and, therefore, to a greater extent build networks with men rather than with women, is reported by both men and women at the faculty. At the same time, there is another conflicting tendency in our material. As described in Chapter 1 "Gender-Equal Imbalance?", both women and men state that they want gender equality, and above all on the student level, gender balance as well. There is thus also a preference for *heterosociality*, collaboration across genders, at least in terms of attitudes and ideals. Although the interviewees are aware of the homosocial structures that exist, they rarely have a similar awareness of what consequences these structures have for women and men in an academic organization, in which a predominant portion of the highest positions – formal as well as informal – are held by men. Our interpretation of this is that the desire for gender equality and gender balance is more an expression of an ideal, than an awareness of unfair conditions.

Men and Caregiving Responsibilities

In Chapter 1 "Gender-Equal Imbalance?", we described a perception in the organization that women leave academia because it is difficult to combine an academic career with parenthood. The notion of the ideal academic worker (see Lund, 2012) as a "phantom" who works 24 hours a day is strong, and is seen as conflicting with caregiving responsibilities. In this chapter, we show a tendency for caregiving work to be seen as a career obstacle, not just for women but also for men.

In the interviews, men – as well as women – talk about how the line between those who can and those who cannot live up to the requirements of the ideal academic worker is drawn between those who have and those who do not have caregiving responsibilities and children. The interview study does not support the notion that women and men are equal in this area, but it is definitively a strong idea among some men that they are equally exposed.

These findings are strengthened by European organizational studies, which reveal new characteristics of men compared with more traditional masculinity (Puchert et al., 2009; Scambor et al., 2013). Scambor et al. (2013) show that younger men, in particular, emphasize personal relations and caregiving. Men's caregiving is an essential part of the research in this field, including fathers' care for their children (Ø. Holter, 2007). Brandth and Kvande (2015) maintain that if conditions are adjusted for such new trends, it may lead to major changes among men. In a study from a Finnish university, Lund et al. (2019) apply the term *new masculinities* to describe the emergence of a more relationally tuned masculinity. Other recent research uses terms like "relational" and "caregiving" masculinity. New trends emerge, challenging traditional and hegemonic masculinity. However, this does not mean that the "old order" has lost relevance in academia.

Professional Hierarchies

The theory of hegemonic masculinity may help to explain the association between academic prestige and masculinity in the empirical material. The theory describes a social-psychological level of a partly hidden and partly unconscious interaction among men resulting in an unofficial ranking – which is not necessarily in accordance with the formal organizational structure. Men in "hegemonic" positions are not necessarily leaders or superiors.

Several features of academia make this theoretical perspective relevant. The system is hierarchical, with researchers on lower levels depending greatly on those working on higher levels. The work day is characterized by informal relationships, which are clearly visible in our data, for

instance regarding networking and support, related to career development. Another factor is the high degree of uncertainty, including temporary positions, on lower levels, and strong competition. These are all characteristics associated with hegemonic masculinity in international research (see also Kimmel et al., 2004).

The classical theory of hegemonic masculinity assumed a relatively *open* demonstration of masculinity. In other words, it was a game of power, in which the winner was "more of a man" or "more of a boy", than the loser. The theory has its main origin in school studies, also supported by Norwegian research on power among boys, during a period in which physical strength is decisive (Ø. Holter, 1989). Here, masculinity is directly at stake. But even the classical theory of hegemonic masculinity, with its main emphasis on men's power, soon pushed this "direct" type of power towards "indirect". Fights among boys are explicit, they demonstrate a masculine ranking. Among adults, hegemonic masculinity does the same thing, but more implicitly. The men play roles, even though they do not fight. This is not explicitly stated, but it functions in practice, for example through semi-conscious gender bias, "tacit knowledge", and body language – you turn to the dominating man, push others aside, and follow in his footsteps (Messerschmidt, 2015). Hegemonic masculinity is also about *translation.* A gendered word (such as masculine, feminine) is replaced by gender-related words, but not directly meaning gender (such as strong, weak). Some researchers refer to this as "symbolic translation" of gender (Solheim, 2002).

We can thus understand how hegemonic masculinity theory may lead to the "missing link" in the relationship between men and professional prestige in academia. We are dealing with an underlying mechanism that translates real power relations into other, gender-neutral terms. On the surface, nothing is being said about masculinity when there is talk about who will become the new academic "shooting star". Gender-neutral norms prevail. At the same time, the hegemonic masculine power system can play a role in relation to neutral valuation.

The FRONT material provides a good deal of support for the hypothesis of a modified form of hegemonic masculinity. Interviews provide evidence that men, particularly on higher levels, take masculine advantages

and privileges for granted. The questionnaire surveys reveal continuous differential treatment and discrimination, although it is most often not considered a problem in the interviews with men. At the same time, the interviewed men are also, to some extent, aware that a "moderate" positive discrimination happens for the benefit of men, or at least that a certain amount of discrimination has been part of tradition.

The questionnaire surveys show that each gender feels most at home, and their ambition level is best looked after, in disciplines where their own gender is well represented (not in the minority). Men are much less inclined to think that the culture in their department could be sexist than women, and they are also less critical of the academic community in general. Hegemonic masculinity theory assumes that the formal meritocratic model "cracks", and does not function as intended in crucial phases and contexts. It implies that there are essential factors at work for this to happen, including traditional gender roles, competition, anxiety, and power. Much of this is in operation along a career path towards the top in academia.

In phases of reorganization and threats of shutdown, work organizations can resort to more traditional gender power (Ø. Holter et al., 1998). Cutbacks and reorganization are not necessarily what characterizes a university. But elements of threats, potential danger, and constant cutbacks in a career path can be quite similar – from the individual's point of view. From the individual candidate's perspective and experience, both reorganization and threatening cutbacks in one's career are often relevant, with ever stronger and new demands on each individual. Research shows that all this can increase the tendency to "fall back" to relatively traditional perceptions of gender, unless specifically counteracted (Dockweiler et al., 2018; see further Chapter 9).

Conclusion

As a group, men experience fewer problems with the work environment than women do as a group. The gender gap in men's favour, revealed in the questionnaire surveys (elaborated in Chapter 5), is confirmed by qualitative data from interviews and observations. Both among students and

employees, men report problems considerably less often compared with women.

This does *not* mean that no men have problems. One in three who say they experience problems of professional devaluation are men. However, when considered as groups, men and women either appear to be approximately equal, or men do better (fewer problems). There is no clear pattern of additional burdens for men, which women rarely experience.

For both women and men, an academic career is seen in contrast to family and caregiving. Men can experience gender equality initiatives at the faculty as unfair, since they believe the initiatives partially favour women. This is often because they consider themselves equally burdened by family responsibilities and housework, and thus are basically in a woman's traditional position.

Men's dominance in higher positions affects both the work environment and their career paths. Both men and women maintain that being in the majority, as opposed to the minority, has an impact on their work. In our data, the majority usually benefits – one feels more "at home". Men say it is easier to work with other men, whereas women often express their minority position as feeling lonely or excluded. Both genders claim that informal situations in connection with work are the most difficult for those in the minority. They also report how networks that are decisive for building a career in academia are formed in these informal situations, and that being comfortable in each other's company is vital for this type of networking. Despite clear descriptions of being in the majority as opposed to the minority, the significance of being in the majority is not reflected upon very much by the majority group.

The faculty is not only gender-divided across departments, gender division is also obvious within departments. It often becomes even more visible, the more detailed the statistics – on the "micro level".

Moreover, the qualitative material clearly shows that specific research areas and groups have higher status than others, and the quantitative material points in the same direction. Disciplines and groups highest up in the hierarchy often have a low proportion of women. Professional hierarchies – or gender distribution in the work environment – influence the experience of satisfaction with one's career ambitions. Women are

more satisfied in disciplines on lower levels of the hierarchies – where they are not in the minority – whereas men experience higher satisfaction on higher levels – where they are in the majority.

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Notes

1 See the introduction to part three for a description of the theory "doing gender".

2 The material and how it has been collected is further described in the book's appendix "Method".

3 Also referred to as "scarcity value" in survey research.

4 This hard/soft division is also called production/reproduction, human-oriented/technically-oriented work, and horizontal division of labour, in research. Historical research has emphasized how this division between "hard" masculinity and "soft" femininity became more prominent and systemized in modern times and through industrialization, although it existed to some degree in earlier periods too (Holter, 1997).

5 A more detailed list of subjects within each programme might have given more visible gender connections, but this was not within the scope of our study.

6 Data from Integer and Asset are described in more detail in Chapter 7.

CHAPTER 3

Sexual Harassment: Not an Isolated Problem

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Abstract: Sexual Harassment: Not an Isolated Problem
Is sexual harassment in academia an isolated problem, or is it linked to the academic work environment and culture? Research at the Faculty of Mathematics and Natural Sciences in the University of Oslo supports the latter view. Results show how sexual harassment is associated with problematic features of the workplace organization, environment and culture. This is especially clear in the case of unwanted sexual attention, which is closely linked to professional devaluation and other problems. Other more serious forms (unwanted physical contact, coercion, stalking, assault) are less frequent, yet clearly associated with unwanted sexual attention. The chapter presents and analyzes sexual harassment data in view of other recent research, and discusses why this topic is important, and how research can be improved.

Keywords: sexual harassment, workplace environment, gender equality, academia

Introduction

Sexual harassment is still part of working life in the Nordic region, including academia. Disclosures and debates, for example in connection with the #MeToo movement, have uncovered an unpleasant reality in many countries, Norway included. However, sexual harassment is a relatively

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new research area, with little standardization of methods and definitions. Therefore, research estimates of the extent of sexual harassment vary greatly in different surveys (Bondestam & Lundqvist, 2018; Feldblum & Lipnic, 2016). If the problem is defined strictly and narrowly, for example as clearly legally punishable cases only, the proportion of those reporting harassment falls, whereas it increases if the question is formulated more openly. Research on sexual harassment may be compared to research on bullying, which has been studied in Norway since the 1980s. In studies on bullying, there is now greater consensus on the definitions of bullying, and thus also greater agreement in studies reporting its extent.

All through its different definitions, research shows that women are more exposed to sexual harassment than men, and that young age increases the chance of exposure (Bondestam & Lundqvist, 2020; KI et al., 2022; McDonald & Charlesworth, 2016). On the individual level, the consequences of sexual harassment have been described as "systemic trauma" (Fitzgerald, 2017), which includes depression, burnout, and other negative health effects (Henning et al., 2017; McDonald, 2012; Sojo et al., 2016). Negative consequences for women's careers have also been documented, such as women withdrawing from positions (Henning et al., 2017; McLaughlin et al., 2017). On the whole, sexual harassment also has negative consequences for organizations, such as higher absence rates and turnover, and lower productivity (Henning et al., 2017; Gettman & Gelfand, 2007).

In this chapter, we not only describe the extent and degree of sexual harassment in the organization we investigate, the Faculty of Mathematics and Natural Sciences in the University of Oslo, but also the circumstances and conditions linked to it. We first asked about "unwanted sexual attention" without narrowing it down to "harassment". We then followed up with four detailed questions on: unwanted physical contact; pressure to go on "dates" or perform sexual favours; stalking; and physical assaults. This comprises a sufficiently detailed approach so as to include grey zones and cases of doubt.

Our material is considerably broader and more detailed than surveys focusing on sexual harassment usually are. It contains 190 variables on career development, work environment, academic culture,

and social background. We can thus analyze the relationship between sexual harassment and a wide range of conditions within the organization, such as work environment, culture, and experiences of different forms of discrimination. In the interview material, we also have descriptions of sexual harassment supporting and nuancing the quantitative material.

We begin the chapter by describing background and method of the study moving on to the extent of sexual harassment compared to the two other types of harassment – bullying and racist harassment – asked about in the survey of employees at the faculty. We then demonstrate how sexual harassment is connected to a number of other features relating to the work environment and culture. We address who is behind the sexual harassment, and descriptions of "acceptance" of harassment in the interview material. Finally, we discuss our results in light of other research.

Background: Material and Method

What is sexual harassment? What is unwanted sexual attention? When concepts are new and disputed, the chances of obtaining good information through questionnaire surveys or interviews may be reduced. However, new concepts such as "unwanted sexual attention" may also reveal *more* information. They might capture something that has previously been unspoken. This is relevant, for example based on debates and research on "grey zones" connected to sexual harassment, sexual violence, and rape (Bitsch & Kruse, 2012; Thoresen & Hjemdal, 2014; Vislie, 2015). When it comes to rape, the legal system often emphasizes the "worst" cases.[1] But these are often related to slightly less clear cases, or grey zones, that also often include many more cases than the most serious ones (Bitsch, 2018; Helseth & Sletteland, 2018; Madsen et al., 2005). It is therefore important to expand the exploration of sexual harassment in order to include not just the most serious cases. In other words, a narrow interpretation of sexual harassment is not only oriented more towards the "worst cases" than towards average cases, it also provides poorer (and perhaps misleading) information on context and broader connections – what the

phenomenon as a whole is related to. If we include "milder" cases, we will know more about conditions that create harassment.

Qualitative studies of sexual assaults and harassment demonstrate the importance of this open approach. The expression "unwanted sexual attention" was used in a pioneering Norwegian study back in 1992, where it was defined as an "invasion and attack on one's integrity" (Brantsæter & Widerberg, 1992, p. 25). The ERAC Standing Working Group on Gender Research and Innovation applies a similar definition of sexual harassment, that is "unwanted verbal, nonverbal, or physical conduct of a sexual nature, such as touching, comments on a person's looks or body, stalking, the sending of images with sexual content or sexual jokes," while they define sexual assault as "action of a sexual nature regulated in law, such as rape or attempted rape" (GRI, S. 2020 pp. 14–15).

A consistent result from studies of sexual harassment is that the problems are surrounded by taboos and silence, often with a large amount of shame, guilt and denial among the victims, including what is referred to as "identification with the abuser", among both male and female victims (Andersen, 2009). Tendencies of denial – "she wanted it herself" – are also well known from studies of assailants. The harassment becomes, as a tendency, interpreted as "normal" and mutual attraction (Ø. Holter, 1981, 2013; Ringheim, 1987). According to Husu (2001), sexual harassment in academia has, through various processes, become legitimized and normalized. It has become part of an academic culture, and therefore invisible.

In Norway as well as other countries, the #MeToo movement became a signal for more research, including survey mapping. In Norway, the signal was interpreted differently by different actors, however. Institutions, now facing requirements to uncover the main problem, favoured a "narrow" model, mapping the scope of sexual harassment, defined strictly. The legal aspect also aimed at uncovering the "worst" or clearly illegal cases. On the other hand, researchers mostly favoured a "broad" model, with more extensive details and context questions in the surveys. Discussions in the higher education sector led to a national scope survey in 2019 (Ipsos, 2019). The survey showed that the problem is relevant to the entire sector, and helped to justify the need for measures, including improved systems

of reporting, even though it was narrowly designed. By focusing only on harassment, and omitting the question of unwanted sexual attention, the problem was underreported (Ø. Holter & Zachariassen, 2019).[2]

Underlying issues in this discussion are: the question of *doing something* about the problems here and now, and *preventing* problems of sexual harassment in the long run. Both are important, and they are not necessarily conflicting. A "narrow" mapping can be an important first step followed by "broader", more detailed research. This is our point of departure. It is also important to point out that there is a long road ahead, and many challenges in this area. Even the most narrow scope surveys of sexual harassment show considerably higher figures than what emerges through whistleblower systems in institutions (Ipsos, 2019; Universitets- og høgskolerådet, 2019). In other words, students and employees disclose much more in an anonymous questionnaire survey than is actively reported.

Three Forms of Harassment That Affect Each Other

Our data on sexual harassment are primarily taken from a questionnaire survey[3] with a broad set of variables relating to, among others, career development, work environment, academic culture, and social background. In the survey, we asked about sexual harassment, bullying, and racist harassment. In the two latter cases, we were not able to follow up through detailed questions, as we did with sexual harassment, but we wanted to include these topics too, based on the principle of incorporating important variables and problems in the work environment and culture. Bullying is further described in Chapter 5, and racist harassment in Chapter 6. Here, we will briefly describe the three types of harassment together. The questions concerning harassment were not time-limited, for example "experiences in the past year" and the like, and thus the figures are not directly comparable to time-limited questions in other surveys.

In the survey, approximately one in five employees mention problems with bullying or harassment.[4] The proportion is largest among women:

25 per cent of women and 12 per cent of men have experienced bullying or harassment. These figures involve problems at the Faculty of Mathematics and Natural Sciences in the University of Oslo. The proportion is even larger if we also include those who checked two other alternatives: problems experienced at another academic institution, or in another line of work. The figures are quite similar if we look at academic and administrative employees separately. Women report problems approximately twice as often as men. Results indicate that problems occur across position categories (and workplaces/units), and that the gender pattern is fairly similar among academic and administrative employees.

Bullying and sexual harassment are the most widespread harassment problems in the study. In the faculty, 14 per cent of the women and 10 per cent of the men have experienced bullying, 12 per cent of the women and 3 per cent of the men have experienced sexual harassment, and 5 per cent of the women and 3 per cent of the men have experienced racist harassment. The figures show that a number of those who said they had experienced harassment had experienced several types of harassment. The tendency is that women experience problems more often than men – here as well as in other areas (see Chapter 5). The gender difference is particularly large in relation to sexual harassment.

A Broader Spectrum: Unwanted Sexual Attention

In order to capture the phenomenon of sexual harassment as a whole, and to avoid underreporting, we began, as mentioned, with a broad definition. In the questionnaire, we first asked about unwanted sexual attention. We then followed up with four detailed questions on: unwanted physical contact; pressure to go on "dates" or perform sexual favours; stalking; and physical assault.

Results show that unwanted sexual attention is considerably more widespread than the four other types. In the faculty, 7 per cent had experienced unwanted sexual attention, and 3 per cent had experienced unwanted physical contact.[5] Slightly less than 1 per cent had experienced pressure to perform sexual favours, and 0,2 per cent had experienced physical assault. Among the 843 participants, 7 per cent had

experienced unwanted sexual attention at the MN faculty, 5 per cent in other academic workplaces, and 5 per cent in other jobs. Of those who had experienced unwanted sexual attention in the faculty, 21 per cent had also experienced this in other academic workplaces.

Most of those who have experienced unwanted physical contact have also experienced unwanted sexual attention. This proves that the more serious types of sexual harassment, such as unwanted physical contact, are strongly associated with unwanted sexual attention. One of the main results of our study is that serious harassment, including physical assault, is relatively rare, whereas unwanted sexual attention is fairly common. 12 per cent of the women and 3 per cent of the men have reported experiences of unwanted sexual attention. However, the study shows that unwanted sexual attention increases the chance of more serious sexual harassment.

Sexual Harassment Is Not an Isolated Problem

In the survey, we explore experiences of academic devaluation through several questions and statements, such as "I constantly feel/felt under scrutiny/judged by my colleagues/peers." Such negative academic attention is, surprisingly, strongly associated with unwanted sexual attention. Those who have experienced unwanted sexual attention have an approximately 60 per cent greater chance of experiencing negative academic attention, compared to those who have not experienced unwanted sexual attention. This applies to all employees. Among the academic employees, this connection is even stronger. Here, those who have been exposed to unwanted sexual attention have more than twice the chance of experiencing negative academic attention.

Is this a pattern that varies by gender? The figures are small, particularly for men, but as far as we can see, the pattern is more or less the same for both genders. If we include everyone who has experienced unwanted sexual attention at the faculty, not just women, we see a fairly similar picture compared with analyses of just women.

Also, those who had been exposed to unwanted sexual attention often report other problems in the work environment, in addition to negative

academic attention. They experience less often that their scholarly contributions are valued, that they fit in, and that they have role models. They are more worried about addressing problems at work. For example, the proportion agreeing with the statement, "I have the feeling that my contribution to the department is valued," was only 36 per cent among those who had been exposed to unwanted sexual attention, compared with 61 per cent among those who had not experienced this. The chance of feeling valued was also nearly half in the exposed group. In relation to the statement, "I have the feeling that I 'fit in' easily within my department," 44 per cent in the exposed group agreed, compared with 64 per cent among the rest. In other words, the exposed group only had a 67 per cent chance of feeling that they fit in compared with the rest.

We do not know what is cause and what is effect in this picture. It might be that most reporting of unwanted sexual attention is a causal factor in relation to reporting other features of the culture in the unit. One can imagine that several different conditions come into play, for example: some are more exposed than others; some environments are more characterized by problems than others; and some respondents are more critical or have a higher tendency to report negative experiences. We will return to this in the discussion.

What we can say with certainty is that there are clear and significant connections between unwanted sexual attention on the one hand, and various forms of academic devaluation on the other. The pattern is clear across the six variables mentioned above, and it also emerges for other variables.

Are these results also valid when we control for other conditions? Multivariable analyses of the most important variables associated with unwanted sexual attention show that gender appears as the strongest associated variable.[6] Next on the list is a more critical assessment of the culture in the unit (more sexism, less respect, openness and transparency), and that women experience support and encouragement less often.

In order to acquire more insight into this, we also analyzed possible "causes", defined more strictly – class, ethnicity, supervisor's gender, and a few others – and restricted the analysis to women. The supervisor's gender entered the picture rather weakly. One can imagine that a

male supervisor would increase the chances for unwanted sexual attention, but this is very weak and not clearly significant. The other factors did not show any clear association. The most interesting part is, perhaps, what the analyses did *not* show. Neither of the two variables for ethnicity (family background, nationality) had any clear association with unwanted sexual attention. Neither did the parents' level of education seem to matter.

The results of our analyses generally confirm that the problem dimension is relatively independent of ethnicity and class, but strongly linked to gender.

Figure 3.1 (below) summarizes how unwanted sexual attention is connected to other variables in the work environment and academic culture.

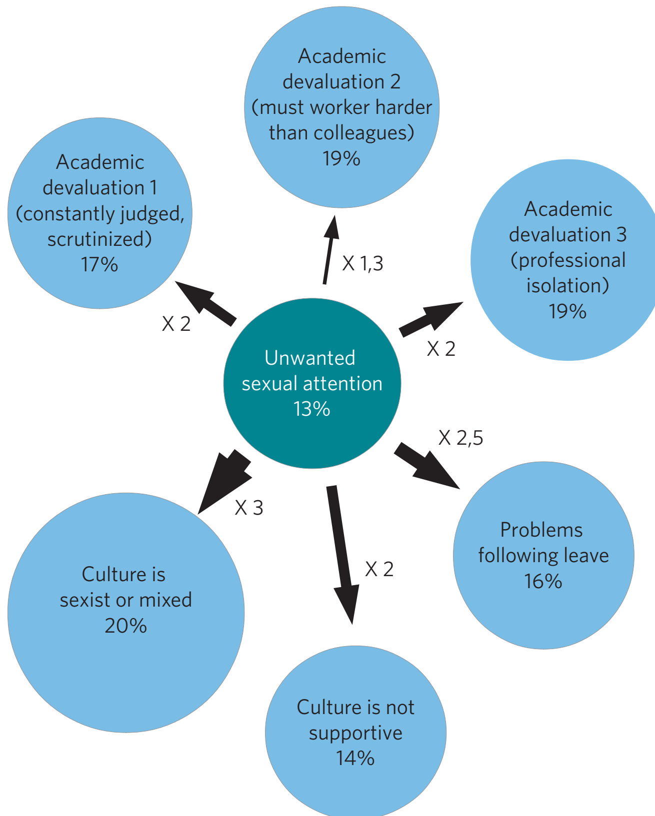

Figure 3.1. Associations Between Unwanted Sexual Attention and Other Variables. Source: FRONT Employee survey (N = 843).

The figure shows the associations between unwanted sexual attention and other variables.[7] The circle size roughly depicts the extent of the problem among respondents (also given in percentages). The thickness of the arrows represents the association between unwanted sexual attention and the other variables. The text below the arrows, for example, X 2, means that the chance of having experienced other problems is approximately twice as large in the group having experienced unwanted sexual attention, compared with those not having experienced this. Arrows are used to indicate a likely causal chain, but we do not know this for certain.[8]

In the survey, we asked about 12 different conditions related to the work environment. We found clear connections between important conditions related to the environment and unwanted sexual attention. The analyses showed four important factors, as shown in Figure 3.2 (below).[9]

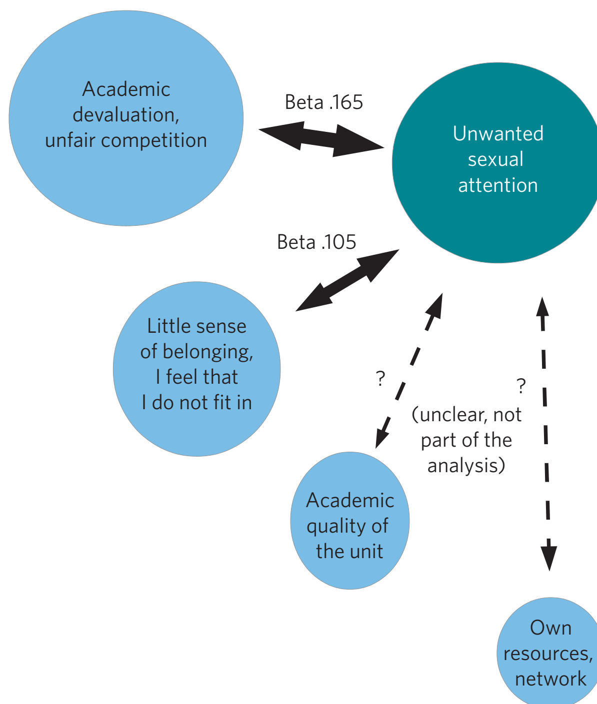

Figure 3.2. How Four Work Environment Factors Are Associated with Unwanted Sexual Attention. Source: FRONT Employee survey (N = 843).

Figure 3.2 shows the main features relating to unwanted sexual attention.[10] The result is clear. Two factors in particular are linked to unwanted sexual attention. The main factor is an organizational culture that incorporates a lot of negative assessment, in which some have to work harder than others in order to be recognized. The other factor is that one does not feel at home or does not fit in. This factor is also very typical. The other two factors are more uncertain (dotted lines), and probably less important. They are not included in the analysis because the association becomes uncertain when the first two factors are taken into consideration. The unit or environment's academic quality seems to matter relatively little, and the same applies to one's own resources, for example one's own research networks.

Who Is Behind the Harassment?

In addition to asking about types of harassment, we asked who is behind this – leaders, supervisors, colleagues or students. The distribution of responses regarding sexual harassment largely resembles the two other types of harassment (bullying, racist harassment). Colleagues are most frequently involved. But there are also some important differences. In Figure 3.3, we see how different groups are involved in bullying and unwanted sexual attention.

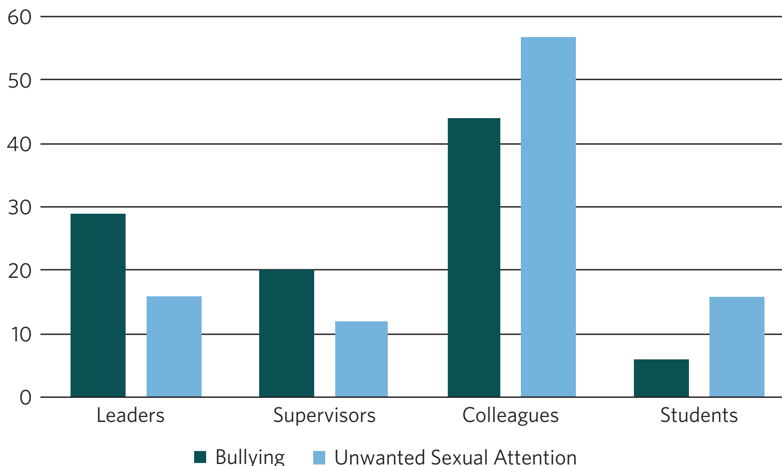

Figure 3.3. Who Is Reported to Be Behind Bullying and Unwanted Sexual Attention, by Main Group. The responses are given as percentages among those who have experienced the problem. Source: FRONT Employee survey (N = 843).

The figure shows percentages among those who report experiences of bullying and unwanted sexual attention in terms of who harassed them. Almost 60 per cent of those reporting unwanted sexual attention say that colleagues were involved.

We see that bullying is a more "vertical" dimension than unwanted sexual attention, which is more "horizontal". In other words – leaders and supervisors are more clearly in the picture in relation to bullying, whereas colleagues and students are more clearly involved in unwanted sexual attention. There is thus a considerable similarity in the "perpetrator" profile for the two types of harassment, but also a clear difference.[11]

On the whole, we see that harassment – based on the groups behind it – provides a picture strengthening the impression that the problem is not an isolated one. It occurs across different groups. Leaders, colleagues and others are involved. Since we do not know very much about the overall degree of contact within these groups – leaders, supervisors, colleagues and students – neither do we know much about whether any of the groups are overrepresented. That colleagues appear vividly in the picture may be interpreted to suggest that this represents the main part of professional contact (rather than that this group is overrepresented). Leaders are perhaps somewhat more strongly represented, especially in terms of bullying, and students somewhat more weakly (again, especially in bullying) than one might have expected. We do not know. What becomes clear is that the problem arises from negative interactions between people in all groups – leaders, supervisors, colleagues and students.

Some Harassment Must Be Accepted

> No. No. N … no. No … I mean, that [laughter] is a bit difficult, but that, we had one professor, an old professor, in our department who was, but it was something that everybody knew, that he could be a little like … not that much … he was just very, like, hugging and stuff [laughter], but of course it's … so there were stories about it and things, but that is like … yeah, it is almost like a cliché. But it's, yeah. It hasn't [laughter] deprived me of any sleep, it's more like, OK, I'll move away from there [laughter].
>
> (Siri, a female postdoctoral fellow)

We have relatively few examples of stories of harassment from the interviews. Nor did we ask systematically about this, as we did in the employee survey. Therefore, the problems emerge more clearly, and to a greater extent, in the quantitative than in the qualitative material. In the interviews, descriptions of sexual harassment sometimes came up when we asked about the environment of the workplace or about experiences of discrimination, but the interviews were not a detailed mapping of sexual harassment.

The interviews in which harassment does appear nevertheless describe an organizational culture strongly signalling that some types of harassment must be accepted. In the introductory quote to this section, Siri, a female postdoctoral fellow, describes the harassment type of unwanted physical contact. Siri is careful to point out that she could handle the situation. She was not afraid of the older male professor. The fact that he embraced and touched the younger female colleagues was something everybody knew about, something that happened regularly, nothing harmful. The women were expected to be able to act in an appropriate manner, by pretending that nothing is going on and move away.

Marianne, a female postdoctoral fellow, says that she was threatened by students on two different occasions. She is alone in a room with a student and afraid of not being able to leave the room: "He doesn't touch me, but it was a horrible experience, and … yeah. He … yeah, he said a lot of things, he yelled, he began to …." On the other occasion, she is with a group of students and feels that she, as a lecturer, is responsible for everybody's safety: "And he is standing, he is banging his fist on the table, yelling, 'You, woman, you bla, bla, bla, bla, bla,' and it was like … so I tried to say … OK, that's enough now, we will address this in another meeting. […] He doesn't want to leave the room, so …." Marianne feels that the organization's focus when handling the situation is that the students have their exam. They are given new supervisors and other exam forms. "I do realize that it has administrative consequences, but it also has … I don't know, personnel consequences, and there must be a person handling this."

Marianne begins her description of the incident by saying, "Yeah, I've completely forgotten this." She continues, "No, because at the weekend,

on Sunday, I don't know what … I did not think about our meeting or anything, suddenly I'm back in a situation I was in here at the department, which I fortunately, or I believe there will be many such things, we do it often, women and men, if we have such experiences, that we place them somewhere else." Marianne describes how she has placed the experience "somewhere else". It was so unpleasant that she does not want to remember it.

That "we have such experiences, that we place them somewhere else," is an appropriate summary of a tendency in the interview material, in line with research on underreporting – and with the picture that emerged in the questionnaire survey. When we ask systematically about different forms of harassment in an anonymous survey, the threshold for reporting is lower. When we, in the interviews, do not ask directly about experiences of sexual harassment, few participants address the topic.

Discussion

In 2019, a survey of bullying and harassment among employees in the higher education sector in Norway was conducted (Ipsos, 2019). The response rate was somewhat higher among women than among men, similar to our survey, and the total response rate (42) was also similar. The results showed that 13 per cent had experienced bullying and harassment, whereas 2 per cent had experienced sexual harassment during the past 12 months. Women experienced bullying more often than men (14 compared with 10 per cent). Figures from the University of Oslo were roughly in line with the national average (Ipsos, 2019). Although the questions in the survey were time-limited to "the past 12 months", the figures for bullying correspond with the results in the FRONT study. However, the definition of sexual harassment was much narrower in the 2019 survey. For example, they did not ask about unwanted sexual attention, which makes it difficult to compare their figures with ours. As mentioned, due to different standards and question formulations, mappings of sexual harassment provide widely varying figures for extent (Bondestam & Lundqvist, 2018).

According to Norway's largest student survey SHoT (SHoT, 2018b, p. 24), which focuses on the social-psychological work environment,

including experiences of discrimination, the figures for sexual harassment among students is somewhat lower at the MN Faculty (19 per cent) compared with other faculties at UiO. The social sciences are at the top of the list (34 per cent), followed by law (32 per cent), education (30 per cent), the humanities (30 per cent), theology (26 per cent) and medicine (24 per cent). The figures indicate that the MN faculty is *less* characterized by sexual harassment than the other faculties. However, the figures are not distributed by gender, and since studies of academia show that women are more exposed than men (Bondestam & Lundqvist, 2020), the MN faculty's low score here is probably related to the lower proportion of women in the faculty. It is also possible to imagine that a certain "awareness factor" comes into play (such as more discussion of the topic in the social sciences). The threshold for reporting is an important factor with regard to harassment, and it might not be equally low in every discipline.

On the whole, the SHoT survey shows that 31 per cent of the women and 8 per cent of the men have been exposed to some kind of sexual harassment. The questions were formulated differently than in the FRONT survey, but the main tendency is the same: Women experience this roughly four times more often than men (SHoT, 2018, p. 87). It is particularly younger students who experience sexual harassment. An article from the SHoT project addresses a likely tendency for underreporting among men, documents significant health costs of harassment, and discusses methodological limitations, including low response rates (Sivertsen et al., 2019). To compare the results with other European countries, the ERAC Standing Working Group on Gender Research and Innovation estimates, based on a review of international studies, that 25% of female students in Europe experience gender-based violence during their time in the higher education sector (GRI, S., 2020). The concept of gender-based violence included gender harassment, sexual harassment, and sexual assault.

As mentioned, our questions on harassment are not limited in time, but apply to the participants' entire period at the faculty. Studies show that unwanted sexual attention and sexual harassment are strongly linked to gender (women) and age (young) (see e.g., Akademiet for yngre forskere, 2019; Bondestam & Lundqvist, 2020; Ipsos, 2019; McDonald & Charlesworth, 2016; KI et al., 2022). We cannot directly test for age in our

study, since we do not ask when the problem occurred. Our results do not clearly demonstrate that young women are the most exposed. On the contrary, more senior women report as many or even more experiences of harassment. But since our questions were not time-limited, this may be because older women report "accumulated" experiences, and therefore come out higher, although the actual incidence rate is higher among younger women.

However, we have an indirect indication that part of the reporting for our question on unwanted sexual attention is not very far back in time. On the question of whether the culture in the department/unit is non-sexist, only 15 per cent of those who have experienced unwanted sexual attention *completely agree*, compared with 37 per cent of those who have not experienced this. On the other hand, 20 per cent of those who have experienced unwanted sexual attention *completely disagree* that the culture is non-sexist compared with only 4 per cent of those who have not experienced it. This may be interpreted to suggest persistent and not just obsolete problems.[12]

Sexual Attention and Negative Academic Attention

What is new in our results is that we are able to show that unwanted sexual attention is not an isolated problem, but is instead linked to other variables in the work environment. Of those who have experienced unwanted sexual attention, 37 per cent also report experiences of negative academic attention, compared with 15 per cent of those who have not experienced unwanted sexual attention. In other words, the chance of experiencing negative academic attention is approximately 2.5 times greater among those who have experienced negative sexual attention. This is not only a new, but also an astounding result, in light of the fact that unwanted sexual attention has been addressed only marginally in work environment surveys. However, the result is in line with other recent research on sexual and other types of harassment in working life. Harassment and other negative attention often go hand in hand, in that the person who is exposed to this is also devalued as a professional (Bondestam & Lundqvist, 2018), and this often leads to general unhappiness and psychological problems

for those exposed (see e.g. Bråten & Øistad, 2017). Recently, a major Swedish study, with about 40,000 respondents from the higher education sector, shows that those who have experienced unwanted sexual attention report a lower degree of support from colleagues and leaders, poorer general health, higher stress levels, a higher degree of burnout, and they consider leaving their work or studies more often (KI et al., 2022).

In our study, the connection between sexual harassment and other conditions in the work environment and academic culture emerge in a comprehensive and systematic manner. We see that some features of the work environment play a particularly strong role. Among these are: professional devaluation, unfair competition, and the feeling of not fitting in. Unwanted sexual attention thus has a larger scope than is often assumed, and is thus connected to other variables that are more "normal" in everyday academic life, such as academic devaluation. The results confirm previous research relating to the many negative side effects of sexual harassment, and show that doubting one's own abilities is part of the picture (e.g. Charney & Russell, 1994; Henning et al., 2017; McLaughlin et al., 2017).

Helseth (2020) is one of the researchers who summarizes #MeToo and the subsequent academic debate. She emphasizes that the results were shocking, also for researchers working in the field. Support was so great, with manifestoes from many different occupational groups, from actors to medical students – and much of it revolved around very serious transgressions. Many stories that were not previously known emerged. According to surveys, it is estimated that approximately one in ten women in Norway have been exposed to unwanted sexual acts (Thoresen & Hjemdal, 2014). Rape is part of this broader scope. Research aims to include more of the grey areas, and acquire more information about them. Underreporting is widespread.

"It has to do with what you want to admit to yourself that you have been part of," Helseth maintains (2020), claiming that underreporting is even more widespread in terms of what one has exposed others to – being the abuser or assailant is even more of a taboo. "We lack a language for this," she claims. Many have crossed lines at one time or another: "We have to normalize this without trivializing it. Many make mistakes now

and then when it comes to flirting. The difference is those who keep pushing and do not respect that the other party is not into it."

Research on flirting and sexual attraction demonstrates a complicated and often subtle interaction, traditionally characterized by different gender roles and a structural inequality in relation to what each gender offers and seeks (see e.g., Ø. Holter, 1981, 1990). Nevertheless, ordinary flirting or dating has the character of an equal meeting. Unwanted sexual attention differs from flirting, according to our material – it is perceived as unpleasant and offensive.

Studies of various forms of harassment and bullying began, naturally enough, with information from those who had been exposed to it (see e.g., Sætre et al., 1986). Research might take the form of a list of problems, "Have you been exposed to any of these?". This is important, at least as a first phase. But if we look at the matter from a preventive perspective, information about assailants is just as important. One goal is to reduce the damage, but an overarching goal is to reduce the *cause* of the damage. Here, research on harassment in academia has come up relatively short. Research on men's violence against women indicates that many men who have used such violence later change their behaviour, whereas others develop a regular pattern (Ø. Holter, 2013; Råkil, 2002). Sexual harassment is probably an area with even more grey zones than violence. It is therefore possible that quite a few men (and some women) are involved in "unwanted sexual attention" as assailants, but mostly in camouflaged and subtle forms, while only a small proportion progress towards sexual assault through physical contact, coercion and so on. Here we need more research.

Features of Organizations That Increase the Chance of Sexual Harassment

Research shows that the chance of exposure to sexual harassment is greater in some occupations than in others. Physical contact and close personal contact increase the chances. Actors and service personnel are more exposed. The same applies to alcohol in job contexts (Bråten & Øistad, 2017). These are nevertheless "external" factors. Good jobs and

workplaces can probably involve both (some) physical contact, and (some) alcohol without necessarily involving more harassment. What is decisive are the "internal" factors – work environment and culture. Highest on the list here is equality or a low degree of power relations, security, and the opportunity to speak up.

"Culture" has become more visible, also in institutions' attempts to prevent sexual harassment. There is a desire to change the culture, not just reduce damage. But if we are to change the culture, we need to know how it actually works. It is not sufficient to register only the "worst" cases of harassment. We must include the setting – the environment, culture, context – and the grey areas too. This is an important argument for using a broad definition of sexual harassment as a basis, and not just criminal cases. As we have seen, the grey zone of "unwanted sexual attention" provides new and vital information both as to the extent of the problems and how they are connected to other variables.

Academia does not necessarily score high on factors like physical contact. But it scores high on "close personal contact", for example between a supervisor and a PhD student, and other structural features that may increase the chance of sexual harassment. This has to do with a strong and unequal power balance between levels (such as the supervisor/PhD student relationship), major insecurity relating to one's job situation, and a high degree of competition. Both power and insecurity play significant roles. Often, it also has to do with individual relationships not being open to the surroundings, for instance in small academic communities. All of this may help explain why the proportion experiencing unwanted sexual attention and other forms of sexual harassment can become relatively high in academia, even when other factors might perhaps not indicate this (e.g., Bondestam & Lundqvist, 2018, 2020; Henning et al., 2017; MacDonald, 2012; O'Connor et al., 2021).

In an overview of recent studies of sexual harassment in Norway, Jardim et al. (2022) found tendencies similar to those in the FRONT material, such as much higher rates among women than men, as well as higher rates among younger than older respondents. In addition, a considerable variation between occupations indicates the importance of the work culture, as well as the character of the work. Hotel/restaurant staff,

nurses and health workers, journalists and media employees, and military employees were among the groups having the highest incidence of sexual harassment (p. 15). Some groups, like health workers, reported that most of the harassment came from patients/users, while other groups, such as journalists and military employees, reported that it came mainly from colleagues or leaders (p. 20). The consequences of harassment appeared most serious in the hotel/restaurant industry and the health services. Men are the main problem factor in all sectors. Men are the assailants in four out of five cases of sexual harassment in academia (Jardim et al., 2022, pp. 15, 20, 23).

Some researchers have argued that increased attention to sexual harassment in the wake of #MeToo has not resulted in an equally increased theoretical understanding. The causal conditions are still unclear. In a retrospective view of the Norwegian study by Brantsæter and Widerberg from 1992, Widerberg (2020, p. 84) writes that "our understanding holds true also today. #MeToo does not express a different or better understanding of sexual harassment than the one we arrived at, perhaps rather the contrary. In our book, we dig deep in order to understand all varieties of experiences and reactions. Maybe it was due to this complexity, but also the image of society's "highly" patriarchal structure, that we did not reach a wider audience back then."

In this chapter, we have concentrated primarily on *connections* (associations), not empirical data or theories of the *causes* of harassment. In her 1992 study, Harriet Holter (1992) postulated three main types of causes of harassment. These could be on the level of social actors, where unwanted sexual attention rendered women invisible as equal colleagues, while they were simultaneously visible as gender (H. Holter, 1992, p. 131). But in addition to such actor-power, often linked to "domination techniques" (see Chapter 2; Holter, 1976), another cause of harassment could include hierarchical and structural power. Hierarchical power is often open, between position levels (and professional levels in academic prestige hierarchies), whereas structural power is more hidden and indirect. "Structural power is incorporated into social systems in such a way that one cannot identify specific people as exercisers of power" (H. Holter, 1992, p. 135). "Organizations present themselves, and are perceived, as

gender neutral "shells" that are not themselves responsible for being gendered in such a way that they are systems of male power" (H. Holter, 1992, p. 140).

Our results reflect this interpretation as still being relevant. Harassment has to do with actors, but also with hierarchies and structures. In part two of this book, we discuss further how such neutral structures may contribute to a gender gap in academic experiences.

Conclusion

Our study shows that sexual harassment is still an extensive problem. Moreover, it shows how sexual harassment is clearly connected to other conditions in academia – such as work organization, culture, and environment. Among the respondents, unwanted sexual attention is linked to academic devaluation and outsiderness. Furthermore, we see that unwanted sexual attention is the most widespread type of sexual harassment, whereas other and (usually) more serious forms, such as unwanted physical contact, coercion, stalking, and physical assault, are less prevalent. However, most of those who have experienced more serious types of sexual harassment have also experienced unwanted sexual attention. The five forms of sexual harassment for which we have data are connected and form a pattern.

The occurrence of unwanted sexual attention is much higher among women than among men. This also applies to the other forms of sexual harassment. This is known from previous studies. However, we also see a new, clear pattern – less well-known. Results show a strong connection between unwanted sexual attention and academic devaluation, and deprecation in various forms. In other words, sexual harassment is not "isolated" or "unique". It is part of an overall pattern.

The fact that the proportion who have experienced one or several types of harassment is so high (1 in 4 women, 1 in 5 among all respondents), and that harassment is so strongly connected to other conditions of environment and culture, is a refutation of the idea that this problem applies to only a few, and represents isolated incidents, in which unwanted sexual attention involves a few very special cases.

By identifying problem factors, our study also leads to the possibility of organizational and cultural change. The fact that the problems are closely connected to environment and culture makes it possible to improve the situation, precisely through measures in these areas. More openness with regard to sexuality, a more comprehensive understanding of problems relating to gender and gender equality, along with low-threshold systems for reporting and conflict resolution tackling problems before they develop further, can all be elements of such an approach.

The extent of sexual harassment and its connection to academic devaluation emphasizes the need to work against imbalance and gender discrimination, and raise awareness of the importance of gender equality in academic institutions. Systematic work over time is needed to change an environment and culture in which harassment still occurs. Improved research and a more systematic knowledge base are central to this work. Further research may build on the breadth of our study, in which sexual harassment is investigated in terms of career development, environment and culture, and at the same time develop the level of detail. It can study connections between various forms of harassment, and monitor changes over time.

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Notes

1 According to Bitsch (2019), this tendency is linked to gender stereotypes in the legal system, and simply what types of cases are easiest to work with for lawyers, and are easiest to prove. In this chapter, we will not address the legal debate, such as consent legislation.

2 A similar criticism (of a too narrow definition of the problem) may be directed at the term often used internationally, "gender-based violence", which is strongly focused on violence, but does not clearly include sexuality. The academic debate on how conditions may be mapped, and what

terms may be used (such as sexualized violence, offensive sexuality, and assault), has been ongoing in Norway since the 1980s (Sætre et al., 1986) and testifies both to different points of view and to a wide and partly diffuse area.

3 The questionnaire survey comprised 843 employees, and was conducted in 2018. The project material also consisted of a student survey, interviews and action research, described more closely in the appendix "Method".

4 Such as "bullying/harassment" in the questionnaire form (without specifying the grounds for this).

5 The figures apply to the entire sample in the employee survey (N = 843).

6 The methods are described in more detail in the appendix "Method".

7 The FRONT employee survey (N = 843) paired correlations.

8 The association may include cause and effect both ways, but this is probably the main direction (see Chapter 8). The analyses are bivariate, with correlation as a yardstick for association or possible connection in the material. The figures apply to the entire sample. For some variables, the associations are even stronger if we look only at the women in the sample.

9 Based on factor and regression analyses. The arrows represent associations in a regression analysis, in which the factors are controlled for each other. We first selected the 12 most important variables through pairwise correlation with unwanted sexual attention, then grouped the variables through factor analyses selecting a four-factor solution, and finally tested the solution through regression analysis (shown in the figure).

10 Regression analysis, standardized beta values.

11 Figures from the employee survey, all employees (N = 843).

12 We also have a certain indication of this based on multi-variable analyses.

CHAPTER 4

Who Is Publishing What? How Gender Influences Publication Rates

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Abstract: Who Is Publishing What? How Gender Influences Publication Rates
This chapter examines scholarly publishing within the Faculty of Mathematics and Natural Sciences in the University of Oslo from a gender perspective. The question posed is whether women publish less than men, and if so, why. Based on the reported number of publications over the past two years, the study applies multivariable methods to investigate the relationship between the number of publications and factors such as position, total worktime, and gender. The analyses show that gender has little significance when these other factors are taken into consideration. The results are discussed in light of other studies on publishing practices.

Keywords: scholarly publishing, gender differences, multivariable analysis

Introduction

Publishing has become an increasingly important prerequisite for succeeding in an academic career. Outstanding scientific accomplishments, so-called scientific excellence, are often assessed based on the individual

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researcher's ability to influence their research area. One easy way of measuring this is by registering the number of publications and citations from these publications. As a result, publishing or being cited is, in itself, associated with excellence (e.g., Addis, 2010). According to Campbell et al. (2010), there seems to be a consensus among researchers that the study of publications and citations, bibliometry, is an "objective, reliable, and cost-effective measure of peer-reviewed research outputs" (Campbell et al., 2010, p. 66). Various indicators of scientific productivity are used as a basis for employment, promotion, and allocation of research funding (Reymert, 2020; Wilsdon et al., 2015). In addition, bibliometry is considered a reliable tool for assessing and managing R&D funding (European Science Foundation, 2009). However, there are critical voices among researchers, who argue that bibliometry and its impact factor have become too dominant, and that they are also misleading in terms of assessing scientific quality (see also Haeffner-Cavaillon & Graillot-Gak, 2009; Hicks et al., 2015).

Several bibliometric studies have revealed a gender difference in the number of publications and citations (e.g., Holman et al., 2018; Knepper et al., 2020; Larivière et al., 2013; Ledin et al., 2007; Long, 1992; Price, 2002; Symonds et al., 2006; Taylor et al., 2006; Xie & Shauman, 1998). Studies applying various methods of measuring, adapted to different disciplines, or with data from different periods, all point to the same result: Women publish less than men (van den Besselaar & Sandström, 2016).

Studies of publishing in Norwegian universities show the same result as international studies: Women publish less than men here too. In 2018, a female researcher in Norway produced 1.15 publication points[1] on average, whereas a male researcher produced 1.67 points (D. W. Aksnes, cited in Gjengedal, 2020). This pattern appears across disciplines and countries (e.g., Kyvik et al., 2011; Kyvik & Teigen, 1996).

No satisfactory explanations for these gender differences have been given, however. For example, the fact that women and men most often find themselves in different research areas within academia, and therefore operate within different publishing traditions, cannot explain more

than a portion of the differences in productivity (European Commission, 2004). Most studies of gender differences have discussed specific explanations, such as the significance of care responsibilities (e.g., Ledin et al., 2007; Mairesse & Pezzoni, 2015; Vabø et al., 2012). A study of researchers' time management in Norwegian universities and university colleges showed that male researchers without children work the most hours. Moreover, the same study found that much research production is accomplished during evenings and weekends outside ordinary working hours – in other words, time that those with care responsibilities cannot access as easily as those without such obligations (Egeland & Bergene, 2012).

Aiston and Jung (2015) nevertheless claim that the significance of women's care responsibilities is exaggerated, indicating that other structural explanations, such as the distribution of working hours or the design of the research production process, have been underestimated. Other studies' results suggest, for example, that some of the differences can be explained by the fact that men are older, and hold higher academic positions than women, and that those in higher positions are more productive (Nygaard et al., 2022a; Rørstad & Aksnes, 2015; van den Besselaar & Sandström, 2017).

Feller (2004) maintains that we must distinguish between bibliometry and the academic system in discussions of the causes of gender-related publication differences. According to international research, the academic system is not gender neutral – for instance, women have a lower chance of promotion than men, which in turn affects differences in productivity (Mairesse & Pezzoni, 2015). Nor do women and men have the same access to time and resources related to research and publishing (e.g., Addis, 2004; Aiston & Jung, 2015; Vetenskapsrådet, 2021). Feller (2004) argues, therefore, that gender-neutral bibliometry is gender discriminating in itself. There are also studies showing that a bibliometric system can reinforce gender differences in publishing by valuing publishing practices differently. If the system, for example, awards extra points for international author collaborations, the difference in publication points between women and men increases (Nygaard et al., 2022b).

In this chapter, we take a look at women's and men's publishing practices at the Faculty of Mathematics and Natural Sciences (MN) in the University of Oslo, with position levels and other variables taken into consideration. The question for discussion is whether there is a "gender gap" in academic publishing. First, we describe our results. Since we had a large amount of empirical material containing many variables, we were able to explore the connection between the numbers of publications and, for example, position level, career ambitions, and the portion of working time set aside for research. Many available studies have not included such variables, meaning that we can examine the field from new angles and pose new questions. In our study, we have applied a multivariable analysis. This resulted in a model made up of factors influencing publishing in the natural sciences. In the latter part of the chapter, we discuss this model in light of other research.

What Affects the Number of Publications?

As mentioned, it is commonly thought that gender affects publication rates, and that women publish less than men. Our empirical material was gathered from a questionnaire survey sent to all employees (N = 843), and from interviews with researchers on various levels (N = 85). The data in the employee survey are based on researchers' self-reporting the number of their publications during the past two years.[2] The survey contained three questions on publishing. They include the number of peer-reviewed articles published by the respondent during the past two years as either single author, first author or co-author.[3] Based on actual figures (from UiO) for publishing, we have reason to believe that this self-reporting is relatively realistic. A most likely subjective discrepancy is that researchers report more articles than what they actually published, that there is a "bragging factor". However, we did not find any clear indications of this – the analyses led to roughly the same results whether we included all respondents or removed the group with the most chance of "bragging" – that is those with a very large number of articles, especially as co-authors.

At first glance, it may appear that our study's empirical data confirm the hypothesis that women publish less than men. The figure below shows a moderate association between gender and publishing (all types of articles). More women publish little, and more men publish a lot.

So what has the strongest effect on publication rate? Or, more precisely, where are the strongest associations? The employee survey shows a surprisingly low correlation between published articles in the past two years, and the number of hours spent on professional work in the past week. The correlation is low for women, and even lower for men. It seems that investing in more working hours per person, or reinforcing a culture of long working hours, is not a good strategy for increasing one's publication rate.[4]

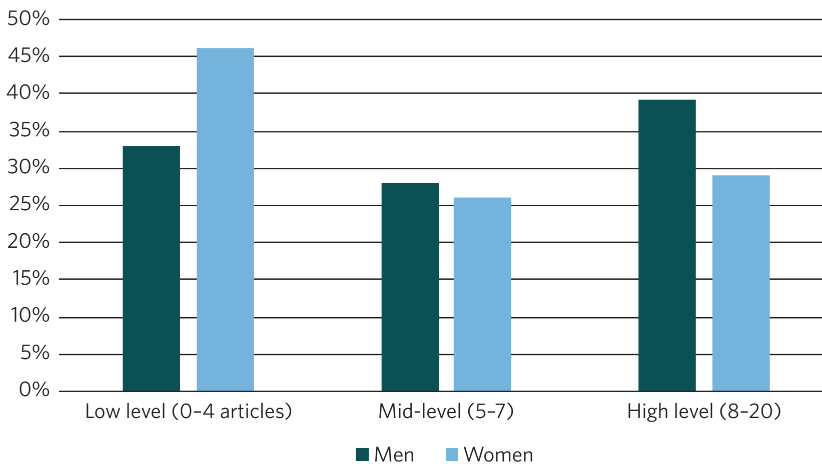

Figure 4.1. Publication Rates During the Past Two Years, by Gender. The figure shows how many publications to which the researchers have contributed in the past two years (self-reporting). The publications are categorized from low to high levels, the columns showing the proportion of women and men in the individual categories. Source: FRONT employee survey (N = 379 academic employees).

However, we see that position level is clearly associated with publication rate. The figure below shows how the publication rate increases with position level.

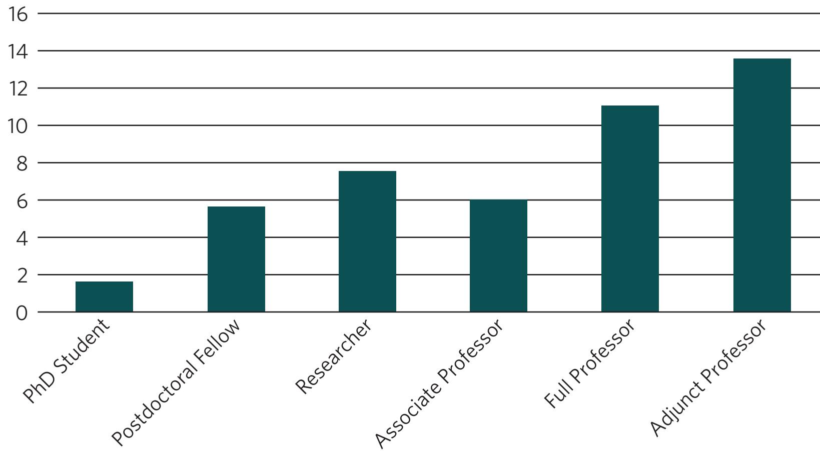

Figure 4.2. Number of Publications During the Past Two Years, by Position Level. The numbers show how many publications the researchers report having contributed to (self-reporting). Source: FRONT employee survey (N = 407 academic employees).

The PhD students publish primarily towards the end or after their candidate period. Thus it is not surprising that the rate appears low here. Furthermore, we see the rate roughly doubling towards a high position level. This is not surprising either, as publication rate is an important criterion for moving up levels.

As mentioned, this is based on self-reported figures for publishing. It is possible that the top levels slightly overreport (what we call the bragging factor). The publication rate in the figure applies to all types of publications – single author, first author and co-author – in an index counting all types equally. It is possible that the statistics for the top level are somewhat affected (or inflated) by large groups of co-authors. For instance, professors might, in their role as leaders of research projects, often contribute as co-authors. For these reasons, the impact of the position level may be slightly exaggerated, both in our analyses and in the figure above.

Other factors affecting publication rate are: achieved career ambition, academic level, and years of experience in academia. Support from one's supervisor is also important. Our analyses indicate that publishing is a "social" phenomenon and not a "mechanical" consequence of, for example working hours. Those who publish a lot are

for example also often involved in submitting grant applications. Without the one, in and of itself, being seen to cause the other, it is reasonable to interpret this as "associated effects" of underlying conditions.

A New Perspective on Publishing

But what actually decides how much researchers publish? In the previous section, we have seen how much women and men report having published. But is gender the most important variable for publishing? Our material also includes many other aspects of the researchers, such as how they assess their supervision, and who their mentor has been. What happens when we include these variables in the analysis?

We explored this in two phases. First, we looked at how all the variables in the survey were associated with the publication rate for different types of articles, through pairwise analyses. We then selected the most important variables and analyzed these further through multivariable regression.[5]

The pairwise analyses showed that several variables were clearly associated with publishing, including: position level; the portion of working hours spent on research; number of years as a researcher; and assessment of PhD supervision. Many variables, including parents' education level and unit/department, were not clearly or significantly associated. Achieved career ambition was clearly associated but is probably more of an effect than a cause of publishing.

The main result from the pairwise analyses was that gender did not enter the picture as a significant factor in explaining publishing. But was this correct, or was it perhaps spurious? In order to find out, we followed up with other types of analyses. The multivariable analyses showed approximately the same result, however. Gender did not appear among the most important associations or causal factors, based on explorative regression analyses. Working hours entered the picture a little more clearly than in the pairwise analyses, but overall the results were very similar.

An analysis is shown here (with standardized beta values).

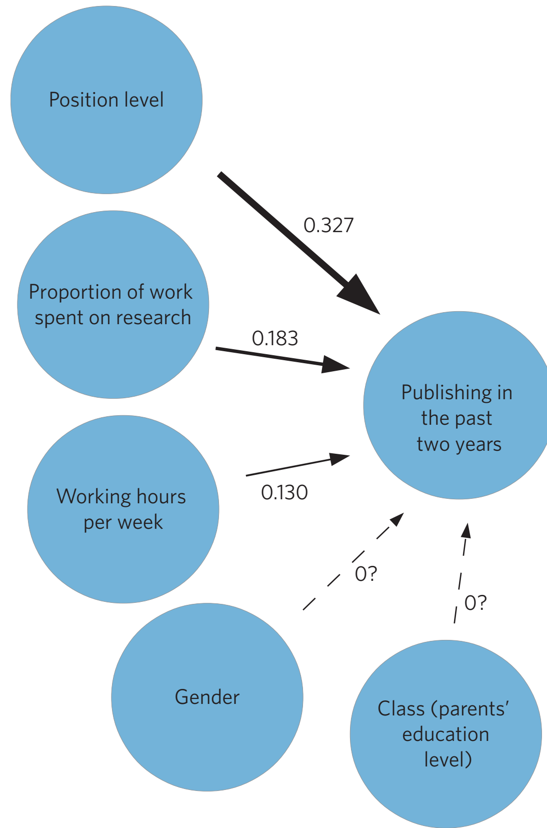

Figure 4.3. Factors Associated with Publishing, by Strength (the arrows represent beta-values in a regression analysis). Stippled arrows and question marks are used for unclear effect. The figure applies to total publishing (single author, co-author, etc.). Source: FRONT employee survey (N = 623 academic employees).

The Figure shows associated variables (possible "reasons") why researchers publish a lot. The researcher's gender (and class background) seems to be of little importance when corrected for other variables.[6]

Position level is clearly the most important factor, having a strong connection to publishing. On a more moderate level, two features related to working hours come into play. The quality of time, that is the portion of time spent on research, is more crucial than the quantity (working hours per week). When position level and the other "structural" variables are included in the analysis, ambition level is less crucial.

We also ran the analysis separately for each gender. The result for women was that five variables are at work in regard to publishing: position level

(beta 0.357); the proportion of time for research (0.278); weekly working hours (0.255); ambition (0.213); and parents' education level (–0.141). The same analysis among men provided a model with four variables: position level (0.364); parents' education level (0.182); the proportion of time for research (0.111); and weekly working hours (0.105). Here, ambition was excluded.

A consistent major finding is that gender is of relatively little importance. This is confirmed across various statistical analyses. The correlation between working hours and publishing is relatively moderate, 0.176. If we include gender, hardly anything happens (partial correlation 0.175).

Leave of Absence

In the employee survey, we have also looked more closely at taking parental leave and leave in connection with family or care needs. Neither has a clear effect on publication rate, even though longer periods of parental leave have a slightly negative effect for women. The reason why this has only a weak and unclear effect is perhaps primarily that the survey did not have the same time limitation for these questions. The questions on publishing included the past two years, whereas the questions on leave included one's entire career.

In order to test this, we looked at publishing among younger participants, whose periods of leave were closer to the past two years. But even here, we found no clear correlation between time spent on parental leave and (lower) publication rate, neither for men nor women. In other words, we do not see any clear indications that use of parental leave reduces publication rate.

At the same time, the FRONT material shows that many, especially women, experience problems when they return to work after care leave (see Chapter 1). It may seem as if the *actual* publication rate is less affected by leave than assumed – while leave, especially for women, nevertheless appears to be a burden, and causes difficulties when one returns to work.

These results are surprising and must be described as preliminary, since the time periods are still different, and since we have not asked

detailed and in-depth questions about leave. However, they may be interpreted as an indication that the notion that leave necessarily *must* have negative effects is ripe for revision. It may be that leave is "more neutral" in terms of publishing than previously presumed. Findings from working life studies show that use of leave (and gender-balanced use) can be important for innovation and development (Holter, 2007; Puchert et al., 2005; Scambor et al., 2013). Leave may engender new impulses and more quality – also for researchers. At the same time, we have a lot of material showing that leave is *experienced* as a burden, particularly by women, not because there is anything wrong with the period of leave in itself, but because women experience problems returning to work after this period (see Chapter 1; Thun, 2019).

When Is a Point a (Good) Point?

That publishing and the number of citations are essential parts of a researcher's reality is also evident in the interviews. Cecilie, a female postdoctoral fellow, describes the ideal researcher in this way: "A typical top researcher within my discipline, you publish a lot, and often in high impact journals." Heidi, also a female postdoctoral fellow, says the certainty that she had good publications was what made her decide to remain in academia after completing her PhD. "Because you know how tough it is to get a position, but everybody thought I had a good chance of making it. So it was also very … I wasn't really hesitant myself, it was … everything worked out well, I had a number of good publications, and it was a natural choice to do it. Yeah." Despite difficulties getting a permanent position, both Heidi and her supervisor thought she would succeed because she had such good publications.

Many of the informants think that the number of publications is given too much emphasis, for example, when allocating research funding, and that publications are the only thing that counts. "At least I feel that often the only thing that counts is publications," says Cecilie, a female postdoctoral fellow. Tone, a female associate professor says the same: "And then, if I submit a CV to the Research Council, and say that I have been a member of such-and-such committees, and

I have contributed to developing my discipline and taught so much, that is something they do not take [into account] … they count the publications." Bente, a female associate professor, confirms the tendency and the notion that teaching does not count, despite being "super important". According to her, merely counting the number of articles is "extremely dangerous".

The informants agree that there is a conflict between research and other duties, such as teaching. Marit, a female postdoctoral fellow, says that she would like to write more articles based on her PhD dissertation, but that she has no time for that now: "I think that, yeah, but I can't do that now when I am in another project and have teaching duties as well, so I think that I have to do it next year." Sigrid, a female associate professor, also describes how teaching takes time she would otherwise have spent on writing: "I spend whatever time it takes on teaching. But of course, that is at the expense of me being able to sit and write. This is detrimental to research, since it does not affect other deadlines, it can't, they are deadlines." Tone, a female associate professor, describes having time for writing precisely as her "greatest challenge". The teaching schedule has priority:

> So it is my greatest, my greatest challenge to take those weeks when I'm not supposed to be disturbed by anything, when my only task is to complete articles that have been lying there waiting for me, I want to get them out there because it will help me. […] and I know that as soon as I'm allowed to concentrate on it fully, I will finish it. There is not that much left. But it is just not done, because every week there are new things that I have to do. So I never get those hours.

Ingeborg, a female professor, also wishes she had more time for research: "I really would love to have time for research, in order to be able to do research outside of holidays and things." Since she has no time for research during her ordinary working hours, she usually writes during her holidays: "One of the journals has a deadline for a special issue after summer, because then you can write something during your summer holidays. […] I sat here writing now in July, and the rest of the family were on vacation."

The informants agree that writing articles happens during evenings, weekends, and holidays. Other duties have fixed deadlines and, therefore, cannot be postponed in the same way as writing. Even though they consider the number of articles to be the most important factor to succeed in an academic career, writing articles only happens when other job assignments are completed. "I work weekends if I have to. And then it is deadline driven, it is often for a publication, I mean articles," says Marit, a female postdoctoral fellow. Siri, also a female postdoctoral fellow, explains that she also writes articles after ordinary working hours: "If you're working on an article, which is due for submission, you often sit a bit longer."

When the interviewees describe the publication system, it becomes evident that they think some articles within certain research areas are easier to write than others. Sigrid, a female associate professor, says: "It is not really taken into account that it actually takes time. Because within some areas it doesn't take that much time, perhaps the experiments are done quickly, and then you can just spit out an article. Whereas other things take longer to finish. And this is not taken into consideration."

Another problem discussed in the interviews is the different publication practices within different disciplines and research groups. This makes it difficult to assess competence based on the number of published articles. Anna, a female associate professor, says that some researchers have many publications because they belong to a big research group "in which they are [listed as co-authors] on all the publications written within that group."

The interviews describe who should be listed as authors of articles as a matter of negotiation. Heidi, a female postdoctoral fellow, says: "Even though … the rule says in fact that you are only supposed to list the names of those who actually contribute to the research work, those who write the article. But I can easily say that this is often not the case." This is a problem for Heidi. She is a postdoctoral fellow and needs to show independence in her research, in order to apply both for research funding and positions: "I'm a postdoc, so I need to be independent of my supervisor, autonomous. So …." But publishing is also important to her former supervisor, and in many disciplines it is common that the person who received funding and leads a project is also listed as an author on all

publications within the project – regardless of whether they have actively participated in writing the article itself. Heidi says:

> There seems to be a convention here that the project leaders are listed last on the publication, which implies that, yeah, they are the boss. And in that way, it seems as if the first is the most important, and the second might perhaps also be a little important, and then all the names between the last two and the first two actually mean very little.

Heidi says she originally wanted to take some of the co-author names off one of her articles. But when she asked some of her colleagues, they advised her against it:

> Because you put yourself in a kind of unfriendly situation if you do. You are very dependent on what the bosses think. And if the boss does not get his name on a publication, he might perhaps interpret that very badly. And the others could become your boss on other projects.

Jorunn, a female postdoctoral fellow, says that the senior researchers in her research group are very "all right" about not being listed as co-authors on all her publications. "They don't have to be part of all the publications, and … when you're applying for projects to the EU, for example, you have to show independence, right. I think they are very … they have been very all right."

Senior researchers also describe how author crediting is a matter of negotiation. According to Sigrid, a female associate professor, there is a balancing act between building one's own career, and at the same time helping the people she supervises on the way to their careers as researchers:

> So I've also been honest and said to him, "Right now I am dependent on the articles that you come up with, so you will be the first and I will be the last author," because that means … in our field being the last kind of means that you're senior. But after that, he must be allowed to be the last author, and that is simply to let him build his career. And in a way, that is not smart of me, but I know it is good for him.

Our interviews show that writing articles often must give way to other tasks – despite the fact that the informants consider a large number of

publication points to be the key factor in having a successful career as a researcher. Teaching, supervision, applications for projects, and many administrative tasks normally have fixed deadlines, and therefore have to be prioritized before writing articles. Therefore, writing often takes place outside of ordinary working hours, or during weekends or holidays. Many interviewees maintain that the number of published articles is emphasized too much, both when it comes to the allocation of research funding, and in appointment processes. Different publication practices, where author crediting is not only reserved for those who have actually written the articles, means that the number of published articles is not always a reliable measure of real research competence. Article authorship is often a matter of negotiation, where senior researchers' need for publications is weighed against younger researchers' need to demonstrate independence.

Discussion

Our analysis shows that women and men publish roughly the same amount, at least based on self-reporting, when other factors are included in the analysis. When testing for a wide set of variables that may influence publishing, two stand out from the rest – position level, and the proportion of working hours spent on research. Women and men are decidedly unequally distributed in the position hierarchy at the faculty, with an increasing gender imbalance from the PhD level up towards the professor level. Our study also shows clear gender differences in the proportion of working hours spent on research among associate professors and full professors.[7] We thus see that what appears, at first glance, to be a gender difference is instead a difference in working conditions. Women publish less because they find themselves in lower or weaker positions and have less time for research. When we correct for this, and analyze women and men in the same situation, the gender difference disappears.

We also find that publishing and publication points are central, but also often controversial topics in the researchers' everyday lives. This is evident from the interviews. There is a clear tendency that a point is not "just" a point. It is subject to different assessments depending on context.

Different disciplines and research groups have different opportunities and routines for publishing, which are not taken into consideration when only publication points are counted. The younger researchers also report requirements that the publication must be *independent.* You cannot just follow in your supervisor's footsteps. Studies show that women, as a tendency, may be less recognized as co-authors than men, which may suggest that it is more important for women than men to demonstrate independence in publications (Sarsons, 2017).

Although prestige and publishing are not the same things, our results show researchers who prioritize publishing highly. "Publish or perish" is part of the mentality, preferably on the high or excellent level. This applies to women as much as men. It appears that publishing increases one's chances to submit grant proposals for research projects (although we do not know for sure what is cause and effect in this context). We know that the chance of being granted research funding increases greatly with publications. As we described, the number of publications is also connected with ambition level, but this effect is not very clear when other variables are included in the analysis, and not even significant in analyses of men. Perhaps ambition is mainly an intermediate variable (leading to more time to write, publish, etc.), rather than a basic causal variable. The interview material generally provides little support for maintaining that the ambition level is lower among women than men.

These are strong and somewhat dramatic results. But – are they realistic? The findings in this chapter show that different factors influence publication rates. The analyses are partly exploratory, and which factors are at work and how strongly they work vary somewhat between the analyses. Nevertheless, the overall tendency is clear: Gender disappears from the multivariate models and does not appear clearly as a separate causal factor.[8]

Our results are not unique. Other recent research controlling for several factors points in the same direction (e.g., van den Besselaar & Sandström, 2017). The significance of gender seems to have been exaggerated, and/or has decreased over time. Recent Norwegian studies also indicate that gender matters less when other variables are included in the analyses, such as

the number of working hours spent on research. Nygaard et al. (2022b), for example, find in a study of publications in Norway that more than half of the differences in productivity can be explained by the fact that women and men are found in different disciplines and institutions, on different position levels, and that men are overrepresented in older age groups.

The fact that a small proportion of researchers publish an extremely large amount also affects gender differences in publications, between men and women (see Kwiek, 2016). Norwegian data (based on the registration system Cristin) show, for example, that a small group of researchers are listed as co-authors of a very large number of articles, so that the 10 per cent most productive researchers account for as much as 43 per cent of publication points. Since this group is highly male-dominated, it pulls the average up (Aksnes & Wenaas, 2021). Moreover, the counting method matters a great deal. If we only count articles in journals, the gender gap is large, but if we include other types of publications, and also other conditions such as position and discipline background, the gap decreases considerably (Nygaard & Bahgat, 2018).

Our results draw attention to the work organization, such as time for research as part of working hours – more than gender or conditions at home. The fact that care leave does not strongly nor clearly affect publication rates negatively is one of the indications of this. Other research also shows that "the family explanation" for women's lower productivity is insufficient (Aiston & Jung, 2015).

Based on the gender gap in career obstacles described in other chapters in this book (see Chapter 5), one might presume that the result would be fewer publications and lower ambition levels. But this is *not* a clear tendency. Instead, women follow up more than one might expect. Perhaps they publish more out of *impatience* in relation to their ambitions, whereas the high number of publications among men seems more connected with being *satisfied* in relation to one's ambition level.[9] When seen in light of the obstacles described in the other chapters, we can perhaps say that women publish "in spite of" and not "because of" the system.[10] "Resilience" may be a keyword here (see Chapter 12).

The analyses in this chapter provide a ranking of conditions that affect publishing, although we cannot always be sure what is cause and effect.

How much, for instance, does the proportion of time for research – when female associate and full professors report less time for research and more time spent on teaching and administration than men – affect publication rate? Here, we have good reason to believe that the effect goes mainly from little time for research to low publication rate, but the effect may also work, to some extent, the other way. Those who publish less are given more "other" tasks.

We also see – here as well as in other places in our study – that class background, measured through parents' level of education, works only relatively weakly (and somewhat differently among women and men). This might perhaps be interpreted to mean that class can work both ways in relation to publishing, and/or that much class-based selection has taken place before the position levels for which we have data. Nor do we see any clear differences based on ethnicity (see Chapter 6). All of this points to the fact that there are conditions here and now, especially relating to work organization and culture, that play a role, rather than background factors in themselves, though these also work indirectly.[11] Social class and ethnicity have an effect, but there is much individual variation within different groups in terms of publication. This variation is linked to the organization, position level, time use, and other factors.

Our study involved questions relating to publishing and included many questions on conditions related to environment and culture, which have not previously been included in the picture. However, the study does not constitute an in-depth examination of the topic. For example, the interview material described researchers who have been assessed in very different ways, based on different peer reviewers and committees. We need more systematic knowledge here. Social-psychological factors, such as ambition level, self-confidence, and gender roles should be better elucidated, as should organizational culture, support, and networks. The analyses in this chapter are a contribution to further research.

Conclusion

Our study shows that the idea that women publish less because they are women must be modified. On average, women publish less than men

because they find themselves in lower or weaker positions, have less time for research, and have less support. When we correct for this and analyze women and men in the same situation, the gender difference disappears. Other recent research has found somewhat similar results. The importance of gender appears to have been exaggerated and has perhaps also decreased over time.

The main result from the analyses of the employee survey and the interviews is that women and men, when given roughly equal conditions and equal support as researchers, publish roughly the same amount. These findings draw attention to the work organization and the organizational culture, more than to gender issues, or family or home conditions. The fact that care leave does not strongly nor clearly affect publication rates negatively is one indication of this conclusion.

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Notes

1 In Norway, research publications are registered and awarded publication points through the Norwegian Publication Indicator (NPI). These points play a central role in competition for academic positions. See https://npi.hkdir.no/

2 The data reflect the "normal" situation before the covid-19 pandemic, which – according to international reports – had a negative impact, especially on women's publication rates (see Ribarovska et al., 2021; Viglione, 2020).

3 The survey did not ask about publication levels (levels 1 and 2, in accordance with Norwegian standards).

4 This applies to the total amount of working time. The portion of this that can be spent on research is essential, as shown below.

5 The work was carried out in collaboration with Åsmund Ukkelberg at the analysis firm Ipsos.

6 The figure is based on explorative regression analysis and does not constitute a causal model (Nishida, 2018).

7 While male associate professors spend 35 per cent of their working hours on research, the figure for female associate professors is only 24 per cent. The difference is also considerable among full professors, where male professors report spending 39 per cent of their working hours on research, whereas the figure for female professors is 33 per cent.

8 The possibility that the results may be spurious are discussed in the appendix "Method".

9 We see a tendency towards a lack of satisfaction in relation to level of ambition to be associated with more publications among women, particularly on the middle-level. The figures are small, however, N = 38 women on the researcher level. Among men, it is slightly more often the satisfied who publish the most, or there is little difference between the groups.

10 Thanks to Knut Liestøl for this formulation.

11 See more about this in Chapter 6 and the appendix "Method". Our material is too limited to allow us to take a closer look at "weak but nevertheless important" background variables. For instance, this applies to the ethnic dimension, including several relatively different sub-groups, but also the class dimension, with different education levels. The point here is simply that some variables form a clear foreground linked to the work situation, so that gender, class, and ethnicity play a relatively minor role.

CHAPTER 5

Experiences in Academia: A New Survey Study

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Abstract: The chapter provides a summarizing review of the main findings of the FRONT project with respect to gender and gender equality on different career levels. The review is based on two surveys, an employee survey with 190 variables and 843 respondents, and a student survey with 79 variables and 213 respondents. Among students, negative experiences are significantly more common for women than men, particularly when it comes to social treatment. Among employees, women experience markedly more challenges involving factors such as negative scrutiny, unwanted sexual attention or partners whose careers were given priority. The data also reveal differences in several other factors, but these were often moderate. Thus, it is typically a complex process with many components, resulting in an "accumulated disadvantage" for women. The differences were found on all career levels but with a clear tendency towards more challenges for women on higher levels. The observations from FRONT are discussed in light of other studies, a main conclusion being that the situation is surprisingly similar in different countries.

Keywords: gendered differences, academia, experiences, career, culture, work environment

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Introduction

Do women and men experience that they have roughly the same opportunities and challenges during their careers or are there major differences? Is there a gender gap in basic experiences within academia? Previous chapters have described gender differences in specific areas, such as views on gender equality, experiences of harassment or opportunities to publish. Is it only in some particular areas that women's and men's experiences of the work environment and organizational culture differ, or is there a general tendency, a pattern? If so, what does this pattern look like? In this summarizing chapter, we take an overall look at differences and similarities in women's and men's experiences, and review results from different areas.

The chapter builds on various types of material from the FRONT project, but primarily on two quantitative surveys, an employee survey with 190 variables and 843 respondents, and a student survey with 79 variables and 213 respondents.[1] These surveys were developed in order to identify challenges and problems with regard to career development, gender balance and gender equality. They included a wide range of questions concerning choice of career, supervision, social environment, academic culture and collaboration with colleagues, in addition to questions on topics such as unwanted sexual attention and harassment. The data material should therefore provide an opportunity for a very comprehensive mapping of gender differences, gender balance and gender equality in a broader sense.

In this chapter, we present a systematic review of the results from the FRONT project relating to gender and gender equality on different levels in a career. We begin by describing women's and men's experiences on the lower, middle, and higher levels. We then compare our results with two similar questionnaire surveys, one from Ireland and one from the United Kingdom. Finally, we discuss the results in light of other research.

The Gender Gap on the Student Level

The student survey was limited to master's students within a few disciplines in the natural sciences (48 per cent from the master's programme in information technology, 33 per cent from biological disciplines, 7 per cent

from physics, and the rest from other disciplines). It is not strictly representative, but it provides a feasible picture of the conditions among students at the faculty.[2]

Responses to questions about gender and gender equality were, in some cases, relatively similar among female and male students (as mentioned in Chapter 1). The large majority *agreed* with the statement that work and caregiving should be equally divided within the family, and most of the respondents *disagreed* with the statement that gender equality has come far enough.

The biggest gender difference emerges in the experience of having been poorly treated in the degree programme, either socially or academically. The survey posed the question, "Have you experienced negative academic treatment from peers/fellow students in your Master programme/group?" and a similar question on negative social treatment.

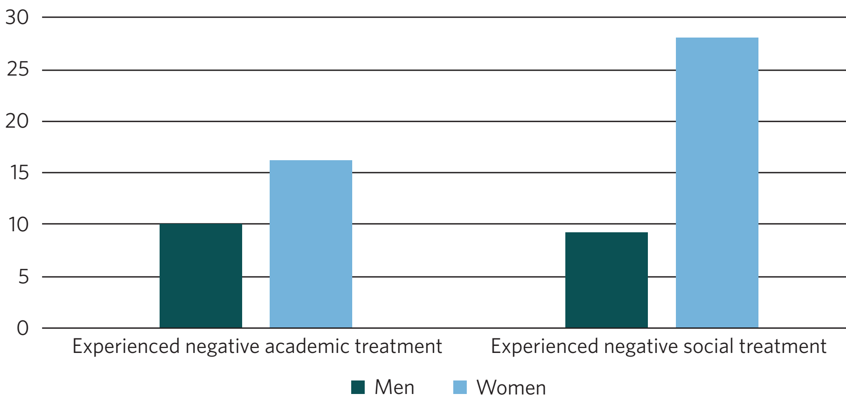

Figure 5.1. Experience of negative academic and social treatment, by gender. The questions asked were: "Have you experienced negative academic treatment from your peers/fellow students in your Master programme/group" and a similar question concerning social treatment. The figures are given as percentages. Source: FRONT Student Survey (N = 213).

Figure 5.1 shows the proportion (in percentages) of those who have experienced negative academic and social treatment. We see how such negative experiences are considerably more common among female than male students, and that the gender difference is quite substantial in relation to social treatment. Women report having experienced negative social

treatment from fellow students three times as often as men. This result indicates that problems or obstacles affecting women in particular are more "social" than "academic" on the student level.[3] The results reveal an overwhelming majority of women among those who experience negative treatment. More detailed questions, as described below, show that most of the problems stem from fellow students, but also from other groups. Generally, questions about academic well-being achieve a higher positive score from students than questions about social well-being.

The students report academic and social downgrading not only by fellow students, but also by lecturers and others. Negative attention, social or academic, was connected to both lecturers and supervisors (14 per cent), and to fellow students (18 per cent). However, only a small proportion (3 per cent) answered yes to a more direct question of whether they had "experienced that lecturers or advisors have treated male and female students differently", in the sense that one gender was treated better than the other.

On questions about whether they feel at home in the degree programme, 56 per cent responded that they feel at home socially, compared to 65 per cent who felt at home academically. In addition, 63 per cent of the women felt at home academically, compared to 67 per cent of the men. We also found a tendency for students who do not feel at home in the degree programme to have mothers with lower educational levels (see Chapter 6).

A similar gender difference in men's favour emerged for other questions in the survey. Often, the tendency is not that strong, and it does not always constitute a "gender gap", but it is nevertheless clearly visible. This is apparent, for instance, when we look at experiences of gender balance in student groups and learning environments. On questions about what types of student groups the students prefer in terms of gender balance, 24 per cent responded that they prefer a relatively gender-balanced group, 6 per cent responded that they prefer a group numerically dominated by their own gender, and 4 per cent said that they prefer a group dominated by the opposite gender. However, as many as 66 per cent dismissed the question, and ticked off the alternative that gender does not matter. This is in contrast to responses to some of the other questions in the survey

(about gender difference), to which we will return. For now, we observe that two in three students say that gender does not matter.

The survey also addressed the connection between gender and academic hierarchies, with questions on whether the students had experienced certain topics or courses as being gendered (masculine or feminine) and, if so, how this was related to the topic's status. Here, many responded that the topics and courses they followed were neither feminine nor masculine (see more in Chapter 2). At the same time, they said that masculine areas enjoyed higher prestige. Hardly anyone said that feminine areas had higher prestige. The results may be interpreted to imply that the master's students have great faith in meritocracy and gender equality – gender *should* not matter, even though it does statistically speaking – already on the master's level. At the same time, there is a clear interest among students to shed more light on this topic. On questions about whether the master's programme *should* have more focus on gender balance, approximately half of the students said yes, and the rest responded no.

The male students were more positive about the learning environment and the classroom situation than the females. 22 per cent of the women experienced the social environment as not inclusive, compared to only 10 per cent of the men. Also 12 per cent of the women think there is too much focus on competition, compared to 3 per cent of the men.[4]

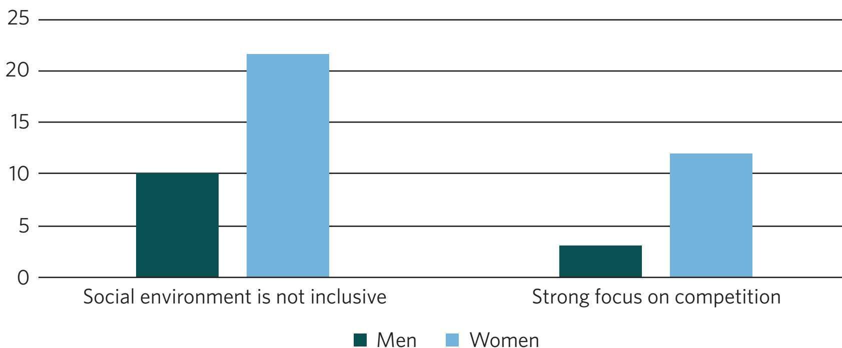

Figure 5.2. The students' assessment of the social environment at the unit/department, according to gender. The figures represent percentages. Source: FRONT Student Survey (N = 213).

Some of the variables relating to the culture in the unit/department show little gender difference, and the same applies to learning outcomes. But on a summarizing question about whether they had achieved academic confidence in the programme, 48 per cent of the male students said yes, compared to 40 per cent of the females. The women also experienced, less often than men, that disagreement is assessed positively (51 per cent compared to 58 per cent).

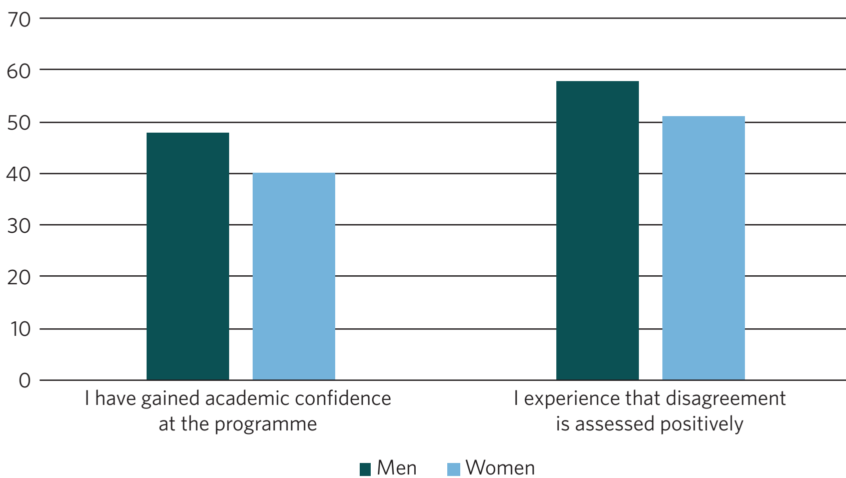

Figure 5.3. Students' assessment of whether they have gained academic confidence in the Master's programme and whether disagreement is assessed positively, according to gender. The figures represent percentages. Source: FRONT Student Survey (N = 213).

Briefly summarized, we can say that the material shows an overall gender difference. Sometimes the pattern is both extensive (many have experienced this) and clearly visible (the gender difference is substantial). One already mentioned example is that 16 per cent of the women have experienced negative academic treatment (often or a few times), compared to 10 per cent of the men. The corresponding figures for negative social treatment are 28 per cent for women and 9 per cent for men. The gender difference is not as big for other variables, but it is visible as a broad and overall statistical tendency across variables. The results provide a basis for using the term "gender gap".

Attitudes Among Students

When female students report greater problems or obstacles than the males, particularly regarding "social" negative treatment, and indicate that this often comes from fellow students, there is reason to ask whether attitudes among fellow students contribute to the problem. We do not have material to elucidate this in detail, but the survey contained variables addressing attitudes to gender and gender equality. In this section, we will take a closer look at how this turned out.

Figure 5.4 shows a common perception among the students, both women and men, that the genders are fundamentally different. There is nevertheless a slight gender difference. Among men, four in ten agree with the statement.

The question was deliberately exaggerated in order to reveal an ideological view, in other words, not just whether men and women are two different genders, but whether this is something "fundamental" that must also be "acknowledged". However, some of the students might have interpreted this in a more straightforward way, simply whether the genders are different or not. As stated in a commentary to this question: "If this were a sociology assignment, I probably would have said no, but in a biology assignment, yes". The distribution of answers may be influenced

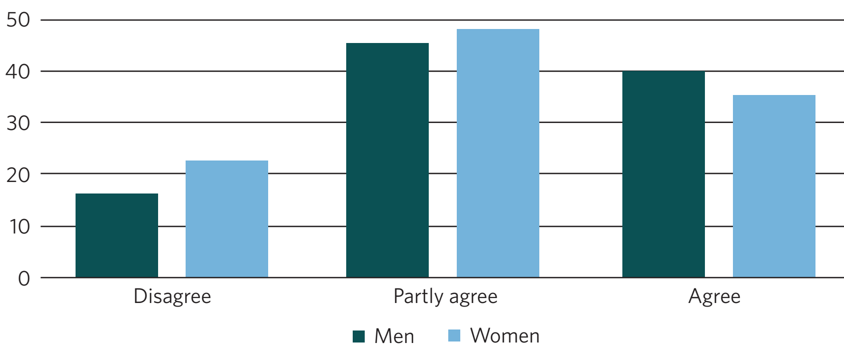

Figure 5.4. The students' assessment of the difference between men and women. The columns show whether the students disagreed, partly agreed or agreed with the statement, "It is important to acknowledge that men and women are fundamentally different". The figures represent percentages. Source: FRONT Student Survey (N = 213).

just as much by such a "literal" natural sciences understanding of the question as by a specific conviction or ideology concerning what gender is or means. Probably, it is a bit of both.

Talent for Research? Experiences of PhD Students

We will now take one step up the career ladder and look at conditions on the middle-level, focusing on PhD students and postdoctoral fellows. The analyses are based on the employee survey, which included the PhD students (N = 623 academic employees). Here, we asked about reasons for choosing a PhD/doctoral career (see Figure 5.5 below). 69 per cent of the men and 63 per cent of the women responded that a "passion for science" was an important reason for choosing to do a PhD. Also, 43 per cent of the men and 31 per cent of the women ticked off that they have "talent" (it was possible to tick off several options on this list).

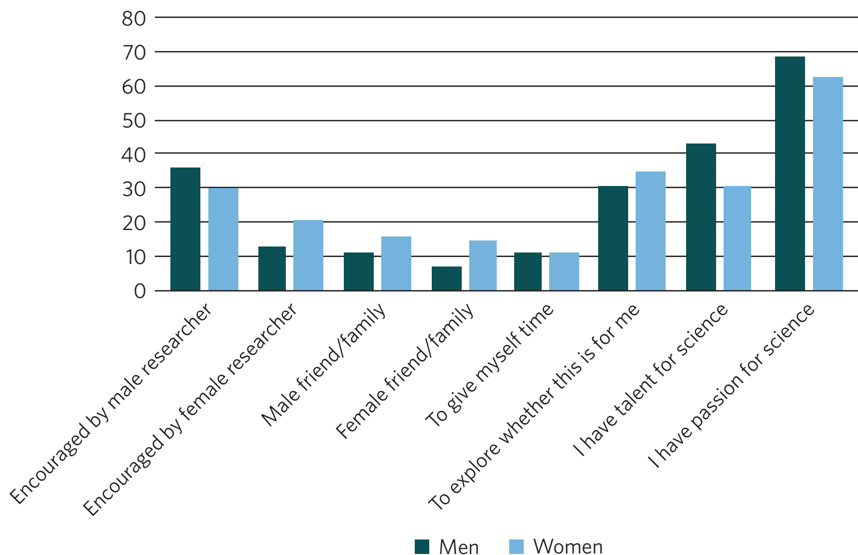

Figure 5.5. Reasons for choosing a PhD/doctoral career, according to gender. The figures represent percentages. Source: FRONT Employee Survey (N = 623 academic employees).

Men indicate approximately 1.4 times more often than women that they have "talent" for research. They also more often respond positively to their degree of "passion" than women. Also men, more often than women, respond that they have been encouraged by men in the academic community. Women have more often been encouraged by female researchers. The fact that more men have male supervisors probably comes into play here (see below, Figure 5.6). When it comes to friends and family, however, women have been encouraged at least as often as men, especially by women close to them. Again, we see a finding that does not correspond to the hypothesis that fathers or other men are particularly important for women in the natural sciences.[5] What becomes clear is that friends/family (of both genders, the same among women) are somewhat more important for women's choices than for men's. The alternative "give myself time" is equal and assessed as low among both genders.[6] The more active formulation "explore whether a career in science was something for me" is more popular, slightly more among women, but again fairly gender-balanced. The pattern thus shows certain similarities across the genders; at the same time, some differences emerge, such as belief in one's own talent.

The PhD students assess their supervision somewhat differently based on gender. The results show that 13 per cent of the women and 9 per cent of the men feel that they were not encouraged by their PhD supervisor to continue and do a postdoctoral fellowship. Also 19 per cent of the women compared to 12 per cent of the men were not introduced to international research networks by their supervisor. In relation to Norwegian research networks, the differences between the genders were somewhat smaller. Here 19 per cent of the men and 16 per cent of the women report having received clear support from their supervisor to apply for a position. There is little gender difference in terms of experiences of academic support and encouragement from their supervisor to publish and present their own work, as well as general academic support from the supervisor. Here, men's and women's assessments are approximately the same. Although we do see a "gender gap" in experiences, this does not apply to all areas, as one would

expect if women were generally more inclined to report problems compared to men.[7] Instead, the gender gap varies based on the questions (described in more detail below).

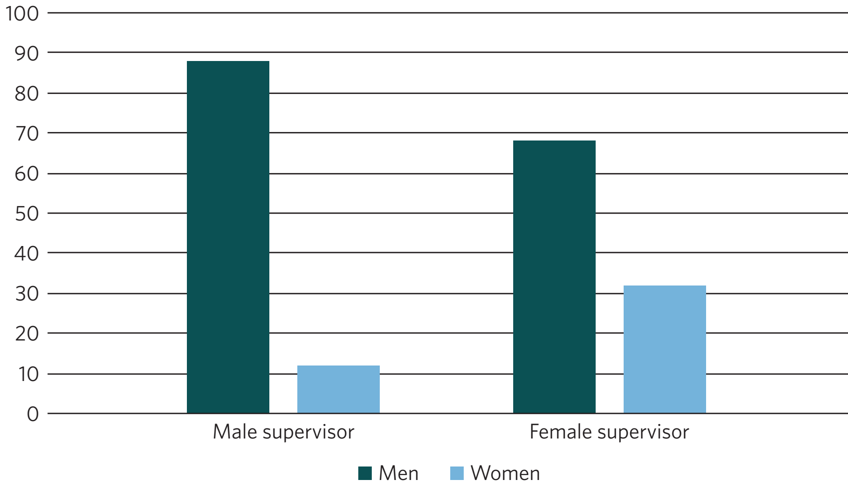

Figure 5.6. Choice of PhD supervisor, according to gender. Source: FRONT Employee Survey (N = 623 academic employees).

As shown in Figure 5.6, the majority of both male and female PhD students have male supervisors, but a substantially higher fraction of women than men have female supervisors. The figure must be seen in relation to the fact that female supervisors are a minority in the faculty. Moreover, it is important to take into account that female PhD students are often in research groups with a high proportion of women. Thus, relatively speaking, many women will get a female supervisor, and men will get a male supervisor even if there is no gender preference for supervisors among the PhD students. We do not know what is most important in this picture, discipline or gender. But we do see a clear gender-divided pattern.

Thus, it is even more interesting that the evaluation of supervision is fairly gender-equal in the material. One might expect the women to be more satisfied if they had female supervisors, and men if they had male supervisors, but instead, supervisors of both genders came out relatively

equally. Female supervisors were assessed as "very good" by 52 per cent (of all the respondents). Similarly, male supervisors were assessed as "very good" by 56 per cent. Finally, 85 per cent responded "very good" or "good", with little gender difference. In fact, the male respondents were slightly more positive towards female supervisors than the female respondents. Of the men with a female supervisor 61 per cent gave a "very good" assessment, compared to 46 per cent of the women with a female supervisor. The assessment of male supervisors was more equal, with 57 per cent of the men and 54 per cent of the women responding that the supervision was "very good".[8]

The PhD level is characterized by many as being a phase of life in which they start a family, and many have children. PhD students, post-doctoral fellows and researchers, who have children and take parental leave, often experience problems returning to work. This pattern affects women more than men. There is a major gender difference on this point. Of the women who had been on leave 30 per cent experienced difficulties when they returned to work, compared to 5 per cent of the men. This was confirmed by qualitative research in the project, where women often talk about problems following parental leave (Thun, 2019). A new study of young academics also shows that it is mostly women who experience such problems (Akademiet for yngre forskere, 2019, p. 22).

We see few signs of women "dropping out" in this phase, for example that the ambition level decreases. On the other hand, we see clear signs that competitive pressure is becoming tougher. For instance, problems with a long hours working culture, and the experience of having to work harder than colleagues in order to be recognized, are most frequent on the PhD level (especially among men). This coincides with an increasing proportion of researchers who start a family and have increased caregiving responsibilities to take into consideration, which still affects women to a greater extent than men. We see a tendency for young researchers – even though they want gender equality – to make adjustments, in practice, that give the man's career first priority (see Chapter 1).

Altogether, the results demonstrate that differences in experiences of the work environment between women and men that we saw at the master student level continue during their time as PhD students. For example, men are more often than women encouraged to do a PhD by a male researcher, whereas women are more often encouraged by a female researcher, and by men or women in their family or circle of friends, although these patterns are not highly gender-divided. Also, men more often than women say that they have "talent" and "passion" for their discipline – and they score higher on self-esteem. When it comes to supervision, the differences are relatively small, but men nevertheless come out slightly better. Gender difference is substantial at one point. Women much more often experience problems returning to work after parental leave than men.

Employees in a Gender-Divided Work Environment

What happens, then, when women and men enter research communities as academic employees, such as postdoctoral fellows, researchers, associate professors or full professors? In this section, we will first look at assessments of the work environment among all employees. Assessments and experiences often have very unequal distributions linked to gender.

Figure 5.7 shows how women and men report some important work environment problems differently. Women experience approximately twice as often as men that they are negatively assessed or scrutinized. They more often have problems with a long hours working culture (it has hindered their career). Moreover, women far more often experience unwanted sexual attention, and somewhat more often bullying or harassment (described in more detail in Chapter 3). Based on all this, it is not surprising that women also more often report problems with their work-life balance.

The women reported twice as often as men that their partner's or spouse's career has been given priority in the past year and were almost twice as often as men dissatisfied with their work-life balance.

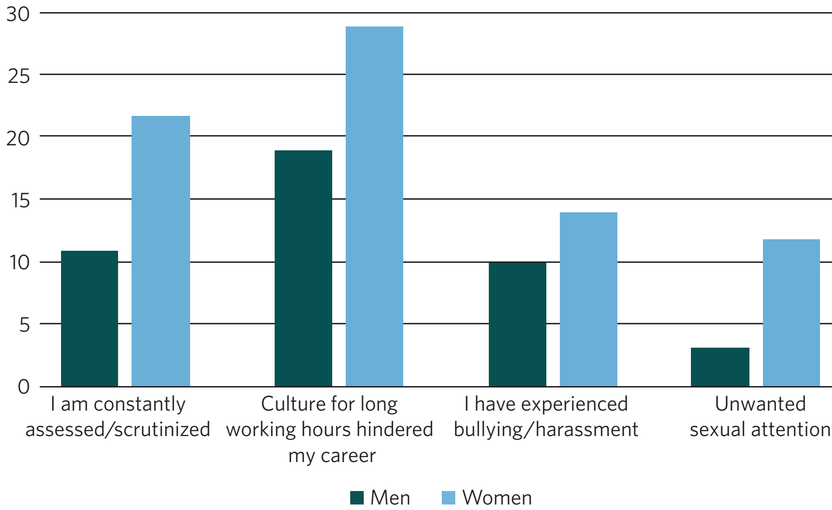

Figure 5.7. Experience of problems in the work environment among women and men. The figures represent percentages and show the proportion of women and men who agrees with the statements. Source: FRONT Employee Survey (N = 843).

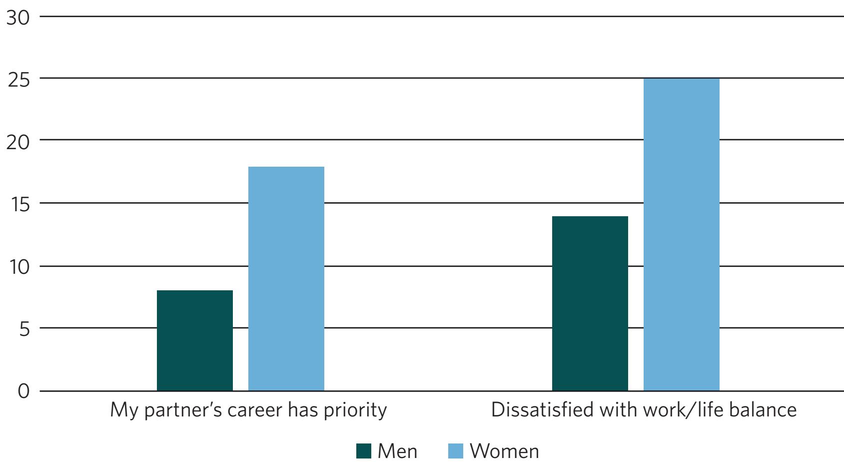

Figure 5.8. Experience of the relationship between family and private life, according to gender. The columns show the percentages of women and men who report that their partner's career was given priority in the past year, and the percentages who were dissatisfied with their work-life balance. Source: FRONT Employee Survey (N = 843).

There is a substantial gender difference in many variables related to problems that have hindered careers (see Figure 5.15). Variables with major gender differences that stand out include: "long hours working

culture" and "absence of role models". In terms of the culture in the department or unit, there are also major gender differences in important variables, including "negative academic attention", in other words, the experience of being constantly scrutinized or judged by colleagues. As many as 24 per cent of the women, compared to 12 per cent of the men, say yes to this (agree and partly agree), as shown in Figure 5.12. One might assume that the proportion of negative academic attention would, to a greater degree, change with position level (decrease towards the top), but figures from the survey show an even distribution across all position levels.

The connection to gender is clear across levels. Women experience negative academic attention more often than men, regardless of level. When it comes to whether you have to work harder than your colleagues in order to be assessed as a legitimate researcher, 24 per cent of the women said yes compared to 15 per cent of the men. The gender difference is significant. And in terms of whether the culture in the department/unit is supportive, only 10 per cent of the women strongly agree, compared to 16 per cent of the men.

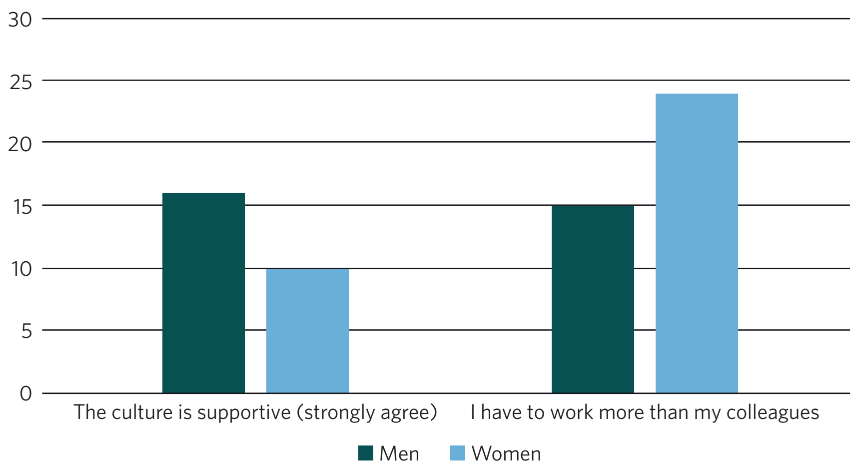

Figure 5.9. Percentage of women and men reporting that they strongly agree with the statement that the culture in their unit/department is supportive and that they have to work harder than their colleagues in order to be assessed as a legitimate researcher. Source: FRONT Employee Survey (N = 623 academic employees).

In the survey, we asked whether the respondents experienced the culture in their department as non-sexist and non-racist. Approximately 80 per cent responded yes (agree or strongly agree) to these questions. If we look only at those who strongly agree, the gender difference is substantial, especially for questions about sexist culture. Of the men, 47 per cent, compared to only 28 per cent of the women, strongly agreed with the statement that the culture in their unit was non-sexist. The women were also more sceptical to the idea that the culture was non-racist. Also 44 per cent of the men and 31 per cent of the women strongly agreed with this statement. Ethnicity and racism are discussed further in Chapter 6.

As we can see, gender differences vary in strength across the different variables, but a general trend is noticeable and becomes particularly clear when looking at the overall picture and the variables combined. 22 per cent of the women compared to 16 per cent of the men think that professional isolation has negatively affected their careers (Figure 5.10). Also 29 per cent of the women, compared to 19 per cent of the men, have had problems with a long hours working culture (Figure 5.7). Finally, 22 per cent of the women and 16 per cent of the men have had problems with colleagues' attitudes (Figure 5.11). The graphs below show excerpts from the pattern of additional burdens for women. Individually, the factors may not seem very strong, but together they are likely to have a strong impact.

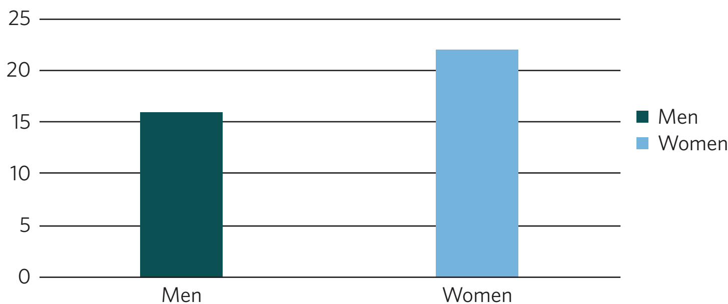

Figure 5.10. Percentage of women and men who agree with the statement "Professional isolation has negatively affected my career". Source: FRONT Employee Survey (N = 623 academic employees).

The same pattern emerges in relation to colleagues' attitudes.

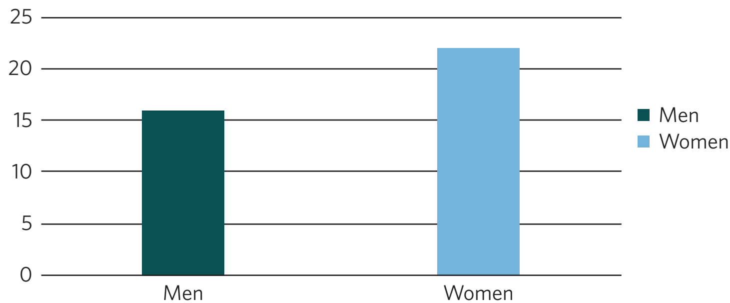

Figure 5.11. Percentage of women and men who say that they have problems with their colleagues' attitudes. Source: FRONT Employee Survey (N = 623 academic employees).

Problems on Different Levels

In this chapter, we have presented the results on three main levels of the career ladder – master students, doctoral students and employees. In this section, we will take a closer look at the position levels among employees.

Figure 5.12 (below) shows the extent of six important work environment problems in the employee survey, broken down by position level and gender. It shows the proportions of men and women experiencing the problem on each level.

The columns in the figure represent percentages of men and women, divided into four position levels, relating to six work environment problems (they "strongly agree" or "agree"). The material should be interpreted with some caution due to low numbers in some categories.[9] However, the figure nevertheless says something about various burdens and problems, based on position level and gender, as they appear in our material.

The most common problem among the participants in this analysis is the problem of a long hours working culture that has hindered their careers. The figure shows that the problem of a long hours working culture is relatively substantial, meaning frequently reported, compared to the other problems. Furthermore, we can look at the gender distribution on each level and see how great the distance is between

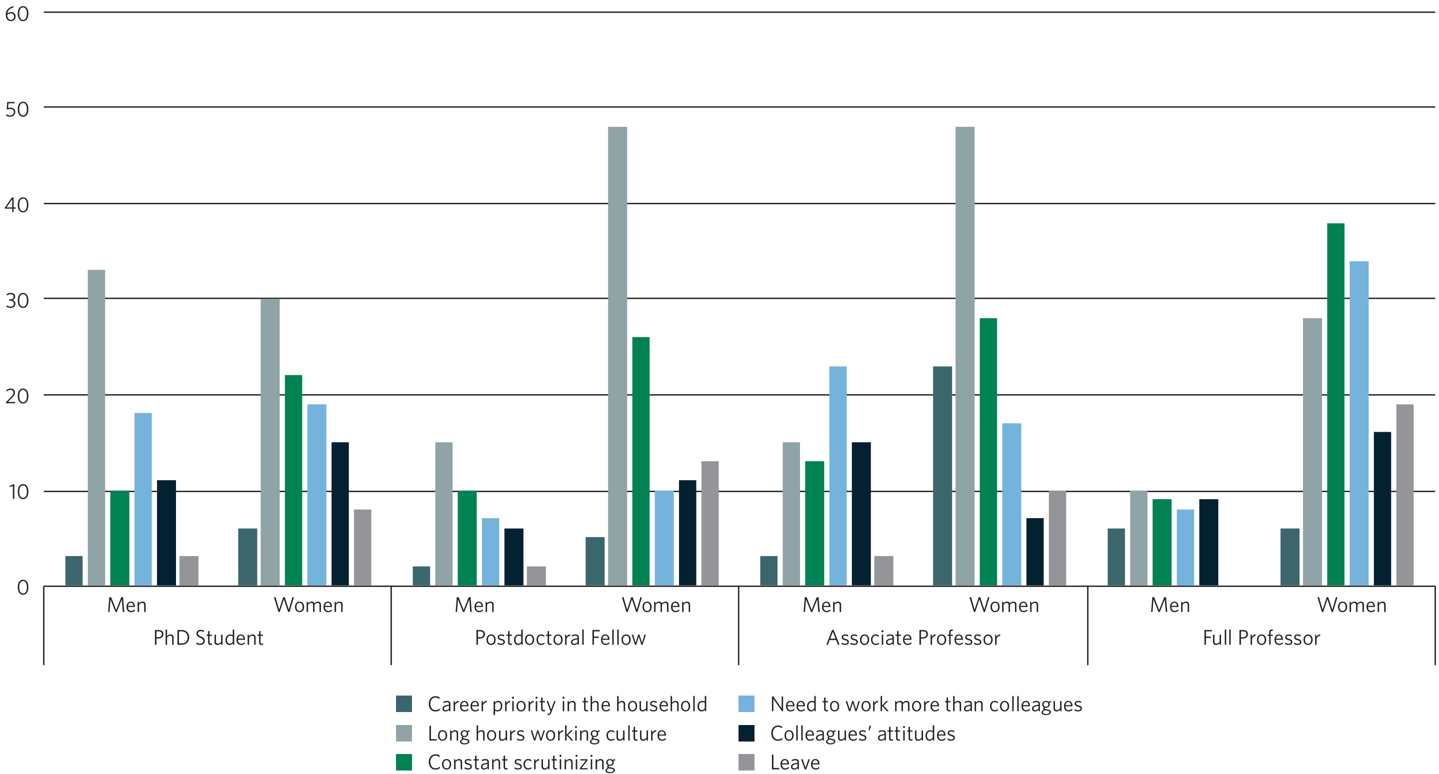

Figure 5.12. The extent of work environment problems, according to position level and gender. The columns refer to the percentage among men and women, divided between four position levels, who "strongly agree" or "agree" with six work environment problems. Source: FRONT Employee Survey (N = 623 academic employees).

the columns for men and women. The figure shows that the problem of a long hours working culture is relatively gender-equal (small gender difference in reporting) on the PhD level, but it becomes more unbalanced on the postdoctoral level and the associate professor level. The extent of the problem increases, and the gender gap also increases.

The second most common problem is constant scrutiny. This problem is also fairly consistent across levels, but the gender difference increases at the full professor level.

The third most common problem is having to work more than colleagues in order to be recognized. Here, gender differences in the responses are small on the PhD level, and somewhat mixed on the next levels, while they are considerable on the professor level. On the associate professor level, men report this problem more often than women – one of the relatively rare cases of "inverted" gender gap in our material (gaps to the detriment of men, see also Chapter 6).

The problem of colleagues' attitudes also shows greater gender differences on the professor level. Overall, the gender gap is larger towards the upper levels.

Figure 5.13 (below) shows the gender gap in terms of women's problem reports compared to men's reports, in percent. The men's problem counts as 100 per cent, so 200 per cent means that women report the problem twice as often as men. It thus indicates how "gender specific" these problems are, but not the extent of the problem for the two groups. A larger gender gap means a more gender-specific problem.

The figure shows that the problem of career priorities in the household applies particularly to women on the associate professor level. This is where gender differences in problem reporting are greatest for this specific variable. The analysis *indicates* patterns, but as mentioned, small samples for some position levels may come into play. The figure shows how gender differences relating to problems with parental leave increase up to the postdoctoral level before they decrease slightly. Gender differences in relation to constant scrutiny, which is a clear

component of academic devaluation in our material, are substantial on all position levels and increase towards the professor level (where one might perhaps expect both genders to feel more comfortable once they achieve this position – but this does not seem to be the case). Nor does the competition factor, "have to work harder than my colleagues" end up more gender-equal at the top level – instead, the gender gap is largest here.

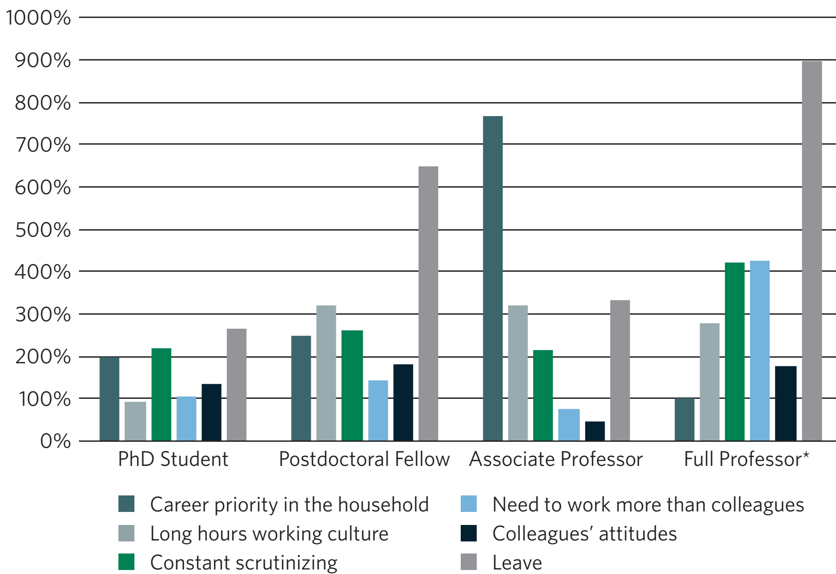

Figure 5.13. Gender difference in reporting work environment problems, according to position level. The figure shows women's problem rate in relation to men's rate (set at 100 per cent). Two hundred per cent indicates that women report the problem twice as often as men. Source: FRONT Employee Survey (N = 623 academic employees).
*The column for problems with leave is not precise at the professor's level due to limitations in the data material (19 women but no men reported this).

Figure 5.14 (below) presents the same information as a line graph. Here we see even more clearly how the gender gap changes towards top position levels.

The gender gap in problem reporting is seen for all position levels. Moreover, when averaging out the fluctuations caused by moderate group sizes, a clear trend towards a larger gender gap is seen for the top levels. [10]

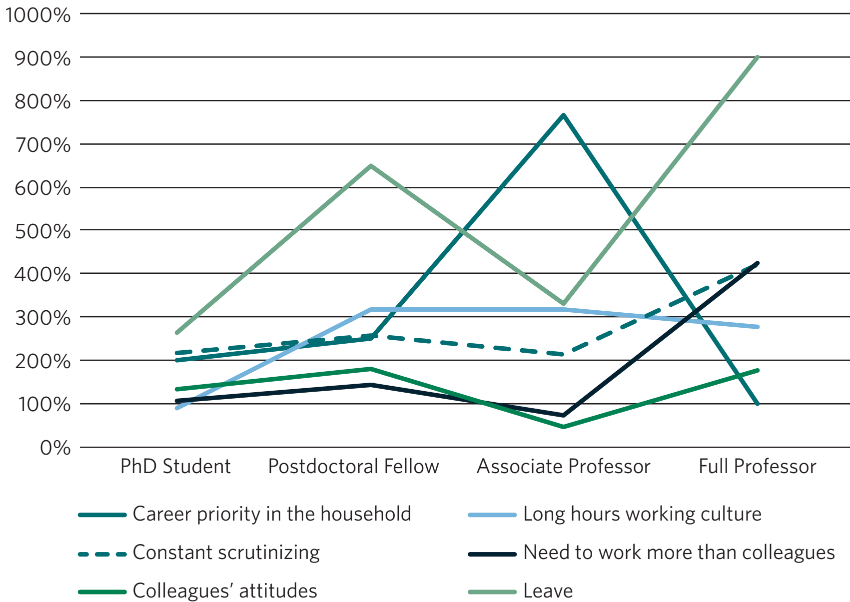

Figure 5.14. Gender differences in reporting work environment problems, presented as a line graph. The lines show women's rate of problems in relation to men's, according to position level. The figures are calculated to be the relationship between the frequency of the problem among women as a percentage of the frequency among men. Source: FRONT Employee Survey (N = 623 academic employees).

The Gender Gap: An Overall Analysis

Figure 5.15 summarizes differences between women and men among academic employees in terms of career problems related to environment and culture.

The list is ordered according to importance, with variables having a large gender gap at the top. Here we see how gender difference is very large for some variables on top and smaller down the list. The list does not show the extent of the problem, but it shows women's reporting relative to men's. A problem having more than 200 per cent on the list indicates that women experience the problems more than twice as often as men.

Approximately two-thirds of the environment and culture variables in the survey have clearly visible gender differences. Some of these are major differences, where women are involved more than 150 per cent more often, whereas some are smaller, down to 110 per cent. The strong

connections at the top of the figure confirm the image of a "gender gap" at the same time as we see the breadth and variation in gender differences, with increasingly gender-balanced reporting down the list.[11]

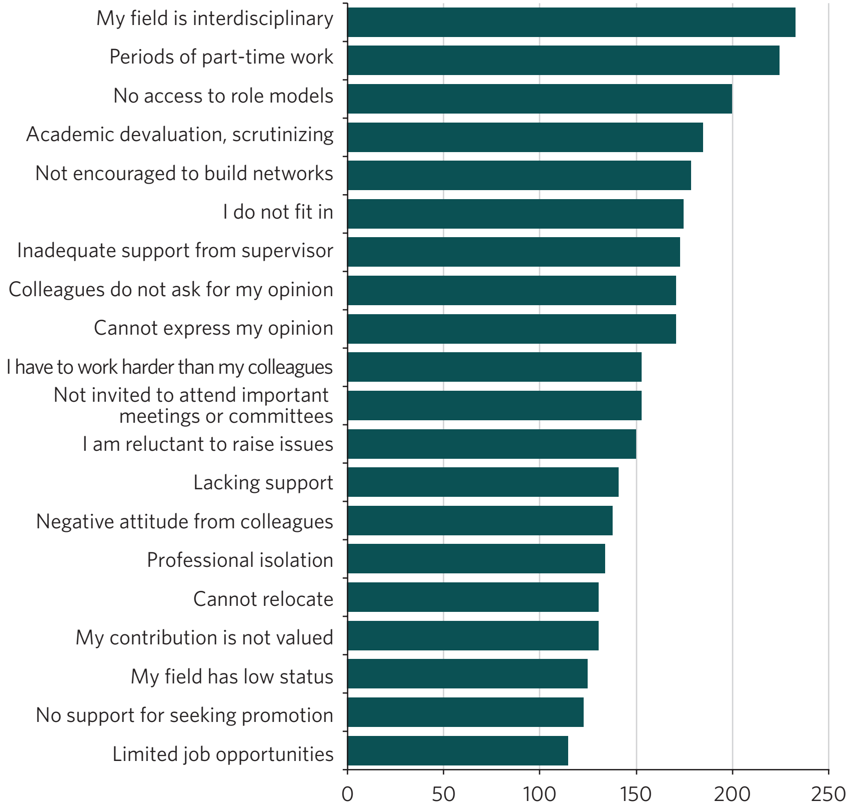

Figure 5.15. Women's reporting of problems with environment and culture, calculated in relation to men's reporting, in percentages (men's reporting = 100 per cent). Source: FRONT Employee Survey (N = 623 academic employees).

Figure 5.15 presents an overall picture of the gender gap in the material. Other variables could be added, some of them with a large gap, like problems after a leave from work. The figure illustrates the gender gap as a wide tendency across variables from many areas, differing in strength.

Overall, the questionnaire surveys among students and employees show that women and men have different experiences, and that women report greater problems with regard to environment and culture than men do.

Could this result be spurious or misleading? Could the question formulations and the survey angle have contributed to a predominance of "critical women" among the respondents? That is possible, but we do not see any clear signs of this – we have only a weak overrepresentation of women (the employee survey). The problems in the questions are formulated in a gender-neutral way, and do not imply or require any particular connection to gender or gender equality. Moreover, we see that women are *not* more critical than men in a number of important areas (such as supervision), and in variables where they probably could have reason to be, such as satisfaction with salary level. Based on our results, women and men respond mainly "realistically". The gender gap we see in the figures in this chapter is, by all accounts, real and not a "reporting problem". Other crucial variables strengthen this picture through the fact that we see major gender differences in the answers. For instance, this applies to social and academic discrimination among students, sexual and other types of harassment, problems following parental leave, and the experience of academic devaluation (among employees).[12] Questions concerning material and method are further discussed in the appendix, "Method".

How Typical Is the Gender Gap?

The material we have presented offers a detailed empirical picture of women's and men's different experiences of the work environment and culture. The picture rectifies the idealized image of a purely meritocratic university. In the project's research group, we were surprised by the breadth and extent of the gender gap in the results from the two surveys compared to the official Norwegian image of gender equality.

Yet the material comes from one faculty – the Faculty of Mathematics and Natural Sciences at the University of Oslo. How typical is this for academia in general? Is the situation at the MN Faculty special or representative for UiO? Are the patterns similar or different at other faculties? Is the situation special or representative compared to other European universities? Does other recent international research support this new picture? In this section, we begin by looking at similarities and differences between the faculties at UiO before moving on to a European comparison.

The figure below shows the proportion of women in different position levels at five faculties at UiO. The graphs are somewhat different for the faculties, but the main pattern is the same.

Based on our analyses of gender balance and position levels, the situation at the MN Faculty is relatively representative of UiO. All the faculties have a clear underrepresentation of women on the top level. What separates them is differences on the lower level (PhDs) and where on the career ladder we find the reduction in female percentages, as shown in Figure 5.16.

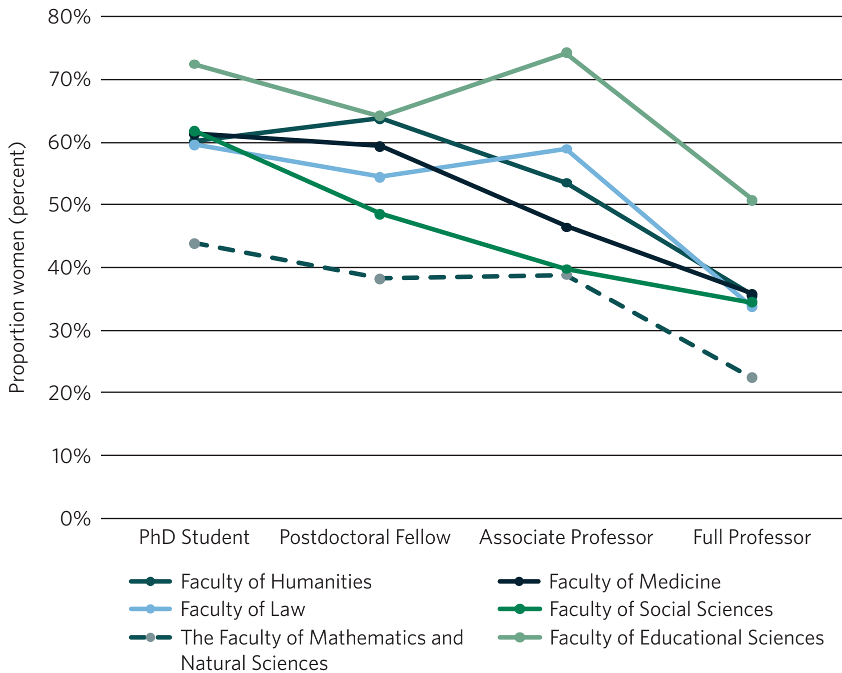

Figure 5.16. Percentage of women in different position levels at five faculties at UiO (the dotted line shows the MN Faculty). Source: Database for statistics on higher education (DBH): work-year at UiO 2020.

We do not have systematic gender-divided data relating to experiences of the work environment and culture across the faculties. The material we have indicates some common main features, such as increasing imbalance (numerical male dominance) towards the top,

whereas other features vary. The extent of sexual harassment among students is lower at the MN Faculty compared to other faculties at UiO, according to figures from the large national student survey SHoT, which focuses on students' health and well-being (SHoT, 2018). These figures are not divided by gender, and it is conceivable that different gender proportions within the different faculties' student groups come into play.[13] A survey among students at the MN, SV and UV faculties showed many common features with regard to gender and gender equality (Thun & Holter, 2013). International research on the natural sciences is also characterized by common features that apply to academia in general, and some features that are distinctive to the natural sciences.

Although the natural sciences have often been represented as relatively gender traditional and male-dominated, it is not a given that this is the situation at a Norwegian university today. The natural sciences are relatively male-dominated, but this is not tantamount to poor gender equality – perhaps the realists are simply "boring but peaceful" (as stated by one of their own). In light of the development of gender equality, it is possible to formulate two hypotheses: (1) the natural sciences are more traditional; but also that (2) they can be more aware and innovative when traditional problems are put under a critical spotlight through increased demands for balance and gender equality.

How typical is the gender gap within the natural sciences at the MN Faculty compared to universities in other places? Here we have solid data, particularly from two larger surveys similar to ours from Ireland and the United Kingdom. The questionnaire in the employee survey in FRONT is based partly on the questionnaires used in these studies, and the surveys can therefore be compared more precisely. The first study, Integer, was carried out in Ireland in 2012, and the second, Asset,[14] was carried out in the United Kingdom in 2016.

Many of the Irish results correspond to ours. They provide an almost surprisingly identical picture. A similar list of "problem variables" is selected from the analyses.

> … women staff were less likely than their male counterparts to believe that their colleagues always sought their opinions on research ideas and problems and were more likely to feel that they were under scrutiny by colleagues in their Schools. Though most survey respondents, male and female, reported positive aspects about the culture prevailing in their Schools, there were some characteristics that were less evident than others: transparency, inclusivity, collaboration and support. Significantly fewer women than men surveyed believed that the culture prevailing in their School was non-sexist or respectful. Similarly, male respondents felt more valued than their female counterparts, for their teaching, research, scholarship and/or creativity. (Drew, 2013, p. 21)

Some differences also emerge. In the Irish study, men and women are about equally satisfied with their work-life balance. In our employee survey, on the other hand, women are dissatisfied approximately twice as often as men. This may be interpreted in relation to different social traditions and notions of gender equality in the two countries. Women are more gender-equal and set higher standards in Norway than in Ireland. Differences between the institutions also come into play. The university in the Irish study (Trinity) has an even lower proportion of women among the academic staff, and at the top, than UiO (Drew, 2013, p. 33), but conditions in the natural sciences are probably quite similar.

Results from the study in the United Kingdom also correspond to ours (Aldercotte et al., 2017). Women reported less support and encouragement, less positive feedback and recognition, and were encouraged to apply for positions less often than men. In the same way as in our study, a culture with long working hours and little flexibility is more of a problem for women than it is for men. The British study also showed a "work displacement" in which women spent more time on teaching and administration while men spent more time on research (Aldercotte et al., 2017). The FRONT study shows the same pattern. Gender difference is small on the lower position levels, but work displacement becomes clearly visible on the associate professor level, where women spend an average of 24 per cent of their work hours on research, whereas men spend 39 per cent.

In the British study, the researchers found that the gender gap with additional disadvantages for women, which was visible in many areas, varied according to age. They concluded that the size of the gender gap

was age-dependent, since the gap was often missing (or at least much smaller) among respondents 30 years old and younger (Aldercotte et al., 2017). This is an important finding, which is supported by the FRONT material. That the pressure on women increases with age is in accordance with our results. Female master's students experience more negative attention than male students, but this applies especially to negative social attention, whereas gender difference is smaller when it comes to negative academic attention. This may be interpreted to mean that academic gender ranking becomes greater higher up on the career ladder. This is in line with the Janus model described in the second part of this book (Chapter 9).

A study of the mentor system for women at UiO (Løvbak & Holter, 2012) illustrates the significance of age in order to understand various forms of gender balance and based on, for example family research, we see that "payback time" may be a factor. After a period during which the man lets the woman's career come first (typically early in the relationship, she works on a master's degree or a PhD), there follows a period when the man's career is prioritized. This is connected to research on changes in career priorities during the life course of young adults, and the debate on the "retraditionalization" of the family following the infant phase (Lyng, 2017; Oechsle et al., 2012).

Conditions in Norway are different from Ireland and the United Kingdom, and one should be cautious about transferring results from one country – or one organization – to another without further ado. Nevertheless, it is obvious that the FRONT material, to a great extent, corresponds to the results from similar surveys in Ireland and the United Kingdom. In fact, the tendency is overwhelmingly similar, with approximately the same patterns. This comparison supports a hypothesis of relatively common socio-cultural mechanisms in academia across countries.

Discussion

Both employees and students often think that gender should not matter. For instance, two in three master's students respond, as mentioned, that gender balance has no significance in the group's work. A possible

interpretation is that it *should not* matter. Gender should not hinder collaboration. The idea that "gender-neutral is best" is known from, among other things, research on gender equality in organizations.[15] The distribution of answers to this question was approximately the same as in a previous student survey at UiO (Thun & Holter, 2013, p. 132), but the proportions of "agree" and "partly agree" are somewhat higher in our study, perhaps because the sample is limited to students in the natural sciences.

Gender equality research shows that many people want gender equality, while many also emphasize the importance of gender difference (see e.g., Ø. Holter et al., 2009). It is nevertheless somewhat surprising that this thinking in terms of differences is still so strong among master's students at a university in the "gender equality country". Almost four in ten students in the natural sciences agree that it is important to recognize fundamental gender differences, which contrasts with the students' responses to other questions. The vast majority want gender equality, including equal distribution of caregiving work and paid work within their own family. One could imagine that the idea of fundamental gender difference would be strongest among students of biology, but based on the students' responses, that is not the case. Biology students are no more "difference oriented" than students of physics or informatics in our (limited) material.[16]

Among the master students in our material, the women are slightly more gender equality oriented than the men. Unfortunately, we did not have the opportunity to ask the same gender equality questions in the employee survey, but the tendency is similar and known from previous studies. On the "attitude level", the differences are often small. Most people want gender equality. This is in contrast to questions that apply more directly to the "practice level", in other words, questions about experience and practice. It is especially here that women's and men's responses differ (see e.g., Ø. Holter, 2017; Ø. Holter et al., 2009; Mæland, 2015; Oechsle et al., 2012).

On the PhD level, we see that answers to a broad question about reasons for choosing to do a PhD, including influences from family, friends and researchers, do not differ very much by gender, although some tendencies are clear. The biggest gender difference that emerges relates to an

experience of having "talent" for a doctoral career, which men experienced almost one and a half times as often as women.

Generally, the results must be seen in light of both career development and life phases. The notion that the genders are fundamentally different, and other results, may be interpreted in light of *traditional gender roles.* It is a common way of thinking that gender-related ideas and stereotypes are something that students "bring with them" – from upbringing/ family, school and the social environment – and not something created by the university. It thus becomes important to emphasize that gender roles not only have to do with already existing attitudes. The students have entered a gender-divided system. At the MN Faculty in 2020, only approximately one in six students are in a gender-balanced master's degree programme (within 40/60 male and female students), whereas the other five are in degree programmes with weak gender balance. If we look at all the master's degree programmes at the University of Oslo, a study from 2012 shows a similar pattern – only one in five master's degree programmes was gender-balanced (Thun & Holter, 2013).

That gender difference is important is, therefore, not just a question of attitudes, but also something that reflects many students' and researchers' *actual situation* on their way up through gender-divided educational pathways. It is not a given that traditional ideas about gender are just something students bring with them from home or their childhood environment. Nor is it a given that students, more than the university itself, create this situation of considerable gender division[17] (see more in Chapter 8). Regardless of the reason – students learn gender roles during their career path, and what they bring with them "from home" is moderated and adjusted. Gender roles can thus be important. Nothing in our results contradicts that, but these roles are not only determined by childhood and adolescence. If that were the case, we would see other patterns, for instance, in regard to support for a career in the natural sciences.

Across genders, we see that the parents' educational level is important in terms of who is admitted to a master's degree programme. Thus 66 per cent of the students said they had a father with higher education, and 64 per cent had a mother with higher education (fairly evenly distributed by gender). Students with parents with higher education are strongly

overrepresented, here as well as in other studies (see Chapter 6). This can be interpreted to mean that students are already selected. They bring with them different social experiences, in which social class, gender roles and socialization mean a lot, although this is no longer quite so firmly connected to a "traditional" forming of gender roles and a traditional male breadwinner logic (see Chapter 2).

Attitudes and practice must be viewed in light of life situations. Gender equality research shows that attitudes often change from the young adult phase to the toddler phase. Women especially tend to become more critical of the existing (im)balance when they have children. The students in our sample have usually not yet started a family, and few have children. Students who said they were single totalled 57 per cent, while 34 per cent were cohabiting partners, and 9 per cent were married. Only 4 per cent had children. Many of the master's students were also in a phase of life where they were in the process of becoming established as cohabiting partners, though few had children at this point.[18]

The student survey shows a mixed picture on the attitude level, relating to both gender equality and the emphasis on gender difference. On the practice level, we see a different and less gender-balanced picture. Here, female students have one and a half to three times as great a chance of encountering obstacles in their careers, in the form of academic or social downgrading, as do the male students. Most of this downgrading comes from fellow students, some from lecturers, supervisors and others. Only a minority of the students say that this happens "often". However, it happens "sometimes".

In the employee survey, there is a clear element of gender-skewed selection. The comparison with studies from Ireland and the United Kingdom shows mainly the same trends across countries, position levels, culture, work environment, and other conditions. Gender appears as an independent dimension, usually in women's disfavour. The main tendency is that women are still worse off than men. This applies statistically, although more gender equality has been achieved in some areas. The material shows that there are still considerable additional costs for women who pursue an academic career. This is evident, for instance, from the experiences of imbalance between work and private life, and dissatisfaction

with the work culture. It is reinforced by a skewed work balance in some of the employees' households, where often, the man's career still takes precedence over the woman's. As mentioned, women have a much bigger chance, after parental leave, of experiencing difficulties returning to work compared to men. Among other things, this may have to do with men working more after a couple have children, whereas women work less (see e.g., Halrynjo, 2017). These results may be reminiscent of the idea of "punishment" for motherhood (for instance, that mothers are assessed as less competent and less suitable for management positions than women without children, and men with or without children), which has been found in American studies (Correll et al., 2007). This can also be seen in light of previous studies of UiO (Løvbak & Holter, 2012, p. 47; Orning, 2016). Both the questionnaire surveys and the interviews in the FRONT project show that the balance between research and family is particularly challenging for women (see Chapter 1, and Thun, 2019).

Gender roles and gender stereotypes are a part of this picture. Stereotypes have gendered consequences in women's – and mothers' – disfavour. The interviews showed different expectations of women and men when it came to, for example, collecting children in kindergarten, and the possibility of attending arrangements in the evening. Thun (2019) describes this and brings the matter to the fore in an interview: "If a male colleague collects in kindergarten two days a week, he is a gender-equal hero, but if a woman does the same, our commitment to research is questioned, was a common comment from the informants" (Sandum, 2019).

When looking at this pattern as a whole, and taking into account that it was probably even stronger in earlier days, it is not surprising that a lack of gender balance is seen at the top, or that it has been changing slowly. The relative absence of women in top positions, for instance in the natural sciences, is connected to women experiencing more obstacles and less support than men. The most important pattern, within a somewhat more gender-equal academia today, may be a lack of support in the sense of "non-events", such as not being referred to or invited (Husu, 2005), instead of direct counteraction. More active resistance is also an issue – if you want to move up you must have support. Lack of support may also be interpreted as an example of "passive" opposition to gender balance

and gender equality, or what has been termed a "defence mechanism" (H. Holter, 1992). But also more "active" resistance emerges in parts of the FRONT material – for example, relating to harassment (Chapter 3).[19]

The work displacement, in the sense that women spend more of their work hours on teaching and administration while men spend more time on research, found in our material is strengthened not only by the British study, Asset, but also by other studies. (see e.g., Vabø et al., 2012; Vetenskapsrådet, 2021). In a study from the Swedish Research Council, work displacement is emphasized as a main reason for a lack of gender balance in higher academic positions. The explanation is that women are often in research fields characterized by a high proportion of teaching, and they – in all disciplines – report having less time for research than their male colleagues (Vetenskapsrådet, 2021).

The comparison with the Irish study, Integer, and the British study, Asset, provides support for a hypothesis of relatively common socio-cultural mechanisms within the natural sciences across countries. Some features are also similar to conditions in male-dominated prestige disciplines and elite jobs in general (Aarseth, 2014; Halrynjo, 2017). For instance, we see that the gender gap in experiences of the work environment and culture has a psychological side. Accumulated negative experiences, in the long run, increase the chance of "self-chosen" withdrawal or devaluation. You lose self-confidence and faith in yourself. This affects organizational sensemaking, and what is considered meaningful in the organization (Dockweiler et al., 2018; Snickare & Holter, 2018; see also Chapters 7 and 12).

The empirical picture presented here reveals gender differences seen separately, independent of other variables in the data, regardless of whether the differences are perhaps *also* connected to other conditions or grounds for discrimination, such as ethnicity or social class (parents' level of education). The background for this is the need to understand gender differences as a pattern in and of itself, before connecting them too quickly to ethnicity, class or other variables. The variables that stand out form a coherent and persistent pattern. The challenge is to expose it and interpret what it means.

Such a strategy, where gender and gender equality are seen separately in order to achieve the best possible elaboration of the picture, would

perhaps have been unacceptable if it turned out to be the case that gender largely covaried with other factors – ethnicity, class, position level, age and so on. But that is not the case. Instead, gender is a very strong, independent factor across a number of other background variables in the material (see Chapter 6, and Appendix "Method").

Conclusion

In the introduction to this chapter, we asked whether there is a gender gap in experiences within academia. The material we have reviewed confirms this. In this chapter, we document some of the most important differences. For example, we show that female students experience the environment as not very inclusive approximately twice as often as male students, and that they experience negative academic treatment approximately one and a half times as often. Female academic employees experience twice as often as men that they are under constant scrutiny, and one and a half times as often that they have to work more than their colleagues to be recognized. This pattern also includes a number of variables where the gap is smaller, such as problems with colleagues' attitudes where women have "only" a 140 per cent greater frequency than men. As many as two-thirds of the environment and culture variables show clear differences with regard to gender.[20]

The chapter presents material based on three important career stages: master's student, PhD student, and academic employee in higher position levels. Analyses show major gender differences in all stages. Moreover, we see that the gender gap appears across units at the faculty. The gender gap forms a clear pattern, although the problem picture varies somewhat, depending on for example, position level and discipline.

We then compare the FRONT material to international research. Two European surveys similar to our own employee survey reveal a similar gender gap within the natural sciences. We then discuss these results in light of gender role theory and gender-divided career paths. The significance of gender differences in relation to other types of social inequality – ethnicity in particular – is further elucidated in Chapter 6. Chapter 7 presents a model for interpreting the gender gap documented in this chapter.

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Notes

1. First, a smaller questionnaire survey among master's students (N = 213) and then a larger survey among employees including PhD students at the Faculty of Mathematics and Natural Sciences, the University of Oslo (N = 843). See also Appendix "Method".
2. The questionnaire was answered by students from randomly chosen lectures and reading rooms. See also Appendix "Method".
3. The proportion who responded "often" + "sometimes" is presented in the figure. Most of these responded "sometimes". Negative social and academic treatment was not defined any further in the questionnaire. We do not know specifically what the students had in mind when responding to these questions, but we see no sign of them being particularly "difficult" to answer, based on the response rate or the comments in the questionnaire form.
4. The figures are too small to be able to say this for certain, but the difference in the level of competition between departments may be significant.
5. This was a common hypothesis in early studies of women's careers in male-dominated occupations (see e.g., Wahl et al., 2018).
6. Hedonism or pleasure orientation does not gain much support, neither here nor elsewhere in the study.

7 The hypothesis that the questionnaire surveys are characterized by "more critical" or problem-reporting women compared to men is discussed in Chapter 1 and Appendix "Method" in this book.

8 It may seem that the choice of a male supervisor increases the publication rate a bit, but we do not know for sure – see also Chapter 4.

9 Some of the position categories, divided by gender, are a bit too small – coincidences may come into play, especially in relation to less common problems. The sample consists of PhD student N = 156; postdoctoral fellow 86; associate professor 69; full professor 111. Moreover, the gender differences presented here are not controlled for other background variables. The material is too limited. However, we do not believe this would have made much of a difference. Gender is largely an independent dimension in the material, as shown in Chapter 6. Note that the problems were not time-limited in the survey. They may include previous experiences, not just experiences at the current position level, although we have reason to believe that they mostly concern experiences here and now (see Appendix "Method").

10 The figure also shows some cases of "reverse gender gap", i.e., more widespread problems among men than among women (i.e., having to work harder than colleagues, and problems with colleagues' attitudes, on the associate professor level). This appears only sporadically in the FRONT material (see Chapters 2 and 6).

11 The analysis here is simple and descriptive. We show what gender is associated with. We take a closer look at other background variables that may be important when interpreting gender differences in Chapter 6, and at possible causes of the problem patterns in Chapters 7, 8 and 9.

12 Detailed analyses confirm this picture. For example, we see that the proportion on the professor level who experience academic devaluation in the sense of constant scrutiny is 9 per cent among men and as much as 38 per cent among women.

13 For example, in that a larger proportion of female students means a greater chance of reporting sexual harassment, based on the fact that it is generally mainly women who report this problem. On the other hand, it is conceivable that faculties with a larger proportion of men will also have a larger proportion who harass others. In Chapter 3, we discuss the material on sexual harassment in more detail.

14 N = 4,871 researchers in the natural sciences/STEM disciplines.

15 Gender neutralization was described as part of "domination techniques" or "master suppression techniques" already in early women's research (H. Holter, 1976; Ås, 1981) and as part of "organizational defence or avoidance mechanisms" in relation to gender equality (H. Holter, 1992). The tendency has been identified in much later research (see e.g., Ø. Holter et al., 2009; Madsen et al., 2005; Skjeie & Teigen, 2003).

16 Subject to the fact that biology students had a higher proportion of women in relation to the other student groups in the survey.

17 It may seem a bit striking that a university that otherwise strives for a very active role in recruiting students and researchers here can be presented almost as an innocent "victim" of gender traditionalism in society in general and in the family in particular.

18 Some previous research indicates that teenagers and young adults can be more "gender traditional" than adults in the phase with small children (Teigen, 2006). Particularly the youngest emerge (somewhat unexpectedly) as gender conservative. This can probably be linked more to life phase than to age as such. The problems of a lack of gender equality are experienced more clearly as young people get a job, have children, and must combine this.

19 In Chapter 2, we further address men and masculinities in relation to gender equality and demonstrate how gender equality varies somewhat across genders (Ø. Holter et al., 2009, see also e.g., Barker et al., 2011, Warat et al., 2017).

20 Statistically significant difference from bivariate analysis (SPSS). As mentioned, some of these are relatively weak correlations (for example that women have 110–120 per cent frequency compared to men), whereas other parts are stronger (usually 130–200 per cent, sometimes even more).

CHAPTER 6

Ethnicity, Racism and Intersectionality

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Abstract: Research on discrimination and the effect of working towards equal status is significantly more advanced in academia in relation to gender than to other forms of discrimination. A relevant question is the extent to which analyses and measures to promote gender equality can contribute to advancing equality in other areas, including ethnic background and skin colour. And conversely: What can insight into discrimination on the basis of ethnicity bring to work on gender equality? This is the starting point for a review of the ethnic dimension of the FRONT survey's empirical material. In this chapter, the university is seen as an international workplace. Thus the extent to which relations within the work environment and professional culture are influenced by ethnic background is investigated. The primary focus of the review is ethnicity, but the chapter also discusses how dimensions such as gender, ethnicity and class interrelate. In conclusion, the results are discussed in light of other research on intersectionality, stigmatization and gender roles.

Keywords: ethnicity, racism, intersectionality, class, equality, gender differences, academia

Historically speaking, equality work in universities has focused on equality between men and women. More recently, gender has been accompanied by diversity, a term primarily used in reference to ethnicity and ethnic diversity.[1] Other grounds of discrimination, such as sexual orientation, gender identity, gender expression, disability and age, are more seldom

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discussed. Workplace diversity has been on the agenda for some time, but is still relatively underdeveloped and poorly integrated into the higher education sector in Norway, compared to gender equality work (Tica, 2021). At the same time, universities' international orientation is expanding. This trend of increased internationalization applies to universities in general, but is particularly visible in the natural sciences (Gunnes et al., 2016).[2] For example, as many as 38 per cent of those who responded to the survey of employees at the Faculty of Mathematics and Natural Sciences in the University of Oslo, which forms part of the empirical basis for this book, were of foreign nationality. A total of 51 nationalities were represented in the survey, but the large majority of answers came from employees with western national origins, including neighbouring Nordic countries. Only 17 per cent of the foreigners were from non-western countries.[3]

In Norway and other countries, there has been considerable debate on whether gender equality and diversity are aligned or can in fact be conflicting goals. There is also a fear that increased emphasis on diversity will weaken gender equality efforts. Since research on differential treatment/discrimination and the effect of equality measures is considerably more developed in relation to gender than other potential grounds for discrimination, a relevant question is whether analyses and work based on gender equality can contribute to equality in other areas, including ethnic background and skin colour. And conversely, how can knowledge on ethnic discrimination contribute to gender equality work? Therefore, based on our analyses of gender differences, we wished to explore the ethnic dimension in our empirical material. Both the survey of the employees and the interview material provided an opportunity to conduct an analysis with regard to ethnicity. The questionnaire survey contained variables providing information on the respondents' origin, and some of the interviews included questions on diversity and differential treatment based on ethnicity.[4]

In this chapter, we explore how life in academia is formed and affected by ethnicity. We begin by describing our material and definitions. Next, we describe a main feature of our material – the university as an international workplace. We show how four ethnic groups are distributed in terms of position level and other variables. In the employee survey,

three questions explicitly mention racism: whether the respondent has experienced unwanted racist attention; if so, who was behind this; and whether s/he experiences the culture in the unit as non-racist (racism was not defined in any detail in the survey). We describe the distribution of answers to these three questions. We then pose the question of whether conditions related to the work environment and academic culture, which we have considered earlier in relation to gender, are affected by ethnic background. The interviews show evidence of cultural differences and linguistic problems. Finally, we address ethnicity in relation to other dimensions in the material, including gender and class. The chapter ends with a discussion of the results in light of other research on intersectionality, stigmatization and gender roles.

Ethnic Discrimination

An ethnic group can be defined as a group within a larger society, which considers itself a group in relation to others, and is also identified as a separate people by others (Sommerfelt & Schackt, 2020). For example, the group may have the same national origin, descent, skin colour or language, according to Norway's Equality and Anti-Discrimination Act (Likestillings- og diskrimineringsloven, 2017).

This law prohibits direct and indirect discrimination on grounds of ethnicity (including national origin, descent, skin colour, language). Thus ethnicity, like gender, is a *ground of discrimination* in modern legislation. This is also reflected in the mandate of the Equality and Anti-Discrimination Ombud,[5] whose mission is to "promote equality and fight against discrimination on the basis of gender, ethnicity, religion, disability, sexual orientation, gender identity, gender expression and age" (Likestillings- og diskrimineringsombudet, 2019).[6]

Several studies indicate that the extent of experienced unfair or differential treatment on the grounds of ethnicity is considerable in Norwegian working life. As many as 22 per cent of descendants of immigrants have reported differential treatment in the workplace in the past year (Bufdir, 2020). Diversity is also severely limited among business leaders (Grundekjøn, 2020). Differential treatment also occurs in academia,

although research here is not decisive (Akademiet for yngre forskere [AYF], 2019; Cools & Schøne, 2019; Midtbøen, 2020). Some studies indicate that differential treatment increases with higher position levels (Løkeland-Stai, 2020; Maximova-Mentzoni et al., 2016, p. 41), but differential treatment based on ethnicity in today's Norwegian academia is relatively unexplored.

The Ethnic Dimension in the Study

In Norway, the term "race" is not a valid category; it is not used in official registries and therefore not included in our study (unlike some countries, like the U.S.). Two variables in the questionnaire survey provide information on the ethnic dimension: *nationality* (citizenship) and *family background*. Nationality was formulated as an open question, while family background had three response options (Norwegian, mixed, foreign).[7]

In the analyses below, we divide the ethnic dimension into four main categories. These are defined as follows:

Majority	=	Norwegian nationality, not descendant
Descendant	=	Norwegian nationality, foreign or mixed family background
Western	=	Non-Norwegian (foreign) with western nationality
Non-western	=	Non-Norwegian with non-western nationality[8]

We should mention some limitations in the material and this categorization. According to the Equality and Anti-Discrimination Act (2020, § 6), "Ethnicity includes national origin, descent, skin colour, and language." We asked about nationality and family background, but not about skin colour. Neither was language addressed in the employee survey, although the interview material offers information on this issue.

The law distinguishes between direct and indirect differential treatment (§ 7 and § 8): "'Direct differential treatment' means treatment of a person that is worse than the treatment that is, has been or would have been afforded to other persons in a corresponding situation." Indirect differential treatment is "any *apparently neutral* provision, condition,

practice, act or omission that results in persons being put in a worse position than others" (our italics). The questions in the employee survey do not distinguish between these types of differential treatment.

We should also add that differential treatment and discrimination are two different things. Differential treatment implies that groups are treated differently or affected differently by a practice or rule. It is connected to what sociologists call social stratification. In some cases, differential treatment is justified. For example, a requirement for proficiency in Norwegian in a job announcement may affect different ethnic groups differently, yet still not be discriminatory if the position involves teaching in Norwegian. "Discrimination" is reserved for those cases where such differential treatment cannot be justified, that is it does not have a factual purpose (as defined in the law relating to equality and the prohibition against discrimination). The topic of this chapter is, first and foremost, differential treatment, not discrimination in the legal sense.[9] Our data describe experiences of differential treatment, as well as potential factors behind it.

The survey used in this and other chapters in the book was answered by 843 employees at the faculty. The interview material consists of 93 interviews, of which two-thirds were Norwegian employees and one-third were foreign. The interviews included questions related to diversity and differential treatment based on ethnicity/sexual orientation/age etc., but were primarily oriented towards questions concerning gender equality.[10]

The material is extensive but also limited. It is, for example, too small to say anything about different experiences based on each individual nationality. Our ethnic categorization is also rough (western/non-western), and conceals major variations within some categories, perhaps especially for descendants. Nevertheless, the material is relatively representative and contains answers from both majority and different minority groups. Moreover, the breadth of questions that can be tested in relation to ethnic differential treatment is considerable – much more than in previous research.[11] The analyses thus provide new knowledge, albeit with reservations. By uncovering shortcomings, they also reveal more precisely the need for further research, which we discuss towards the end of the chapter.

The International University: Majority and Minorities

The huge span of the ethnic dimension is shown in Table 6.1, where we present the main features of four different groups, defined on the basis of nationality (citizenship) and family background. The first two columns apply to employees of Norwegian nationality, with either Norwegian family background (we call this category "majority") or foreign/mixed background (we call this category "descendants"). In other words, descendants are not only children of immigrants, but also those who have changed citizenship during adulthood (that is first-generation immigrants). The next two columns apply to foreign employees from western and non-western countries, respectively.

Majority and Minorities

Table 6.1. Employees by Nationality and Background. Source: FRONT employee survey (N = 843).

	Norwegian nationality		Foreign nationality	
	Majority	**Descendants**	**Western**	**Non-western**
Number of respondents	459	63	268	53
Percentage of the entire sample	54	8	32	6
Proportions in the group (in percentages):				
Proportion of women	43	53	42	28
Proportion of young (below age 35)	34	31	43	55
Proportion of middle-aged (age 35–55)	49	55	50	45
Proportion of seniors (age 56+)	17	14	7	0
Proportion of PhD students	15	13	28	36
Proportion of postdoctoral fellows	5	9	23	13
Proportion of associate professors	7	9	10	13
Proportion of full professors	16	14	13	0
Proportion with high parental education*	24	36	30	12
Proportion with high father's education**	40	45	52	17
Proportion of academic employees	66	66	87	91

Note:
Majority = Norwegian nationality, not descendant
Descendant = Norwegian nationality, foreign or mixed family background
Western = foreigner with western nationality
Non-western = foreigner with non-western nationality
*High parental education = scale value 12 and above (on the basis of a 14-part scale of the father's plus the mother's level of education)
**High father's education = scale value 6+, on the basis of a 7-part education scale

Let us take a closer look at the figures in the Table. The distribution of minority groups in relation to the majority enhances the picture of the faculty's international orientation. This is particularly apparent, embodied by a large group of foreigners of western nationalities, who make up as much as 32 per cent of the sample.

But is the distribution fair and balanced across the various career levels of the researcher's career, or do some groups fare worse than others? The proportion of professors is roughly the same for the majority (16 per cent) and descendants (14 per cent). Overall, the four groups are fairly evenly distributed on higher position levels. The only obvious exception is non-westerners, who are absent on the professor level, which may be an effect of the fact that this group is considerably younger than the other groups. It may also be the case, as mentioned, that some of the employees with non-western backgrounds have changed citizenship as adults, and therefore become part of the group "descendants" in our statistics.

It becomes clear from the Table that the minority groups are *different*. For example, descendants and non-westerners are two very different groups. The descendants resemble the majority.[12] Nor are they clearly underrepresented in relation to position level, based on our data. One difference is that their parents have higher education levels than the majority's parents. This applies particularly to the women in the group. The non-western group is a more clearly distinct group than the descendants. They often have parents with a low level of education, and the group is characterized by lower age (few seniors), a lower proportion of women, and many PhD positions.[13] However, they are not underrepresented on levels above PhD. Rather, they are slightly better represented here, although they are absent on the professor level. It is possible to interpret this in terms of a time frame, since the group largely consists of young people who have entered the picture relatively recently. They are almost exclusively academic (not administrative) employees.

Westerners make up the largest group with non-Norwegian nationalities. Like non-westerners, they are overrepresented on lower career stages, now especially on the postdoctoral level, not the PhD level. They are also somewhat older than non-westerners. We do not see any clear indication that they are underrepresented on higher position levels.

The four groups differ from each other in important respects. But we do not see a clear picture of the majority being overrepresented upwards on the career ladder. Does this mean that all the different groups have equal opportunities? We do not know. For example, we do not have information on the number of applicants divided by the number of those employed, both for Norwegian and foreign applicants. Other studies indicate a low employment percentage for applicants from countries outside of Norway (Frølich et al., 2019).[14] Furthermore, we have mentioned that "descendants" in our analysis is a diverse group, in which a number probably have one or both parents from western countries, and are therefore not in the target group for typical forms of differential treatment (that is differential treatment based on skin colour). What becomes obvious here, as well as elsewhere in the material, is that the faculty is largely open to "western" competition. Whether this also applies to *global* competition is a different issue. We see that the group most likely to be exposed to differential treatment, non-westerners, are absent on the professor level. The fact that this group often consists of younger employees, at an early stage in their careers, is perhaps not the entire picture.

It is important to emphasize that an even distribution by position level does not automatically mean that differential treatment does not occur in an organization. One can imagine that the distribution of different groups upwards on various levels appears relatively balanced or equal, and that everyone seems to have equal opportunities. Yet at the same time, there may be strong guidelines within the organization, making it more difficult in practice for underprivileged groups to achieve higher positions, be they women or foreigners. For example, both women and ethnic minority groups report that they have to work harder than their colleagues in order to achieve professional recognition (see below). This might mean that the path to positions on higher levels is longer for these groups. In other words, the results broken down by position level do not mean that differential treatment does not occur. A clear trend in our material on position level is that underrepresentation in regard to gender is consistent, whereas ethnicity is more varied (see Chapter 5). At the same time as we see few non-westerners at the top, we similarly see few women.

Time for Research: Both Positive and Negative

Work displacement means that an employee is given fewer meriting assignments. Within academia, where research counts as the most meriting activity, work displacement can consist of an increase in administrative tasks, or teaching at the expense of time for research. Consequently, it becomes harder for the employee to qualify for a position on a higher level. However having plenty of time for research can be a double-edged sword. A lot of time for research is good – it is how you qualify. But teaching and administration are also good – that is how temporary employees make themselves indispensable in the workplace, and thus might increase their chances of an extended contract, and finally a permanent position. We see this in the interviews, in which temporary employees attempt to "make themselves indispensable" in order to remain in the faculty. For example, Marit, a female postdoctoral fellow, says:

> My strategy is that we are a fairly small research group with few permanent employees, many students, and a popular degree programme. So we have many students and quite a lot of teaching, so I thought as an idea for me that I take on teaching. It is a way of making myself useful in this group … so I'm thinking of keeping that up, and hang on a little and see how far it leads me.

In the questionnaire survey, we ask how working hours are actually divided between the different tasks, and how employees wish they were divided. Our data show that the majority group spend slightly more time on administration than the other groups. This is not unexpected, considering that foreigners (particularly non-Scandinavians) have more problems with the language and culture. But the results should be interpreted with caution – it may happen that some work displacement should actually be considered to be ethnic allocation of assignments (Midtbøen, 2020), meaning that some groups are given less meriting assignments than others. This may pass under the radar, so to speak, in our study. But the main impression is that foreign researchers at the faculty are given ample opportunity to do research. However, they report slightly more total working hours (two more working hours a week) than their colleagues in the majority group. This result gains significance considering

that they, more often than the majority, experience unfair work pressure, as we discuss below.

A Norwegian study reveals a tendency in which Norwegian women often apply for positions emphasizing administration and teaching, whereas foreign men more often apply for research-oriented positions (Frølich et al., 2019). The FRONT material does not indicate any clear differences in relation to desired distribution of working hours.[15] The vast majority, regardless of ethnicity (or gender), would like more time for research. Some would like more teaching, and a few want more administration. We see a certain variation based on position level: the desire for more research time is stronger on lower levels than on higher levels. There is a slight tendency for the minorities to prioritize research even higher than the majority, but the differences are relatively small.

The Seeing Eye: Racism and Ethnic Differential Treatment

Let us take a look at experiences of racism in the employee survey, since we have measured this through questions explicitly mentioning this topic. Three questions deal with this: whether the respondent has experienced unwanted racist attention;[16] if so, who was behind this; and whether s/he believes the culture in the unit to be non-racist. The proportion of employees having experienced unwanted racist attention at the faculty was 4 per cent.[17] By comparison, 12 per cent have experienced bullying, and 7 per cent have experienced unwanted sexual attention.

These are figures for the entire sample, however. The extent of racism is highly dependent on "the seeing eye", or the position of the person responding. Unwanted racist attention has been experienced by only 1 per cent of participants with Norwegian family backgrounds, compared with 8 per cent of those with foreign or mixed family backgrounds. Among participants of non-western nationalities, 11 per cent have experienced unwanted racist attention compared with 4 per cent of western foreigners.

The analyses show that roughly one in ten from exposed groups (descendants, non-westerners) have experienced unwanted racial attention. This indicates that experiences of unwanted racial attention are not

simply a marginal exception. And although it is not the norm, it constitutes a considerable problem at the faculty. This result largely resembles the figures for unwanted sexual attention – here, 12 per cent of the most exposed group (women) have experienced the problem, compared to 3 per cent of the men (see ch. 3).[18]

We asked who is responsible for the unwanted racist attention. The results show that colleagues are behind approximately two-thirds of this. Again, the picture largely resembles unwanted sexual attention. We also asked about the culture in the unit/department in regard to racism. The vast majority agree or strongly agree that the culture is non-racist. Only 4 per cent of employees disagree or strongly disagree with this. By comparison, 5 per cent disagree or strongly disagree that the culture is non-sexist. The tendency is similar. Although there are experiences of racism (or sexism), they are considered to be more the exception than the rule in academic culture.[19]

Direct questions on unwanted racist attention and racism show that the problem exists, and that the extent of the problem largely depends on whom you ask. The extent is considerably greater in exposed groups, than in less exposed groups. The majority report fewer problems than the minorities, in the same way that men report fewer problems than women, in relation to sexual harassment. The tendency here, as in analyses of gender, is that the more general the question, the greater the support for the "equality" response option. Almost "everyone" agrees that the culture is non-racist, generally speaking, especially among the Norwegians. Among the minorities, there is also still a large majority in favour of this view. Also, descendants and non-westerners agree – the culture in the faculty is generally good.

Another indication of equal treatment in the organization is the experience of bullying and harassment regardless of grounds for discrimination. Descendants, but not other minorities, more often report bullying than the majority. Among descendants, 19 per cent report bullying compared with 11 per cent of the majority. This is an indication of a problem, independent of direct racism. The difference is roughly the same across genders. We see no particular profile among the descendants compared to the majority in relation to who is responsible for the bullying. The most

common answer in both groups is colleagues. However, there is a clear tendency among descendants that those who report racist attention also report bullying.

In other words, we find a considerable, that is more than marginal, proportion of experienced racist attention and racism, and a larger proportion who have experienced bullying, among descendants. The problems depend on “the seeing eye” – and are experienced much more often in exposed groups than in the majority group. At the same time, assessments of the culture in the unit are mainly positive, also among minorities.

Different Experiences Based on Ethnicity

We have described the placement of various minorities on position levels, possible work displacement, and experiences of unwanted racist attention. This says something about diversity-related challenges, but it only tells part of the story. In order to understand more of this picture, we need data on work environment and academic culture, similar to what we have on gender. As mentioned, minorities may be relatively well placed in the position hierarchy – but the costs of getting there may be different.

Table 6.2 shows the main results of analyses of the majority and minorities with regard to essential work environment variables. At the

Table 6.2. Work Environment Problems Among the Majority and Minorities. Source: FRONT Employee survey (N = 843).

Work Environment Problems by Different Groups (in percentages)				
	Majority	**Descendants**	**Western**	**Non-western**
I have to work harder than my colleagues in order to be recognized	12	30	24	37
I am constantly scrutinized/judged by my colleagues	14	20	18	26
I am reluctant to bring up issues that concern me for fear that it might affect my career	20	33	19	28
I do not get the opportunity to participate in important committees/meetings/projects	15	33	23	18
Problems with colleagues’ attitudes	14	20	23	15

top of the list, we see problems with clearly unequal ranges between the groups, led by having to work more than colleagues, which ranks as number one on this "ethnic problem list". Below we see examples of variables that appear to be influenced by ethnicity, but where the results are somewhat less clear.

We see a clear (and statistically significant) variation for the experience of having to work harder, and the feeling of being scrutinized and judged. We also see quite a bit of variation in relation to raising issues. But for having the opportunity to participate in important committees, meetings and projects, the picture is somewhat less clear. The same applies to problems with colleagues' attitudes and a number of other environmental variables not presented here.

The Table should be interpreted with caution. It only shows how problems are experienced within the four groups. It does not say that they are *caused* by differential treatment based on ethnicity, or whether other conditions are at work. In particular, we see that the non-westerners are a special group in terms of age and position level. Our material is too small to correct for such factors. Nevertheless, it is relevant for revealing the actual pattern – even if we do not know what causes it. One possible interpretation is that the minorities – descendants, westerners and non-westerners – in fact largely resemble each other in some central areas, especially in the experience of having to work harder, being under scrutiny, and being slightly reluctant to raise issues. In other questions, they are more equal, but some of this might also be explained by the fact that the non-westerners are a more distinctive group, in terms of age and position level, as already mentioned.

The experience of having to work harder or being scrutinized and judged does not necessarily have anything to do with competitive environments. It could also relate to the costs of cultural differences. The degree of differential treatment may be relatively limited. On the contrary, the environment may be characterized by encouragement of international collaboration, but there is nevertheless a "Norwegian cultural curriculum" that the minorities must learn. This may be part of the explanation for why the minorities report more working hours a week, despite the fact that we see no indication that they have less time for

research than the majority. At the same time, it is clear that descendants also report demands for (perceived) unfair work efforts, which makes it clear that cultural difference is hardly the only explanation.[20] A possible interpretation is that minorities, more often than the majority, feel they have to prove they are competent.

One claim in the debate, which also shows up in the interviews, is that globalization entails competition, which may weaken Norwegian gender equality. The idea is that international competition means that male applicants, with less background and work methods based on equality, will oust a Norwegian "bedrock" of researchers, especially women. Some put this into a time perspective – some of these international environments are reminiscent of Norway in the old days:

> What you have kept [in today's university] is the job insecurity, low wages, the necessity for major work endeavours, especially in Norway, with gender equality now in particular, right, so it is obvious – before, the men could just go to work, and then they had a stay-at-home wife, you know, but you can't work 12 hours a day any more, modern PhD students can't and won't, not men either. And then, then there are many, then there are many things that … I mean a lot of tensions, to put it mildly. (Kristoffer, male professor)

This train of thought is most visible in interviews with men in our material, and less common among the interviewed women. To a lesser degree, these saw international competition as a problem in terms of gender equality.[21] The interviewed leaders often emphasized that gender equality and diversity should be seen in connection. They argued that these dimensions could reinforce each other, among other things, in the form of increased innovativeness. The positive importance of internationalization and diversity was mentioned by many of the interviewees, but was most emphasized by this group.

If international competition is a threat to gender equality, we should be able to see tendencies of this in detailed analyses of the ethnic dimension. For example, there should be a greater proportion of households in which the woman's career has priority, or where there is an equal priority in the majority group than in various minorities. Is this the case?

Work, Family and Ethnicity

The Table below shows how essential factors in the family situation (among those with a spouse or partner) are distributed among the four groups (in percentages).

Table 6.3. The Family Situation Among the Majority and Minorities. Source: FRONT Employee survey (N = 843)

	Majority	Descendants	Western	Non-western
Proportion with partner/spouse	82	70	78	68
Partner/spouse is an academic or researcher	30	21	36	41
The woman has taken leave due to the man's job (average, months)	4	1	5	7
Partner/spouse and I are equally dedicated to our careers	56	55	53	64
Man is more dedicated*	33	25	30	29
Woman is more dedicated*	7	0	9	0
The partners' careers had equal priority in the past year	57	52	46	47
The woman's career had first priority in the past year*	12	16	13	3

Note: The figures represent proportions in percentages within each group, except the figures for the woman's leave due to the man's job, which represent the average number of months on leave (*indicates that the figures are taken from men's reports, but the reporting is highly similar across genders).

The proportion of participants who are married or cohabitants is quite similar between the groups, if we take different age profiles into account (non-westerners are younger). We see a relatively large element of homogamy (married to equals) among those who have academic partners, at least in the majority group. Here as many as 50 per cent of those with an academic partner have a partner working in a discipline related to the respondent's own discipline. Natural scientists seem to be fond of each other. Figures for the minorities are a bit too small to say anything about this dimension. Similarly, figures for taking a leave of absence (leave/career break) are small, but they provide a certain picture of the situation.

We see no essential difference in the assessment of career motivation or dedication across ethnic groups. On the contrary, the proportion with balanced dedication is relatively similar. A few differences emerge when we take a closer look at prioritizations in the household during

the past year. That the woman is more dedicated than the man is generally a minority phenomenon but is actually not reported at all among descendants and non-westerners. Regarding actual prioritization in the past year, we see a slight tendency for equal priority to be more common among the majority than in the other groups, but this is not very clear. Nor do we see any clear picture that the proportion who have prioritized the woman's career in the past year is higher among the majority than in the other groups. However, there is a tendency towards a lower priority among non-westerners.[22]

What does the data say about the assumption that internationalization is a threat to the Norwegian gender equality model? It is a mixed picture. Norway is not alone in increasing gender equality. The different ethnic groups' households are relatively similar, and the difference we do see might be explained more by other factors, such as age and position level. We see some signs of lower acceptance for women's careers, meaning that women are less dedicated than men, among two of the minorities, but these are uncertain and may be caused by other conditions. Actual prioritization of the woman's career in the past year is, in fact, slightly lower among the majority than among descendants, but higher among westerners than non-westerners.

In other words, we see that minorities have different "gender equality conditions" in the household/family, and the hypothesis that they are generally less gender equal is only supported to a limited degree. We have a few indications that traditional gender roles matter more, for instance, with less reporting than in the majority, that the woman's dedication to her career is greater than the man's. But as to who in practice has had priority in the past year, descendants score higher than the majority on giving the woman priority. The results correspond to other research on descendants' social mobility, especially among women (Midtbøen, 2020; Vidnes, 2019; Vik, 2013).

Cultural Differences and Indirect Differential Treatment

The interviews in FRONT confirm the faculty's international profile. As mentioned, approximately one-third of the interviewees are foreign citizens,

mostly from western countries. We also see major geographic mobility: many have moved between countries during their careers; and many of the non-westerners have had stays at western, including Norwegian, universities, for example as master's students or PhD students. Many also work in research groups with an international configuration. Many experiences and reflections relating to ethnicity, directly or indirectly, emerged in the interviews. Here, we will take a closer look at these, emphasizing statements from non-Norwegian and non-western participants.

The most common explanation for additional problems for non-Norwegians at the faculty, described in the interviews, suggests cultural differences rather than racism, discrimination or direct differential treatment. These cultural differences involve such things as language, but also understanding how things work in Norway, including formal and informal rules of the game at the faculty. For example, there is major international variation in terms of what a position as a student, postdoctoral fellow or professor actually means in practice. The foreigners feel that it takes time to familiarize themselves with the rules of the game.[23]

When differential treatment is mentioned it is usually implicit, a type of bias that is not necessarily conscious. Li, a female PhD student, says:

> You don't speak as fast to Chinese people because sometimes you expect poorer English, and the English is poorer, perhaps much poorer sometimes. But you know – there are some mechanisms – you see the young male researcher there, you see him, or you wish to help him get into the discipline, but what about this Chinese girl? Well, she will probably soon go back to China, you know. And, of course, that may be true – but it is not fair. There should be equal opportunities in a situation like that. Even though many Chinese researchers have to go back for many reasons. But still.

Here we see both linguistic problems, as well as a tendency that foreigners, who may be likely to return to their home countries, are passed over. The investment does not benefit the unit (or the Norwegian job market). Consequently, the Norwegian candidate may be preferred. The example illustrates how structural conditions may contribute to differential treatment.[24] Foreign researchers may appear as "nomads", not suited for permanent employment.

Linguistic Problems

All the interviewees who do not come from Norway (or Sweden/ Denmark) describe difficulties learning Norwegian. However, their views on whether they actually need Norwegian in order to work at a Norwegian university differ.

"So the beginning was a bit difficult for me because I wasn't that good in Norwegian," says Ella, a female associate professor, when she describes how she experienced her first period in Norway. She continued to describe how informal contact between colleagues during lunch and by the coffee machine is what happens in Norwegian. Planned, professional discussions normally occur in English, however. Thea, a female associate professor, thinks she manages well with English. "They said, 'It would be great if you learned Norwegian,' but I mean, everything is in English. I am used to the English system. I came from an international group, I spoke English every day, so I was never … I never thought of it as a problem." Hannah, a female associate professor, agrees and says, "Speaking English is so natural, even with Norwegians, that I don't think it – for most people – occurs to us to switch into Norwegian. When you've established a relationship through one language, that kind of becomes the language of that relationship, so if you start with English, that's the way it is …." Kathrine, a female associate professor, has a different opinion. She is working hard to learn Norwegian because she needs it in her research collaborations, and in order to build networks with Norwegian researchers. "The meetings are in Norwegian, so I had to improve my Norwegian," she says. To some, like Thea, it may be "natural" to continue in English – especially within research collaboration – but at the same time, the administrative language at the University of Oslo is Norwegian, as is the language of instruction on the undergraduate level.[25]

Li describes how English may also be excluding, as mentioned above. "You don't speak as fast to Chinese people, because sometimes you expect poorer English, and the English is [in fact] poorer, perhaps much poorer sometimes." English is normally a greater challenge for non-westerners, such as from Asia, than for western employees, and linguistic problems can easily be perceived as slow-wittedness. The importance of English

as a working language also benefits employees from English-speaking countries in relation to Norwegians (and other westerners). We did not ask systematically about linguistic problems, but our impression is that "everyone" is expected to be proficient in English, and problems with this may therefore be undercommunicated, also among the Norwegians.[26]

Networks, Culture and Contacts

The biggest problem described by non-Norwegians is not language, but the lack of a Norwegian network. For Kathrine, these two things are connected. She has learned Norwegian in order to strengthen her Norwegian network. "During the ten years that have passed since I moved to Norway, I have been involved in a lot of international collaboration, so people outside of Norway know my name very well, and I get invitations and so on. My challenge is Norway," she says. Anna, a female post doctoral fellow, describes the same problem: "I have a very good international network, but the national network is not as good, in Norway." Thea also says that she misses a Norwegian network, which she believes affects her chances of getting research funding. "I wasn't used to failure [having grant applications rejected, our comment], then I came to Norway, and it was so difficult. […] In order to get funding, the RCN committee,[27] the researchers, and these committees must get to know you, both Norwegians and non-Norwegians." According to Thea, you must have a well-known name within the country where you apply in order to get funding. In her opinion, this is not typical of Norway, but applies everywhere: "I mean, in Germany, the peer-reviewers are German, or Germans living abroad. And I think, for me most … now it's like, if I hear who has assessed my application, I know all of them. Or they know me. And then being assessed as number one is easier."

These quotes illustrate how "networks" must be interpreted broadly. It is not only about acquaintances and collaboration but also about opportunities for funding and positions. Earlier, we described professional hierarchies and prestige (see Chapter 2), and here the more personal prestige system emerges. Having a "well-known name" is an advantage, and this varies with nationality.

Thea's statement that "in Germany, the peer-reviewers are German," may also illustrate cultural barriers, regardless of language – that there is a lot to learn when you come to Norway. Thea observes that some things are different ("these committees must get to know you, both Norwegians and non-Norwegians"), but she nevertheless interprets the Norwegian financing system based on a German model. However, the Norwegian model is different. The procedures for application processing vary considerably between countries, and the Research Council of Norway's system means that quality assessments, with few exceptions, are based on assessments made by foreign referees.[28] The quote illustrates how mastering the cultural codes, including the formal and informal rules for research funding, is often more difficult when you come from "outside". You may not necessarily be doing it "wrong". But you are not necessarily doing it entirely right either.[29] And that is important in academic competition.

In the employee survey, the lack of networks does not appear as a problem factor among minorities. That may be because the question is formulated differently than in the interviews. In the survey, we ask whether the respondents have been encouraged to establish their own network. Most of the respondents answer this question in the affirmative, including non-westerners. We do not ask whether they have managed to establish a network of their own or how difficult this has been. These topics came up in the interviews.

"The University Bubble"

Coming to Norway as a young employee, on the PhD or postdoctoral level, without a family is one thing. Staying in Norway with a family is a different matter. A number of participants describe how they experience problems of integration only after they start a family – before that, they lived in a "university bubble".

"I came here because I got a scholarship, and I was in the university bubble, and it feels like I lived entirely in that bubble. It was a bubble with a very hard shell – I spent all my time at the university and only socialized with people at the university. I worked out at the university's gym, I was involved in clubs at the university." Hannah describes how she lived in a

university bubble until she had a family and experienced how difficult it was for her husband to become integrated in Norway. “I felt pretty naive, and at the same time stupid, vulnerable, since I wasn’t really in that reality. And when I had to face that reality, having a family … having a family really bursts that bubble because you begin to relate to people on a different level.” For example, Hannah describes that she did not know how difficult the application process for a visa was, because she herself had received help. But most importantly, she describes how difficult it was for her husband to enter the Norwegian labour market. “Of course it is very important to be part of something bigger, to be part of a network and … yeah, and he has tried to make contact via email, but it is … his impression is that it is a very closed system. So people look out for each other, but it is very difficult for outsiders to come in. But once you’re inside, you will be looked after.”

Thea describes much the same. Her husband also had problems finding a job, an experience she shares with many in the same situation. “We have many colleagues here whose partner hasn’t got a job. And it is super frustrating! And I think we foreigners have been very naive, that we believed that we have come to Norway, and Norway is a rich country with a low unemployment rate. But I think, for many, it just hasn’t worked out. And that can be dramatic.”

We see a tendency for the interviewees to find it easier to talk about their partners’ difficulties in Norway than their own. This may, of course, be because they actually *have* bigger problems, for example, that the lack of Norwegian proficiency is a bigger problem in the job market outside the university. But it may also be easier to talk about differential treatment as something other than coincidences and exceptions, when it applies to another person.

Class, Ethnicity and Intersectionality

As we have seen, the results reveal a pattern of problems and challenges related to ethnicity. For instance, a higher proportion of minorities say that they have to work harder than their colleagues and are constantly scrutinized and judged. Some of these problems also emerge in relation

to gender (more often experienced by women), whereas others are more specific to the ethnic dimension (like linguistic problems). In order to provide a better interpretation of this picture, it is important to consider various background variables in connection with each other. Do different grounds for discrimination work together? This is the topic of the following section. The ethnic dimension is discussed in light of class and gender, and we describe the three dimensions together. First, we will look at the class dimension in the material.

Class and Education

Research on education shows that social class background is an important factor for selection in academia. Students with parents having long higher education levels are decidedly overrepresented compared with those whose parents have the least education (Statistisk sentralbyrå, 2019; Vidnes, 2019).

The FRONT project has data on mothers' and fathers' levels of education, as an indication of social class in the questionnaire surveys. We have an extended scale for educational levels (seven levels) and ask about both the mother's and father's levels. That education is a narrow and incomplete indicator of social class is beyond doubt, but not a discussion we can address here (for further discussion, see e.g., Hansen et al., 2014). Educational level should at least indicate one aspect of class, "cultural capital", having particular relevance in academia.

As shown in Table 6.1, 24 per cent of the majority have parents with higher educations compared with 36 per cent of descendants, 30 per cent of westerners, and 12 per cent of non-westerners. Parents' level of education has a positive effect for the majority and descendants (as mentioned, the category includes first-generation immigrants who have changed their citizenship to Norwegian). The Table may exaggerate the greater importance for descendants, based on data for western foreigners (with high educational backgrounds), and the tendency for "natural scientists to like each other" (homogamy), although we do not know this for certain. The figures indicate that class is even more important for descendants than for the majority.

One problem – or challenge – when measuring class through parents' level of education, in addition to the fact that this is only one aspect of class, is the scale itself. For gender and ethnicity, it is relatively clear what should be considered a high rank (male, white), and a low rank (female, of colour). But for educational level, this is not as clear. For example, we may find different problem levels on seven different levels of education, without any clear linear relationship (but perhaps a curvilinear relationship).

In our material, there is a clear tendency for the outliers on the scale for educational level to behave as expected, based on a hypothesis that a lower educational level among parents will increase the chances of experiencing problems. Descendants whose parents have a long university education report fewer problems than those whose parents have a low level of education. But the groups in the middle of the scale, westerners and the majority, do not report as expected based on a hypothesis of a straight line relationship. This probably contributes to the effect of class appearing lower than it actually is. It should be taken into account that class is a "movable target" in relation to ethnicity and gender. A career often involves social mobility, but rarely gender mobility or ethnic mobility.[30]

The proportion having different levels of education has changed greatly over time. High university education among parents was rarer a generation or two ago than today. However, this difference is not very dramatic in our material. The parents' average level of education is roughly the same among the young and middle-aged, but noticeably lower among seniors (age 56+).

We took a closer look at parents' education in regard to gender. Is the effect different based on the mother's or father's level of education? And is it different for women and men? Here, the results are clear. The answer is "no" on both counts. The mother's and father's levels of education have roughly similar effects. As far as we can see, both are problem reducing in roughly the same way. Moreover, analyses show that this pattern is relatively similar across genders.

Briefly summarized, we can say that class has an effect quite independently of gender and ethnicity, but the effect is less obvious in the material than one might expect, based on the fact that class is such a central dimension in research on education. It is not surprising that the

university provides a certain “bonus” to those whose parents have a long university education. One could imagine that with class included in the picture, differences based on ethnicity or gender would be relatively small. This is not the case in our material. A possible interpretation is that class is a more “underlying” dimension.

Three Problem Profiles: Ethnicity, Class and Gender

The FRONT material provides an opportunity to analyze the importance of the dimensions ethnicity, class and gender, in relation to career, environmental and cultural problems. What are the challenges connected with these, and how do they interact with each other? Before we can analyze this, it is important to identify each of these dimensions as clearly as possible. We will, therefore, first consider each of them separately. The analyses shed light on effects in relation to a number of environmental and cultural variables. The result is three different “problem profiles”.

Here is the problem ranking based on ethnic difference, showing some characteristicss of the ethnic problem profile:[31]

Have to work harder than colleagues (correlation .155)
Reluctant to raise issues (.117)
Reluctant to speak my opinion (.104)
Constant scrutiny/assessment (.074)
All in all, the effect of ethnicity is visible on approximately 10–20 per cent of the environmental variables in the survey.

Here is the profile in relation to social class:

My area of research has low status (–.116)
Limited job opportunities (–.104)
Have to work harder than colleagues (.071)
The effect of class is visible on 5–15 per cent of the variables in the survey.[32]

The problem profile in relation to gender:

No access to role models (.135)
I cannot express my preferences (.132)

I do not fit in (.128)
Culture with long working hours (.115)
Have to work harder than colleagues (.107)
Lack of supervision (.106)
My area is too interdisciplinary (.105)
Reluctant to speak my opinion (0.97)
Periods of part-time work (.094)
No participation in committees (.093)
Lack of support (.092)
Constant scrutiny/assessment (.087)
My contributions are not valued (.084)
Professional isolation (.079)
The effect of gender is visible on approximately 50–65 per cent of the variables in the survey.

We see that ethnicity, and particularly class, have fewer visible effects on the problem level than one might expect compared with gender. If class and ethnicity are important dimensions, why are they not more visible? Is the faculty more characterized by gender division than ethnic or class-related division? What does the "gender gap", as described in Chapter 5, mean if we also consider other important background dimensions?

Intersectional Analysis

In order to take a closer look at ethnicity, class and gender in relation to each other, we analyzed each dimension – including the other dimensions in the picture. This is often called intersectional analysis, for example in gender research. The idea behind this is that various forms of differential treatment must be understood in a broader context, and as a whole. Thus, intersectional analysis may provide a better understanding of different groups among students and employees. The "classic" point of departure for intersectional theory is a situation in which different types or grounds of discrimination, for example, being black *and* female, reinforce each other (Crenshaw, 1989).

We investigated this through several types of statistical analysis. First, we looked at the interaction between background variables in regard to the problem profiles described above, and then we looked at the intersectional interplay. The analyses show three clear results.

Firstly, we see that the background dimensions – ethnicity, class and gender – are largely independent of one another. It is not the case that one of them stops working when the others are included in the analysis. The effects are essentially the same, yet somewhat moderated. In other words, the problem profiles are relatively similar, regardless of whether other background variables are included in the analysis or not. This applies particularly to the two clearest profiles (ethnicity and gender).

Secondly, it appears that the intersectional effect remains limited, even if we apply different methods to bring out the connections. The grounds for discrimination may be "added up" (a technique that has been criticized) or "multiplied" (for further discussion about the methods, see, e.g., Christoffersen, 2017; Dubrow, 2008; Krause, 2019). Both imply that "interaction elements" are included in multivariable analyses (ethnic + gender, or ethnic × gender). Neither of them show large or clear effects in our material.

Thirdly, we see that the intersectional interplay that actually exists cannot be summarized in one simple formula. The most obvious intersectional effect has to do with ethnicity and gender, but only partially how one might expect – that a low ranking in one dimension goes hand in hand with a low ranking in the other. One could easily presume that a low ranking in the ethnic dimension (ethnic = minority) would go hand in hand with a low ranking in the other (gender = woman). This group ought to have the highest score on problem variables, like having to work harder than colleagues and academic devaluation (scrutiny). But the empirical results are different. It is the men, not the women among the minorities, who most often report problems compared with the majority of the same gender.

In our material, such connections are best revealed through detailed analyses. The figure below offers an example.

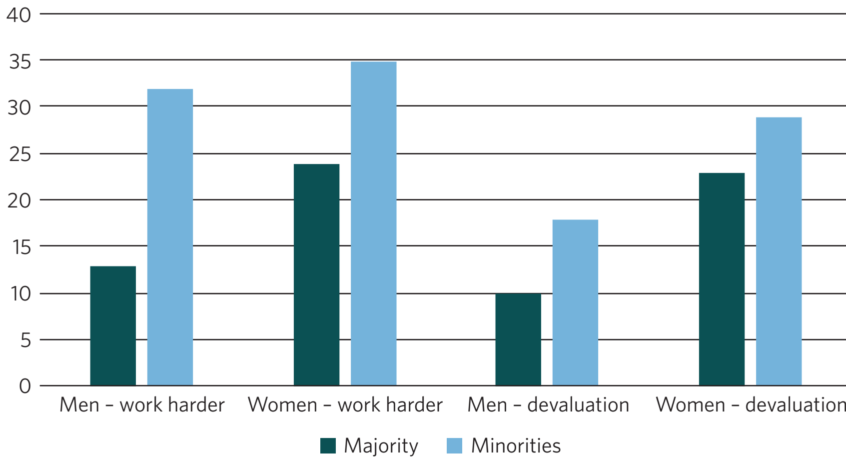

Figure 6.1. Work Environment Problems by Ethnicity and Gender. The columns show the proportion of "yes" answers (strongly agree and agree) in percentages for two problem formulations. Source: FRONT employee survey (N = 843).

The columns show the proportion of "yes" answers (strongly agree or agree) in percentages for two important problems, divided by gender and ethnicity.[33] We see that the problem proportion is generally higher among women than among men, and higher among minorities than the majority. We also see that the distance between majority and minority is greater among men than among women, especially for working harder than colleagues.

A relevant term from role theory is *incongruence* between different roles or positions. For example, problems are greatest (or perceived as greatest) for a low rank in one dimension, but for a high rank in another. This may explain why ethnicity, in our study, appears to have stronger effects for men than for women on important variables related to ethnic discrimination. Problems are greatest for minority women (as expected based on intersectional theory). At the same time, the effect of ethnicity for men is greater than what one perhaps might expect. We also have some indications of intersectional interaction in a more traditional sense. This is based on the fact that non-westerners also have a lower proportion of parents having a higher education, but these effects are relatively weak and uncertain.

Two reservations should be mentioned. First, our material may be too limited to reveal intersectional effects clearly (enough). Paradoxically, a large amount of material is needed to uncover something that is mainly about individual effects. Second, and perhaps most importantly, intersectional effects being moderate on an aggregated statistical level, does not necessarily mean that they are not important on an individual level. They might be extremely important to some individuals or groups, while they simultaneously do not have a large and clear impact on the overall picture.

Discussion

As mentioned, 11 per cent of non-westerners, and 8 per cent of descendants say they have experienced unwanted racist attention at the faculty, mostly by colleagues. A survey of young researchers in Norway shows a similar tendency (AYF, 2019). There, nearly 25 per cent of foreign-born researchers reported discrimination due to their immigrant background. The researchers emphasize that experiences of discrimination and sexual harassment have a strong negative impact on wanting to recommend an academic career to others, and that discrimination is a particularly strong factor.

Is racism part of a broader pattern of differential treatment? Here, our results point in slightly different directions. We find a clear underrepresentation of non-westerners on the top level (professors),[34] but apart from that, there are few signs of skewed representation on position levels.[35] Descendants and western foreigners are not clearly underrepresented on higher levels compared with lower levels. However, it is possible that a more precise research design focusing, for example, on employees with a specific national background (such as Asia or Africa), would show different results. Thus this should be interpreted with caution.[36] Nevertheless, we do not see any clear work displacement to the minorities' disadvantage, or any other visible signs of ethnic discrimination. However, one of the groups (descendants) experiences bullying more often than the majority.

This may be interpreted to suggest that structural discrimination is relatively low or indirect, which is also reflected in mostly positive reports on the culture at the department or unit. Even within exposed groups, there is general agreement that the culture is non-racist and diversity-friendly. We also see that the different groups are quite similar in terms of gender equality in the household. On the other hand, minorities report problems with the work environment more often, especially on a few (but essential) variables. For instance, these have to do with skewed work requirements, and that they report roughly two more working hours per week than the majority.

At the same time, it becomes clear from our study that the "problem profile" related to gender is more extensive than for ethnicity. Why are problems so much more visible in relation to gender compared with ethnicity and class? One interpretation says there are two factors at work. One factor is more reporting and criticism in relation to gender than to ethnicity and class, and another factor is that gender differences *are*, in fact, greater than ethnic differences. In other words, one hypothesis is "subjective", and one is "objective".

Let us first look at the subjective hypothesis. The point of departure here is that different research methods, including an anonymous questionnaire form, are influenced by the threshold for reporting problems. If this threshold is different for the exposed groups within various dimensions of discrimination, the results will provide an incorrect picture of the actual extent. They will be somewhat spurious and misleading. Conditions related to shame and stigmatization – typical factors behind low reporting – are perhaps stronger in relation to ethnicity than to gender, and may therefore contribute to such a result.[37]

But is this something we know? It is true that we have a number of interviews with foreigners who talk about better conditions in the Norwegian university system than in their home country. This relates to a more equal opportunity to combine being an active parent with pursuing an academic career, and that women are treated better in Norway. Other than that, the signs are not so clear. Some interviewees mention a "being grateful role" among foreigners. But all in all, the hypothesis must be described as uncertain.

The actual situation at the faculty is that gender equality work has developed over time and is more well-known and recognized than work for diversity. Based on research focusing on gender, we see that individual experiences related to gender are changing and are increasingly interpreted as systemic problems when discussed (described in Part 3 of this book). This might also be the case with ethnicity. If we had the opportunity to delve deeper into this dimension, and if there had been more focus on this issue at the faculty, the racism-related problems would perhaps have been more clearly reported. Nevertheless, we believe this is a minor limitation of the study, and that the reporting is relatively realistic as it is.

The objective hypothesis is that differential treatment in relation to gender is *actually* more extensive than discrimination based on ethnicity and class. The material provides many indications of this. For example, we see that the problem profile based on gender is broader and more extensive than the profiles for ethnicity and class. At the same time, we see that the reported extent of racism and sexism is relatively similar. A moderated version of the objective hypothesis probably makes most sense – namely, that division or *segregation* based on gender is considerably greater compared with ethnicity and class.

To put this in perspective, one can imagine what would happen if the university were as clearly ethnically (or class) segregated as it is gender-segregated. This would undoubtedly result in criticism and debate. It could easily be considered a type of apartheid. Gendered segregation, which is not found in the other areas (ethnicity and class), may explain some of the differences in the extent of the problem.

This does not necessarily mean that *direct* differential treatment is greater in relation to gender than to ethnicity or class. But *indirect* differential treatment is greater, primarily because the university maintains (or even encourages) gender segregation in various disciplines.[38] In other words, gender segregation has a stronger *structural* component than the other dimensions. We discuss this further in Chapter 8, where we demonstrate how an apparently purely horizontal gender division in the first part of a career path may result in a vertical gap at a later stage, with a low proportion of women at the top.

This hypothesis also provides the opportunity to understand the ethnic pattern better. Problems are most visible on the actor level than on the structure level. They peak especially on some points: minorities feel that they have to work harder than their colleagues in order to be equally recognized; and report more often that they have to be careful about expressing their opinion. Descendants report bullying more often. Ethnic disparities appear to be greatest for problems on the actor level, which manifest themselves in competition on an informal level especially, for example in terms of who delivers "good enough" results. Minorities tend to compensate for this by working more than the majority.

Based on studies of men and masculinities, it is not surprising that problems related to being in an ethnic minority position are more visible among men than women. This can be linked to patterns in which men are (still) expected to be superior and that the fall, therefore, becomes greater when they are not (see e.g., Ekenstam, 2006; Kuosmanen, 2001). In hegemonic masculinity theory, race is one of the mechanisms putting men in the "subordinate" masculinity position (Messerschmidt, 2016). Results show that experiences of racist attention are a real problem – it is not marginal even though it applies to a minority. The extent of experiences of unwanted racist attention and unwanted sexual attention, within exposed groups, is roughly on the same level. The university's international profile is highly visible in the material. At the same time, there is a long way to go before this becomes a globally balanced profile. The foreign employees are mainly from other western countries. However, we do not see clear signs of ethnic differential treatment upwards on the career ladder.[39] And the large majority – also of minorities – experience the culture in their unit as non-racist and diverse. The hypothesis that minorities have less gender-equal family relations does not receive clear support. In our material, we see only limited signs of less gender-equal family relations among minority groups (but the study is not an in-depth study of this question).

On the other hand, we see that not only do minorities report unwanted racist attention far more often than the majority, they also report bullying more often (among descendants). Moreover, they report work environment problems more often, particularly experiences of having to work

harder than their colleagues in order to be recognized, constant scrutiny and evaluation, and hesitation related to raising issues of concern. The specific questions on experiences related to the work environment reveal greater differences than the general questions on academic culture.

Analyses of problems connected to ethnicity, class and gender show that each of these dimensions works relatively independently, yet they may be affected by each other. We essentially find the same picture in analyses including the interaction effect between dimensions. This may be interpreted in the sense that intersectional interaction is relatively limited. However, this applies on an overall general level, and not necessarily to individual cases. The most visible interaction effect appears in relation to ethnicity and gender. The effect is partly to be expected, that low status in both dimensions offers the most chance of reporting problems – but also, somewhat more unexpectedly, that the effect of ethnicity is often greater among the men than the women in the study.

All in all, the results indicate that differential treatment based on gender is more visible and extensive than differential treatment based on ethnicity. The class dimension is even less visible. We have discussed this from a "subjective" hypothesis, that the threshold for reporting problems is higher in relation to ethnicity and class than to gender, and from an "objective" hypothesis that gender segregation is, in fact, greater than segregation related to the other dimensions. The two hypotheses are not mutually exclusive.

The results and the limitations of our study are indicative of a major need for further research. How do various ethnic groups experience the situation? Within some groups, the proportion of people who have experienced unwanted racist attention or associated environmental problems may be considerably higher than what emerges in our material. "Descendants", "westerners" and "non-westerners" are all heterogeneous groups, for example in terms of skin colour. More targeted studies might reduce such problems. Our interview material includes experiences of racism and discrimination, but it is not an in-depth coverage of diversity issues. For instance, we do not know much about the "construction of whiteness", how it happens, or how important it is. What becomes clear is that problems of unwanted racist attention and racism are not marginal,

even if they relate to a minority. They are also associated with other and more common problems within the work organization. This resembles the situation regarding gender and unwanted sexual attention. A problem that may seem marginal at first, directly affecting only a minority, turns out to have wider effects. It is obvious that both culture and structure come into play, as they do for sexuality and gender. Further research can help identify the factors that may be linked to differential treatment and discrimination based on ethnicity.

We asked whether gender equality and diversity are opposing goals. Our study demonstrates that a gender equality research approach, using questions and variables derived mainly from gender research, can be extended to provide new insight into ethnicity and class. These dimensions would not become "diminished" through a gender equality approach. Instead, they can be better identified and understood.

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Notes

1 "Diversity" is used as a collective term for a reduction of the various grounds for discrimination mentioned above, normally with ethnic diversity or equality as a main issue (in addition to gender equality). Other grounds of discrimination, such as sexual orientation, gender identity, gender expression, disability and age, are more seldom discussed.

2 A study of the higher education sector in Norway shows that "mathematics and natural sciences (45 per cent) and technology (34 per cent) had the highest proportion of immigrants and descendants of immigrants among researchers and academic personnel in 2014, whereas the social sciences had the lowest proportion (17 per cent)." These percentages had increased considerably during the period 2007–14. The University of Oslo was among the institutions with the highest percentages (Gunnes et al., 2016).

3 The actual proportion of non-westerners among employees at the faculty is possibly somewhat higher, since the survey had more drop-out among employees in recruitment positions, where many non-westerners are found, than among permanent employees.

4 Interviewees were not chosen specifically based on nationality or ethnicity.

5 The Equality and Anti-Discrimination Ombud represents the interests of those who are discriminated against. The Ombud also work to prevent discrimination and promote equality. The office of the Ombud is a government agency, but the Ombud operates independently from the government and cannot be instructed by other authorities.

6 The Ombud must therefore protect against eight grounds of discrimination. The list of grounds has increased. In 2016, there were six grounds. The two most recent ones are protection against discrimination based on gender identity and gender expressions. It is interesting to note that discrimination based on social class is (still) not on the list – although we cannot discuss that here. It is well known within educational research that social class is a discrimination factor (see e.g., Vidnes, 2019).

7 "Nationality" was not defined in more detail in the questionnaire survey (which was in English), but we assume this is usually interpreted as citizenship. Nor was "family background" defined in any more detail. It had the response options "Norwegian", "Mixed (both Norwegian and not Norwegian)" and "Not Norwegian".

8 "Western" was defined as OECD countries minus Japan, South Korea, Chile, Turkey, Mexico and Colombia (and Norway), the rest as "non-western". Note that "descendant" does not necessarily mean children of non-western parents (this proportion is unknown to us).

9 We have a lot of data on differential treatment, but little on what constitutes discrimination – that would require another investigation.

10 The interviewees were not specifically selected based on nationality or ethnicity. The proportion of non-westerners was small, but the Norwegian/foreign nationality distribution was approximately the same as in the questionnaire survey, which is roughly one-third foreigners.

11 The questionnaire survey consisted of 190 questions on career development, choice of natural sciences, supervision, career breaks and use of leave of absence, as well as one's situation as an employee, including work environment, academic culture, ambitions, satisfaction and family situation (see Chapters 1-5 and Appendix "Method").

12 Probably also because some of them have other western family backgrounds and have changed to Norwegian citizenship (we do not have precise data on this proportion).

13 The non-westerners also constitute a relatively large proportion of the position level "researcher" (which is not included in Table 6.1).

14 At the same time as a lower percentage of employment from abroad may be factual, based on a greater proportion of unqualified applications.

15 The question on the desired distribution of working hours was posed immediately after the corresponding question on actual distribution. "To achieve promotion/success in your job, what percentage of your working time do you think you need to spend/should have spent on each of the following areas?" with the response options: teaching, research, administration, consultancy/expertise, and research value creation. The two last alternatives received very few answers.

16 The employee survey was in English, and the question was formulated in the following way: "Unwanted racially motivated attention (such as racist remarks, questions, jokes, teasing)."

17 The question was not time limited.

18 The figures are for the MN faculty.

19 Questions on the culture in the unit are very generally defined in comparison to the more specific questions on the environment discussed below.

20 In other words, they encounter somewhat more pressure in their work situation. But culture probably also comes into play, meaning it takes time to adapt to the Norwegian culture and mentality, also for foreigners with western backgrounds, or when one changes to Norwegian citizenship when acquiring a permanent position in Norway.

21 Many of these researchers were strongly focused on career and competition. A possible interpretation is that it did not suit their self-image to address unfair or too fierce competition.

22 Somewhat uncertain due to small figures.

23 The central importance of informal rules of the game – "How things are done here at the faculty" – also emerges in relation to gender in the material (see also Løvbak & Holter, 2012), but the challenges may even be greater for employees from other cultures.
24 That is, a tendency resembling the one we find in relation to gender.
25 Not learning Norwegian when one is required to make a long-term commitment may involve a certain work displacement on a given level, for example a researcher or associate professor who cannot contribute to teaching in Norwegian, meaning that others on the same level must do it instead.
26 For example, the employee survey was in English, not Norwegian, which may have weakened the response rate.
27 The Research Council of Norway.
28 Referee = qualified peer reviewer providing an independent assessment.
29 This perhaps often happens when developing a kind of "transitional language" or a preliminary working model for understanding. Here some of the new things about Norwegian culture are included in the picture, such as gender equality, but the "old" background, for example experience from the German higher education system, nevertheless characterizes understanding and general sensemaking in relation to the organization.
30 In a study of the engineering culture in a private oil company (Holter, 1990), the researchers included a question directly relating to current "social mobility", namely "What is your current wage level?". To many, this was more difficult to answer than questions about gender equality and private life. Lysgaard's (1967) classic study of the working collective included secrecy of wage level as a problem variable.
31 Only statistically significant correlations are included in this overview.
32 Here, class is encoded in line with ethnicity and gender, meaning that low status in the dimension is ranked on top and high status on the bottom. Those with high class status thus talk a little less often about the problem of having to work more than their colleagues (.071).
33 Minorities are here defined as non-westerners plus descendants, in order to obtain more certain data material.
34 This result seems to apply to the leadership level in the higher education sector generally. A count conducted by the trade journal *Khrono* in 2020 shows that 22 of 273 leaders at Norwegian universities and colleges have a background from other countries, but only 2 have a background from countries outside of Europe and North America (Økeland-Stai, 2020).
35 Better data on this requires, among other things, insight into employment processes, see further Orupabo & Mangset (2021), discussed in Chapter 8.
36 On western dominance in research and theoretical development, see also Connell (2006).
37 On stigmatization, see e.g., Goffman, 1975; Holter, 2004.
38 "Encourages" in the sense of passive and indirect facilitation – not that one consciously seeks to promote greater gender divisions. But the education programmes – presumably especially on the master level – are designed in such a way that, in practice, they create great gender differentiation among the students (see Chapter 5).
39 The exception, the absence of employees from non-western countries on the professor level, may, as previously mentioned, at least partly be explained by other factors, including lower age and an early career phase.

Part Two

Models and Interpretations

The purpose of the analyzes presented in the book's first part was to understand attitudes to gender and equality among students and employees at the Faculty of Mathematics and Natural Sciences in the University of Oslo, as well as the significance of gender in the organization. The chapters document a considerable divide between the institution's meritocratic ideals and students' and employees' actual experiences, particularly in relation to gender. Female students and employees report problems and disadvantages more often than their male colleagues. This creates a statistical pattern reflected in a number of variables such as career, work environment and academic culture. The "gender gap" remains also when controlling other variables relating to career, such as position level, age, social background and ethnicity (see Chapter 6). This pattern is particularly visible in the statistics gathered from the questionnaires. However, the interview material also demonstrates a significant element of skewed selection and uneven distribution of disadvantages among women and men in the organization.

These results came somewhat as a surprise. We did not anticipate them. How, then, should this be interpreted? In the book's second part, we use the findings from the first part as a point of departure, and examine how we may connect these results to models attempting to explain both what causes the gender gap in the organization, and how to understand the problems related to this gap.

The primary purpose of the three models, the Bøygen model (sometimes spelled the Boyg in English), the Janus model and the Triview model, is to shed light on various factors that affect gender imbalance. The Bøygen model shows how accumulated disadvantages for women influence their career patterns. The Janus model explains why women experience obstacles and disadvantages through a blend of gender differentiation and gender stratification. Lastly, the Triview model describes various perceptions of gender imbalance and related topics at the faculty, and how these affect academic culture and career development.

The three models may be seen in connection with each other, but they represent different perspectives. The Bøygen model has a partly social psychological perspective, whereas the Janus model focuses on social structures or institutional processes. The Triview model, on the other hand, deals with culture and discourse within the faculty, that is various prevailing views on gender and gender balance.

The models' theoretical background involves theories on gender and equality within various disciplines, including theories on gender role structures, gender and power, social inequality, organization theory, and discourse theory. This is described in more detail in the various chapters. We wanted to avoid "locking" the models to one specific theoretical tradition. Instead, the models are made to be interpreted and developed further based on various disciplines and academic traditions. In other words, they are intended as a "meeting place". Consequently, the models do not require taking a stance in the debate on nature and culture in relation to gender, what is most important, and so on. They require only an agreement that gender includes essential cultural and social elements. Our strategy was to develop models that may be applied across disciplines, rather than polarizing the debate, in which case gender becomes

either "purely social", an exclusively cultural construction – or "primarily biological".

Development of the Models

The three models were developed as part of the FRONT project to obtain an overview of the comprehensive data material, and further develop academic discourse both within the project and at the faculty. They are, in other words, unique to the project, although they are in part based upon models and findings from other research, as referred to in the relevant chapters. The intention behind the models is to describe dominant patterns found in the material and how these patterns may be connected. Each model has a metaphor, a keyword, characterizing the process or the pattern it is meant to describe – Bøygen, Janus and Triview. The models are intended as working tools to better understand the results, rather than as a final conclusion.

As part of the project, the three models were presented and debated at seminars for employees at the faculty. The intended purpose was that employees would assess the models and their validity themselves, and generate a dialogue between the project's researchers and its participants. For instance, the Bøygen model shows how external resistance may cause inner doubt on the individual level. Is this a relevant perspective? Are there other types of responses as well? The Janus model assumes that women (and men) face a combination of horizontal and vertical discrimination – is this a helpful perspective? Is it true, or not, that the centre of gravity shifts somewhere during the course of a life and a career, from horizontal differentiation to a more vertical and apparently gender-neutral ranking?

The Triview model describes how various views on gender balance lead to different types of both strategies of change and resistance to change. However, is it true that the perception of a lack of gender balance is characterized by three principal views, namely that it is not a problem, that it is a women's problem, or that it is a systemic problem? These were questions that each individual could explore within their own research community or academic culture. The models were then further developed based on

discussions at the faculty. The Janus model, for instance, was first introduced in a simple, introductory form before it was presented again in an empirically revised form. This approach functioned as food for thought and created curiosity about the FRONT project's initiatives, such as management development and PhD supervisor seminars (see part three of the book). The project's action research has shown that these models are "useful to think with", particularly when formulated openly.

About the Chapters

Each chapter presents a model based on our analysis of the empirical results in the first part, in light of other relevant research and theory.

Chapter 7 on the Bøygen model summarizes research on the gender gap (from Chapter 5) in view of international research. Moreover, the chapter describes the hypothesis of the accumulation of disadvantages, and sketches a "Bøygen model" from this, in which several obstacles or disadvantages contribute to skewed selection. Bøygen creates inner doubt within the individual, who faces an invisible adversary.

Chapter 8 on the Janus model addresses the structural conditions contributing to Bøygen's significance. It describes how equal discrimination based on gender exists alongside an indirect gender ranking. What may be regarded as "different" early in a career, in practice often means "inferior" later. The accumulation of disadvantages for vulnerable groups – in this case women – is not only about random incidents. They follow a dominant pattern from legitimate differentiation on a lower level to concealed and illegitimate gender ranking on a higher level. The model demonstrates the impact of gender role structures, even at a faculty where most people want gender equality.

Chapter 9, on the Triview model, addresses discourse and culture viewed from the three most common perspectives on gender balance reflected in the FRONT material: that the imbalance is not a problem or merely a small problem, that it is a women's problem, or that it must be regarded as a systemic problem. Divided discourse on gender balance is linked to academic culture and organizational sensemaking. The chapter also includes a summary of connections between the three models.

CHAPTER 7

The Bøygen Model: The Hypothesis of Accumulated Disadvantage

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Abstract: Material from the FRONT project shows significant gendered differences in how the working environment and organizational culture are experienced. It is not a single factor that negatively affects women, but a complex process involving many components over time – with different causes and modes of action – together giving an accumulated disadvantage. These processes and their effects are summarized in a model called "Bøygen", after the creature who creates obstacles and counter-forces to Peer Gynt in Ibsen's play. The academic version of Bøygen operates partly through an "accumulation" of disadvantage throughout the academic career, and partly through experiences that tend to cause loss of self-confidence and motivation. External resistance and lack of support translates into inner doubt. The Bøygen model is discussed in relation to international research on the effects of barriers to women in academia. The model is the first of three theoretical contributions to the project (Chapters 7, 8 and 9) based on the empirical content in Chapters 1–6.

Keywords: accumulated disadvantage, working environment, organizational culture

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Introduction

The material from the FRONT project described in the first part of this book demonstrates a considerable gender difference in experiences with the work environment and organizational culture. Women experience more problems than men from student level to top academic positions. How should these results be interpreted? Do they indicate that women and men have unequal opportunities for making a career in academia? Do they face different challenges? Do these experiences of the academic work environment and culture affect their trust in their own ability to succeed as scholars – and thus also their desire to continue their career in academia?

In this chapter, we will look at the material from the FRONT project in light of international research and discuss whether we are, in fact, dealing with a coherent *pattern* rather than a clear but nevertheless quite random tendency. Are we dealing with an ongoing system of gender-related unequal treatment and discrimination – or is this primarily about exceptions or delays due to tradition? We summarize the results in a model called "Bøygen" (sometimes spelled the Boyg in English), from the figure creating obstacles and counter-forces to Peer Gynt in Henrik Ibsen's play of the same name. As a point of departure, the model uses the results from the FRONT project, and research on how external resistance leads to inner doubt and loss of self-confidence. Bøygen does not "force" people out of academia, but it contributes to specific groups "choosing" to leave. There is a general consensus among researchers that the work environment and organizational culture are extremely important for the dropout rate of women on their way towards the top. However, we still lack a thorough understanding of these processes, and the Bøygen model seeks to contribute to a better understanding of this empirical pattern.

The chapter is organized in the following way: In the first part, we briefly summarize the results from the FRONT project. The second part presents international research on how experiences from the work environment and organizational culture might affect careers. Then we present the Bøygen model, summing up the evidence and describing how the model works. In the next part, we discuss how the model may explain a part of the overall picture of persistent numerical male dominance at the

top level through mostly indirect mechanisms, often without any explicit reference to gender, which is still not fully elucidated in international research. We also discuss the model's relevance in terms of intersectionality and other dimensions of social inequity (ethnicity, social class). Finally, we present needs for further research.

Background: Results from the FRONT Project

Results from the FRONT project at the Faculty of Mathematics and Natural Science, University of Oslo, described in the first part of this book, demonstrate what we referred to as a "gender gap" in terms of experiences within the work environment and culture. This gap is sometimes relatively small, sometimes moderate, and other times very large. For instance, the results show that women experience negative social treatment three times as often as men do, academic devaluation twice as often, and professional isolation one and a half times as often. Additionally, they experience many other problems more often than men (see Chapter 5).

One main feature is that this gap is seen throughout. In other words, it is visible on a number of variables and questions in the survey. This fact not only applies to questions in which one would expect women to report more negative experiences than men, for instance, that women experience sexual harassment more often. But it is also the case for a significant number of questions where one would not necessarily expect a clear gender difference, such as those related to academic evaluation and professional isolation. The gender gap is visible on different position levels. Those responsible for the problems – those contributing to, for example, academic devaluation and professional isolation by exposing others to negative attention – are fellow students, colleagues, supervisors, and leaders. In other words, no distinct group stands out as particularly responsible. Instead, there is a pattern within different groups on all levels.

In the survey, the gender differences found in the responses are often considerable in the more summarizing questions related to work environment and career. One way to interpret this is that these answers

summarize a range of different experiences and incidents (Chapter 5). We have also seen that the gender gap is not significantly reduced when controlled for ethnicity and social background (Chapter 6).

In international research, one of the problems affecting women particularly is called *micro incidents* or *micro aggressions* (see e.g., Husu, 2001). They involve small but nevertheless significant incidents to which some people are exposed. Since this often occurs over a long period of time, perhaps during one's entire academic career, the effects are summarized as an *accumulation of disadvantage* (see e.g., Valian, 1999). Research on the accumulation of disadvantage and micro incidents or micro aggressions, described more thoroughly in the next part of this chapter, is clearly relevant for our survey results.

Accumulation of Disadvantage

Differences between women and men in the experience of the work environment and organizational culture similar to those found in the FRONT material were described already in the late 1990s when Valian (1999) formulated the hypothesis of the accumulation of disadvantage. Valian's point of departure was to find explanations as to why women dropped out or were pushed out as they climbed the career ladder. According to this hypothesis, no single factor squeezes women out. Instead, it is a complex process involving several components working over time – with various causes and effects. In part, women may be pushed out; in part, they pull out themselves – and their stories are often a combination of the two. Valian described the accumulation of disadvantage as a countless number of "molehills" piling up to a vast mountain standing in the way for female researchers (Valian, 1999).

Similar results have emerged from Nordic research. In a study of Finnish academia, Liisa Husu (2001) describes how what she refers to as micro incidents or micro aggressions affect not only the researchers' direct working conditions and career development, but also their self-esteem and career expectations. Some micro incidents caused the researchers to be pushed out of academia, or they pulled out by their own choice. Husu (2005a, 2005b) emphasizes that some of the incidents may

appear trivial, but since being part of a long process, they generally have a major effect.

According to Husu (2001, 2005a, 2005b), micro incidents and micro aggressions are not necessarily incidents. Perhaps something does *not* happen: "What happens may really be that 'nothing happens' or that something that is supposed to happen in your career does not: you are not seen, heard, read, referred to or cited, invited, encouraged, supported, validated" (Husu, 2005a, p. 23, translated from the Swedish). When seen individually, these non-incidents may appear harmless. However, when marginal disadvantages accumulate over time, they may have clear implications for gender balance in academia. The fact that a researcher's article is not cited is an example of a micro incident. If this happens once, it may have little or no significance, but if it happens several times, the effect will be that the article will not be read by other researchers. As a result, the researcher may not be invited to conferences or to participate in research collaborations, which in turn may have a significant effect on her or his further academic career. Consequently, repeated micro incidents have major effects on interactions within the academic community, as well as on the researcher's own actions and self-confidence. When an article does not receive any attention, both the researcher's and colleagues' interpretation is often that it is not a good article (Husu, 2005a). In their later research, Valian and colleagues describe, like Husu (2001), non-incidents as a part of the accumulated disadvantages. The researchers emphasize individual experiences of exclusion, such as being excluded from important meetings, and institutional practices that make exclusion invisible (Stewart & Valian, 2018).

The hypothesis of accumulated disadvantage has received considerable support in scholarly debates in relation to the natural sciences, especially in American research. Astrophysicist Meg Urry maintains that, "women were leaving the profession not because they weren't gifted, but because of the slow drumbeat of being underappreciated, feeling uncomfortable and encountering roadblocks along the path to success" (Pollack, 2013). Ivle (2012) confirms the hypothesis through a questionnaire survey of physicists in 130 countries. The results "reflect an underlying reality of disadvantage" for women (Ivle, 2012). In this survey, the women reported

having less access to resources, such as research funding and office support, and that they were not as often invited to give lectures or participate as members of important committees. The gender differences were sometimes relatively small, but nevertheless evident across the variables. The pattern of additional disadvantage for women differed somewhat, but not much, from country to country. The study may be interpreted as essentially an academic culture with clear common international features.

In a British and an Irish study of academia, the researchers also found a gender gap in additional disadvantages for women visible in many areas (Aldercotte et al., 2017; Drew, 2013). Women had fewer research resources and less office support than men. They also received less positive feedback, less recognition, and were not as often encouraged to apply for positions (Aldercotte et al., 2017; Drew, 2013). The studies also showed *work displacement*, meaning that women spent more time on teaching and administration duties, while men spent more of their time on research. Scandinavian studies have also confirmed this tendency (e.g., Vabø et al., 2012; Vetenskapsrådet, 2021).[1]

Other recent research points in the same direction. "Evidence shows that patterns of inequity in physics drive talented women out of the field" (Blue et al., 2018, p. 41). The researchers describe examples similar to cases in the FRONT interview material. "A woman talks to her undergraduate adviser about her desire for a PhD in physics. He replies, 'You know physics is hard. Are you sure you want to try to do that?'."

> A physics major asks a senior male professor for advice on getting into a good doctoral program; he suggests that she flirt more at conferences. In his letters of recommendation for students applying to graduate school, a professor consistently describes his male students as "brilliant" and "outstanding", while praising the women for being "conscientious" and "hardworking". His male students are accepted to more competitive doctoral programs. (Blue et al., 2018, p. 41)

According to the researchers, stories like these must be interpreted in context. They are "examples of the kinds of comments and situations that, taken in aggregate, can combine to create an environment that is unwelcoming for aspiring female physicists" (Blue et al., 2018, p. 41). Accumulated effects are interpreted as an "aggregate", an overall burden,

and the conclusion is that "surveys and studies have found that female physicists, particularly graduate students, frequently encounter micro-aggressions – small interactions that may seem innocuous individually but present a picture of gender bias when viewed in a pattern" (Blue et al., 2018, p. 41). In the same way, a Norwegian study demonstrates how micro aggressions, referred to as "tiresome episodes", affect female researchers in their everyday academic lives (Thun, 2018).

The hypothesis of accumulated disadvantage was formulated as a response to the question of why women dropped out or were squeezed out from a career in academia despite the fact that much visible gender discrimination had disappeared. What researchers like Valian (1999) and Husu (2001) demonstrate, which is confirmed in later research like the FRONT study, is that discrimination continues, but the process is more indirect and hidden. It is thus more often perceived as an individual problem, as a personal defect in the person who is pushed out or withdraws from competition towards the top. The problems of the system become individualized (see also Dockweiler et al., 2018; Snickare & Holter, 2018). Recent studies confirm that gender discrimination is still a problem in the natural sciences (Nature, 2021).

Historically speaking, gender discrimination in academia has gradually decreased, but it has also changed character. The door to higher education and research, once completely closed for women, was eventually opened – but this does not mean that gender has become insignificant (this is discussed further in Chapter 9). Current governance in academia is characterized by an emerging corporate culture (Ekman et al., 2018). Central questions, such as measures of academic merit, publication points, recruitment and promotion, have become increasingly regulated, and improved gender equality has often been among the arguments for more regulation. Detailed measurements and transparent and objective "hard facts" in the form of, for example, systems for research assessment and bibliometry, leave less room for personal relationships and network connections to have significance in the assessment of candidates. At the same time, studies have shown that even within workplace cultures like this, discrimination of women still occurs. For instance, the chosen standards and target figures within research, teaching and administration

have gendered consequences (Svedberg & Sjögren, 2019). Alternatively, important academic events are organized in ways that promote homosociality, and allow sexism and harassment toward women (Biggs et al., 2018; Ford & Harding, 2008). The system of accumulated disadvantages for women continues – but in changing forms.

When looking at this pattern as a whole, and taking into account that it was probably even stronger in earlier days, it is not surprising that a lack of gender balance is seen at the top, or that it has been changing slowly.

Limitations of the Hypothesis of Accumulated Disadvantage

The hypothesis of accumulated disadvantage for women is thus essentially confirmed in our material (see also Chapter 5). However, it has some limitations and should be interpreted as a helpful "working model" rather than a fully developed model or theory. The hypothesis is not particularly precise. Accumulation may be interpreted as an additive index (an aggregate), in which small and big obstacles are counted together like a pile of different disadvantages randomly dispersed. This is hardly the case. The different parts of the pattern are connected and not randomly distributed. For instance, we see a tendency for negative social treatment to be more common on lower career levels, whereas negative academic treatment is more common on higher levels. The hypothesis does not say much about different "tracks" or gender-typical career paths, which are important in our material.

Neither does the hypothesis say anything about who or what creates these accumulated disadvantages or what causes the most important elements of the pattern. Is it primarily people, such as colleagues, or is it indirect structural conditions like the prioritization of certain types of academic interests and engagements, which are more compatible with men's life patterns, preferences, and career development than women's (Holter & Aarseth, 1993)? What does gender-related bias mean with regard to indirect structures? In our opinion, these weaknesses in the hypothesis are not detrimental, however. The hypothesis does not attempt to be a model or a large-scale theory. It only says something about the final

result, and may be developed in view of different theoretical perspectives and models.

In the following paragraphs, we present a model that further develops this hypothesis by summarizing the results from recent research on the gender gap in academia.

The Bøygen Model

The Bøygen model is based on material on the gender gap and accumulated disadvantage from the FRONT project, as well as other research. The model may help explain why women on higher levels are often ignored or decide to pull out shortly before the top level – and therefore, why the top level remains numerically male-dominated.

As a metaphor, we use the character "Bøygen", known from Nordic folklore and used by Henrik Ibsen in his play *Peer Gynt*. Bøygen appears as a fog-like figure that prevents people from reaching their goals or ambitions. "Go roundabout, Peer" ["*Gå utenom, Peer!*"], says Bøygen in Ibsen's play *Peer Gynt* (Ibsen, 1995, p. 50). Bøygen creates resistance, disadvantage, obstacles – and is a partly invisible adversary. Bøygen works through both external resistance and inner doubt. Whoever becomes a victim of Bøygen starts doubting themselves and their own judgement.

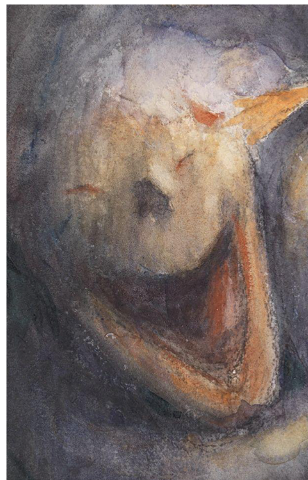

Image 7.1. Bøygen, from Erik Werenskiold's painting *Per Gynt og Bøygen* (*Per Gynt and Bøygen*), 1893. Photo: Nasjonalmuseet/Ivarsøy, Dag Andre.

Bøygen is a dramatic metaphor. Is it appropriate? Our material can be interpreted in a similar way. The disadvantages, or obstacles, are varied and diverse. They often work over long periods. The process is, to a large extent, vague and invisible. The results of the process are internalized within each individual – external resistance becomes inner doubt.[2] In the FRONT material, as many as 22 per cent of the women experience being continuously scrutinized and negatively assessed. As previously mentioned, women experience this approximately twice as often as men. The Bøygen model paints a picture of how such conditions affect the individual over time, within their work environment and academic culture.

In the FRONT research team, we knew about the hypothesis of accumulated disadvantage from Nordic and international research, but the Bøygen model was developed chiefly from the FRONT project's own results. Some of the international research is from countries well behind Norway in terms of gender equality (e.g., the USA), and also it is often several years old. Would a similar pattern appear in today's Norway? We did not know.

The Bøygen model describes a tendency working over time, particularly in two ways. In part, disadvantages pile up or accumulate in experiences during the academic career, and in part, this accumulation leads to a loss of self-esteem and motivation in the longer term. External resistance becomes inner doubt – unless such tendencies are actually prevented or countered. For example, this could mean that although a woman might be genuinely viewed as a top researcher or very close to being qualified as a top researcher, she may not think of herself in such terms, and she might instead choose to "withdraw" from the tough competition at the top.

The Bøygen model is, first and foremost, a summary of the empirical research on the accumulation of disadvantages. It describes a clear empirical tendency, but this does not mean that the model governs everything that happens, or that it cannot be counteracted. Rather, the FRONT material says a lot about how researchers both modify it, work against it, and adjust to it through their career.

The model combines sociology and social psychology. It assumes that external (sociological) resistance *may* (not must) propagate to inner (social psychological) doubt about one's own abilities and suitability for

a top academic position. External conditions have internal long-term effects.[3] The Bøygen model thus says something about a tendency and raises the hypothesis of accumulation of disadvantage to a more theoretical level.[4] It connects this to social psychological conditions, and how people experience and behave in academia on an individual level. Among other things, this has to do with *sensemaking* within organizations, described in more detail in the third part of this book.

The Bøygen model is quite general, and it can describe many different experiences. In our opinion, this is in many ways an advantage. The model enables broad research based on different hypotheses. For example, it can be developed from Acker (1990), and it describes the disadvantages of structure, culture, interactions and identity (Husu, 2001).

At the same time, the challenges become clear. As mentioned, the FRONT material consists of many *individual tracks* – in other words, different experiences and choices along the career path. As far as we can see, these are affected by both roles and norms, and by power relations, discourse, and identity. The Bøygen model is thus primarily a working tool for further research, not a contribution to the major theoretical debate on gender. For instance, it does not say much about what happens on an individual level nor what happens on the structural level (nor on which structural level). It does not distinguish between "structure" and "culture". It is somewhat vague, like the metaphor, the Bøygen figure. The next chapters clarify this model in a wider context, including two other new models: in Chapter 8, the Janus model describes central structures in academia; and in Chapter 9, the Triview model describes the significance of culture and discourse.

Discussion

External Resistance and Inner Doubt

The Bøygen model is based on the assumption that external resistance eventually – as a main tendency – will result in individuals from the underprivileged group withdrawing from competition. This applies particularly to the type of resistance in which the underprivileged, for example women, are *ascribed* characteristics that overshadow their *achieved*

qualities as academics. When such normative conditions become important, the unequal treatment will, as a tendency, become *internalized*. An increased portion of women at the top is thus partly counteracted by the women themselves (see e.g., Acker, 1990).

However, inner doubt and loss of self-esteem are just a few possible responses to a work environment characterized by an uneven distribution of burdens and benefits. Theoretically, for instance, it is possible to distinguish between a compliant, a conflict-oriented and an innovative response to the organization's formal and informal demands (Holter, 1990). The fact that some patterns dominate within an organization does not mean that everyone follows such patterns and informal rules. Instead, the standard picture is characterized by variation among different groups and individuals, who are continuously "renegotiating" what the patterns involve and how they make sense within the organization. This, in turn, provides various opportunities for improving the academic culture and work environment. The chapters in the third part of this book elaborate upon this. Here, we will take a closer look at the model's statement that external resistance creates inner doubt. How well is this supported by existing research?

As mentioned, FRONT's student survey demonstrates that female students more often experience negative social and academic treatment than their male fellow students, whereas the male students more often experience increased self-confidence during their studies (see Chapter 5). The results comply with a large student survey reporting that female students experience more pressure, anxiety and psychological problems than male students (SHoT, 2018). This study shows both an increase in the reported extent of problems and a considerable gender difference to women's disadvantage, which has not been reduced in the period between 2010 to 2016. The report also refers to other studies showing "an unsettling increase in the number of young women reporting a high level of psychological problems" (SHoT, 2018, p. 73, translated from the Norwegian; see also NOU 2019: 3, p. 86).

These results indicate that accumulated disadvantages are turned into personal concerns. They involve personal costs in the form of mental health issues. International research on students confirms that negative

or positive attention over time weakens or strengthens one's belief in one's own abilities (Mayo et al., 2012). According to the researchers, female students have a tendency to align their self-image with the negative comments from fellow students, whereas men often tend to get an inflated self-image from the positive comments. A somewhat similar tendency emerged in a Norwegian study (Thun & Holter, 2013). The idea that one thing leads to another – devaluation leads to low self-esteem – thus has considerable support, and it may even seem as though the tendency is growing.

Overall, the Bøygen model attempts to provide a summary of extensive Norwegian and international research material on the accumulation of disadvantages. Here, the model is empirically sound. It also has substantial support in terms of how disadvantages and obstacles lead to inner doubt, but it is slightly less solid and not fully specified here. What kind of "inner" or psychological effects are we talking about? These are obviously complex connections that will require a more refined version of the model. The interview material and the action research in the FRONT project confirm that self-confidence and self-esteem are essential for the development of future top researchers, for instance. At the same time, most of the women try different strategies *not* to appear as victims or underprivileged. For example, this might mean that they recognize imbalance at the top as a problem, and often think of it as a women's problem, but that it is something that does not affect them – or if it does, that this is something they have counteracted. From our material, it seems that such strategies emerge when the women's male colleagues consider the lack of gender balance as a "women's problem" – and not something for which they have any responsibility. This is further discussed in Chapter 9 through the Triview model, showing how imbalance is problematized, and in Chapter 12 on how resilience or "resistivity" within the organization may counteract the Bøygen model.

"The Medusa Effect'"

As research on gender in academia has gradually uncovered an interaction between different factors and problems maintaining imbalance and disadvantages for women, the need for better interpretations and

explanations has increased. Researchers see a broad picture of problems and challenges. Is it possible to identify underlying patterns and develop models that help explain the process?

"The Medusa effect" (Brandser & Sümer, 2017) is an example of such a model. The Medusa effect is a model that can elaborate on the picture outlined in the Bøygen model. The Bøygen model predicts *that* external resistance or accumulated disadvantages will eventually result in internal adjustment and often doubt about one's abilities. The Medusa model says more about *how* this happens. The Medusa model is based on two crucial findings from international research known as the Matthew effect (Merton, 1968) and the Matilda effect (Rossiter, 1993). Matthew is a tendency in which famous scientists are ascribed results acquired by less well-known colleagues or given more recognition than more anonymous researchers for the same type of work. Matilda describes this from the women's side, with fewer publications and less academic recognition and prestige.

According to the Medusa model, such patterns of masculine superiority (Matthew) and feminine reaction patterns (Matilda) are developed in interaction. The overall effect has a clearly negative term – Medusa. Of what does this Medusa effect consist? The researchers emphasize two key elements – institutionalized codes and gender stereotypes. Brandser and Sümer (2017, p. 32, translated from the Norwegian) write:

> What surprised us the most was that several tenured employees and seemingly well-established female professors across the institutions expressed feelings of being socially isolated and professionally marginalized. We use the term "the Medusa effect" to analyze the factors that possibly contribute to such experiences. In particular, female professors in traditionally male-dominated disciplines made statements about professional rivalry and exclusion. Resistance was expressed through direct or subtle attempts at professional marginalization. Among the mentioned (domination) techniques used by colleagues from the work environment were: withholding common resources, lacking information, exclusion from informal networks, ignoring people at meetings, as well as not citing or referring to publications. Another was "converting" to less prestigious duties.

The results are similar in the FRONT material. The Medusa effect is based on theories of gender as an interactive relationship, not just a

static difference – in other words, something developed in the interaction between the genders, both on a practical level as well as a symbolic level.[5] In terms of gender role theory, this involves internalized expectations and role conflicts. The FRONT material supports an interactional and collective interpretation such as this, although we have not specifically explored the Medusa effect or the model on which it is based. This broader interpretation of gender as a relationship rather than a fixed difference is also consistent with the Bøygen model and the two following models (Janus, Triview) in this part of the book.

Bøygen: Also Among Men?

Research on accumulated disadvantages has focused primarily on women's problems. But is Bøygen actually a gendered figure? Does it only apply to women? Based on our material, the short answer is no – it affects both genders. However, women are affected considerably harder than men, and the ways in which it happens are more prominent and involve more obstacles. The problem pattern is broader and clearer for women than for men, both in the student and the employee survey. This is also visible in our interview material. Several men experience *some* of the same challenges as women, but they are not as widespread and visible, and they seem partly connected to positions typically associated with women, such as men with considerable care responsibilities.

It is nevertheless possible to imagine Bøygen appearing in different shapes – such as different shapes for women and men. Our material does not contradict this possibility. However, it is still mainly in relation to women that Bøygen becomes visible as an overall pattern. We do not find a gendered "problem profile" among men in the same way as we do among women (for a more detailed description, see Chapter 5).

Intersectional Perspectives

The Bøygen model is developed from data relating to gender differences. Is it also relevant to other dimensions of social inequality, such as social

class and ethnicity? We believe the answer is yes, to a considerable extent. We have reason to believe that skewed selection and unequal competition manifest themselves in the accumulation of disadvantages among other exposed groups as well, such as class, ethnicity and other dimensions of inequality. The model's primary mechanism remains the same, but we do not assume that it manifests itself in the exact same way as it does for gender. The various dimensions of social inequality are qualitatively different and work in slightly different ways. In our material, the differences between them become clear. For example, in the various "problem profiles" relating to gender, ethnicity and class, respectively (see Chapter 6), gender forms a more explicit and broader pattern than the other two. This is somewhat surprising, perhaps, especially in relation to social class, which is an important factor in terms of educational research. One possible explanation is that much of the skewed selection relating to class has taken place *before* the levels in our data. The case may also be that the natural sciences actually function fairly equally at this point. We do not know. We have only limited data on those who have dropped out during academic competition, who might have given a substantially different picture.

Systematic research addressing gender in relation to other dimensions of social inequality is still relatively rare (at least in the natural sciences). We mentioned the Asset study, which addresses sexual orientation and disability, among other dimensions. Here, the researchers found a tendency that the benefits for male respondents were limited to those who identified as heterosexual and those who did not have any functional problems (Aldercotte et al., 2017). Our data do not say much about this. Regarding ethnicity, the researchers found that this increased the unequal treatment in relation to gender. They quote from an interview: "Being a woman allows by default that senior management can take credit for the outcomes of the hard work carried out by women. This is more the case with minority ethnicity. Gender/ethnicity plays a key role in taking people for granted in that there is an assumption that key matters need not be discussed with the individuals" (Woman, IT discipline, Aldercotte et al., 2017, p. 28). According to the researchers, the data suggest that men of colour, and women, often face similar or parallel challenges, which

differ from the challenges that white male respondents face (Aldercotte et al., 2017, p. 41). The FRONT material is not as explicit on this point, and we also see variations between different minority groups (see Chapter 6). Some patterns are consistent in different studies, however. In the FRONT, the Integer, and the Asset study, women are somewhat more critical to the environment and the academic culture than men are, across ethnicity and class, and are more likely to talk about problems related to lack of equality.

Conclusion

The empirical mapping in the FRONT project covered a large number of areas and aspects related to academic work-life and career development. The core of this is experience data, that is, questions concerning how the participants experienced their careers. The results demonstrate a wide and consistent tendency that women experience larger problems or obstacles. These findings in FRONT are supported by international research.

This is thought-provoking in view of different social conditions and traditions, especially in terms of gender equality. Countries like the US and the UK are far behind Norway on international surveys.[6] The fact that the gender gap in academia is so similar across countries reveals an academic culture in which many of the rules of the game are shared, enhanced by international competition and mobility between universities.

The Bøygen model uses a dramatic metaphor, and in some ways, the differences are, in fact, dramatic. In the FRONT material, women report twice as often, or more, than men that they experience professional devaluation and other problems. Although some differences are moderate, they still count as part of a broad tendency. Much is "statistical" – that is, disadvantages that may perhaps not be as clear here and now, in each individual case. According to international researchers, skewed selection is often hidden, and the same can be seen in our data. It may appear negligible at first; the differences are not that dramatic. But as the Bøygen model shows, the overall effect can be considerable, and it may

have severe consequences for well-being, learning, self-confidence and the desire to pursue a top career in academia.

The results show that the accumulation of disadvantages is not only a tendency appearing in many different areas (environment, culture, assessment, etc.). They also demonstrate a *pattern,* not just a more or less random tendency. There is a connection between disadvantages and obstacles in various areas. For instance, we see that sexual objectification or unwanted sexual attention is connected to professional devaluation, and that problems following care leave are related to gendered stereotypes. Among the informants affected by the problems, we see a probable line of development from external disadvantages and obstacles to inner doubts about their abilities. The consequence may be that they no longer feel "at home" in their degree programme or discipline, increasing the chance of dropping out. All this does not mean that Bøygen sets the agenda all the time. Many are happy with both the work environment and the culture, but it is a clear minus, an underlying pattern.

The Bøygen model emphasizes the accumulation or piling up of problems, but it does not distinguish as clearly between different types of problems and their possible causes. It is an explorative model, a preliminary map that may be specified further in light of other research, as we discuss towards the end of this chapter. Nor does the model say much about what kind of structural conditions are involved in the gender gap. This is described in more detail in the next chapter, where we describe the two "faces" or modes of operation regarding gender, and how the link between these two contributes to the fact that problems are often hidden or interpreted as purely individual matters.

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Notes

1 Work displacement is our term for "academic housekeeping" tasks that are unevenly distributed, including an unproportioned portion of peer reviews, oppositions, arranging conferences and other tasks, compared to "core" research activity.

2 It is important to emphasize that the Bøygen model was not a model, hypothesis or idea that the FRONT research intended to prove. Rather, it was an interpretation that developed gradually as we analyzed the data in the project. It is, therefore, in line with the grounded theory method in the FRONT project (see e.g., Puchert et al., 2005; Scambor et al., 2014). Models and theories are mainly developed bottom-up based on empirical material.

3 Both factors are obviously both "sociological" and "social psychological" if they are analyzed in more detail. Here, we only present the main angle and tendencies.

4 That is the "middle level" theory development, following, for example, Merton (1949).

5 "Symbolic" includes negotiations involving gender in the organization, for example, among men or women, not just direct interaction between the genders. The theory of hegemonic masculinity emphasizes the development of masculinity in the interaction between men (see Chapter 2), whereas discourse theory and the theory of performativity focus on how different masculinities and femininities are performed or communicated (see Chapter 9).

6 In 2020, Iceland was no. 1 on the gender gap index (the most gender-equal), Norway was no. 2, Sweden no. 4, Ireland no. 7, Great Britain no. 21 and the US no. 53, in a ranking of 153 countries (World Economic Forum, 2020, p. 9).

CHAPTER 8

The Janus Model: Why Women Experience Disadvantages

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Abstract: Why is there an entrenched gender imbalance in the upper echelons of academia, while there is growing gender equality at the lower levels? This chapter investigates the extent to which there may be structural underpinnings to the gender imbalance and presents a model for identifying these structures called the "Janus model" (from the Roman god Janus with two faces). Janus has a friendly face (gender differentiation) and a strict face (gender stratification). The chapter opens with a review of research on gender differentiation and careers, and the background for the Janus model. The starting point is the strong gender differentiation that characterizes academia, especially at the lower levels, while the drop in women and continued numerical male dominance mark the top levels. The model describes how differentiation contributes to stratification at higher levels such that women are in the minority especially at the top. What is at first difference, gradually becomes rank and status. The Janus model shows how accumulation of disadvantage and the Boygen model (Chapter 7) combine with structural conditions. The final part of the chapter looks at criticism of the Janus model, empirical nuance and theoretical development, and links to other new research.

Keywords: gender imbalance, structural models, academia

Introduction

Why does it take such a long time to create gender balance at the top in academia? Previous chapters have shown how academia is characterized by both an increased orientation towards gender equality and persistent gender discrimination, revealing a gender gap in experiences of the work

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environment and culture. The results from our study of the Faculty of Mathematics and Natural Sciences, University of Oslo, support international research on accumulated disadvantages for women in academia, and provide a foundation for the social-psychological model "Bøygen" (often called the Boyg in English) presented in Chapter 7. According to this model, external resistance leads to lower self-confidence, which results in some researchers "choosing" to withdraw from competition, even though they are not "pushed out". The resistance and disadvantages they encounter create inner doubt. However, the model says little about what causes these obstacles and disadvantages. Do the structures within academia, that is, the university's traditional and fundamental ways of functioning as an institution and organization (see e.g., Acker, 1990), have anything to do with it? If that is the case, what sorts of structures are involved? Why do we see persistent gender-imbalance at the top even when lower levels become more gender-balanced?

In this chapter, we discuss these structural modes of operation, and present a model to identify them called "the Janus model". Our point of departure is that gender-imbalance in academia is both horizontal and vertical. The horizontal dimension includes the division into male-dominated and female-dominated disciplines, whereas the vertical includes gender-imbalance in top-level positions. The first refers to a situation in which the genders are different but equal, the second to a situation in which the genders have different ranks or statuses. These are two quite different ways in which gender has significance in academia, but they are nevertheless connected. The model has its name from Janus, the Roman god with two faces. In the Janus model, the university has two modes of operation or "faces" in relation to gender. One is a friendly or smiling face in which gender is visible, but only as a difference, a differentiation. The genders are distinct from each other but equal in status and value. They are not ranked. The other is a stern face in which gender is ranked, but this hierarchical ranking appears to be gender-neutral. It seems to have little to do with gender.

In the first part of the chapter, we discuss research on gender differentiation and careers, and describe the model's background. Our point of departure is the strong gender differentiation that characterizes

academia, especially on the lower levels. In the second part, the Janus model is presented more thoroughly. The model describes how differentiation contributes to stratification (ranking) on the higher levels, resulting in women being in the minority, especially at the top. What begins as a horizontal difference becomes a vertical gap in rank and status. The third part of the chapter addresses criticism of the Janus model, empirical nuance and theoretical development, and relates this to other recent research.

The University as a Gender Differentiating System

Gender-based work distribution and gender role structures are key topics in research on gender and gender equality (see e.g., Acker, 1990; H. Holter, 1973a; Ø. Holter et al., 2009). Here, work distribution means the division of tasks between the genders in society, broadly speaking, including care responsibility and unpaid work in the home.

Ellingsæter and Solheim (2003) claim that the significance of work distribution has been underestimated. Working life is based on "hidden assumptions about gender differences", and feminist research lacks theory on how gender may turn into power relations, and takes it too much for granted (Ellingsæter & Solheim, 2003, pp. 57, 34, translated from the Norwegian). In our view, this criticism is still relevant. Women are still overrepresented in occupations and jobs with lower wages and status than men. Furthermore, change is happening so slowly here that one may get the impression that this is an almost static pattern.

In academia, major changes have taken place in terms of student distribution within many disciplines, particularly from 1980–2005, as the proportion of female students increased.[1] However, a gender division is still highly evident. Many students enter gendered degree programmes. In autumn 2019, the MN faculty had 19 natural sciences degree programmes with more than ten full-time students (converted according to completed credits). Of these, only five, or approximately 26 per cent, were gender-balanced (within 40/60), and four had more than 80 per cent of one gender. A study of the student distribution in all the 115 master's programmes

at the University of Oslo in 2012 showed more or less the same pattern: only 22 per cent, or one in five degree programmes, were gender-balanced (within 40/60). The vast majority, four in five degree programmes, were not gender-balanced, often down to 80/20 or even 90/10. There is still a considerable share of almost single-gendered programmes, both on the male and the female side (Thun & Holter, 2013, p. 165).

This could be interpreted as a result of the students' own choices, but also as a result of the way in which the degree programmes are designed and facilitated.[2] Regardless of what the background may be, it is a fact that the student population becomes highly gender-divided. Awareness of the consequences of this seems to be small. Career counselling for students and young researchers has only marginally addressed the gender-related implications of different education and career choices (*Akademiet for yngre forskere*, 2016; Thun & Holter, 2013).

The fact that the university is a gender differentiating system means that gender matters. Different genders end up pursuing different educational paths. Academia is characterized by a gendered work distribution that becomes particularly visible as students begin to choose specializations and areas of expertise. This is a *horizontal* gender division. It is not a *vertical* division where one gender is placed above the other(s) in rank or status. By differentiation, we mean only that there is a distinction between the genders. What characterizes the university is that young women and men embark on different academic directions, without that in itself having anything to do with ranking (vertical dimension). In principle, a master's degree holds the same status regardless of discipline.

Young men thus more often enter disciplines or subject areas with numerical male dominance, whereas young women enter disciplines or areas with numerical female dominance. Gender differentiation *increases* from the bachelor to the master level – at least it becomes more visible. On this level, the programme options are more specialized. Historically speaking, what used to be gender differences *between* disciplines has partly changed into gender differences *within* individual areas and specializations within the disciplines. For example, medicine was for a long time primarily reserved for men. This has changed, yet there is considerable gender division within the discipline.

Stratification and Meritocracy

The university is also a stratifying system. Some move up, others fall out. This is the institution's mode of operation – selection is part of the job. However, the selection is supposed to be meritocratic, based on each individual's performance and achievements, not on ascribed or attributed characteristics. The university should counteract – or at least not reinforce – social inequality linked to gender or other traits of a person. This provides the best possible chance to develop talents and respond to social responsibility. In other words, there is nothing wrong with "stratification" in itself. However, universities have an explanatory problem when stratification is clearly connected to social inequalities or grounds for discrimination,[3] such as gender or ethnicity.

Gender stratification means that the genders have different outcomes in terms of status, prestige, power, economy, etc. An example may be a high proportion of women on the lower levels of a discipline, while men on the top level still dominate the same discipline. The term describes the inequality but says nothing about motive or the driving forces behind it.

The Janus Model

Image 8.1. The Roman god Janus. Photo: Wikimedia Commons.

In order to understand how gender differentiation and gender stratification are connected in academia, we have created what we call the Janus model. It has its name from the Roman god Janus, the god with two faces. Janus was known for combining two different forms or having two

different modes of operation – he could display a friendly face and a stern face, or a young and an old face. We use Janus as a metaphor, a sort of analogy, for discussing a two-sided social mechanism. Our point of departure is that academia has two "faces", and that it treats gender differently based on two opposed logics. On the one hand, it differentiates the genders. On the other, it ranks the genders.[4] Whereas gender differentiation is open and legitimate (Janus' friendly face), gender stratification is usually hidden – it behaves like a gender-neutral meritocratic sorting (stern face).

The two faces correspond to the two modes of operation in the model: a "nice" differentiating mode, and a "stern" stratifying mode. The model shows how the two recreate gender imbalance at the top. It also shows how the centre of gravity changes towards the top of the career ladder. The "friendly" face is most visible on the lower levels. The "stern" face becomes more visible on higher levels.

Figure 8.1 (below) is a rough outline of the Janus model. Here, the ideal career path from student to professor is marked by a grey, broken line diagonally from bottom left to top right. Some central empirical patterns

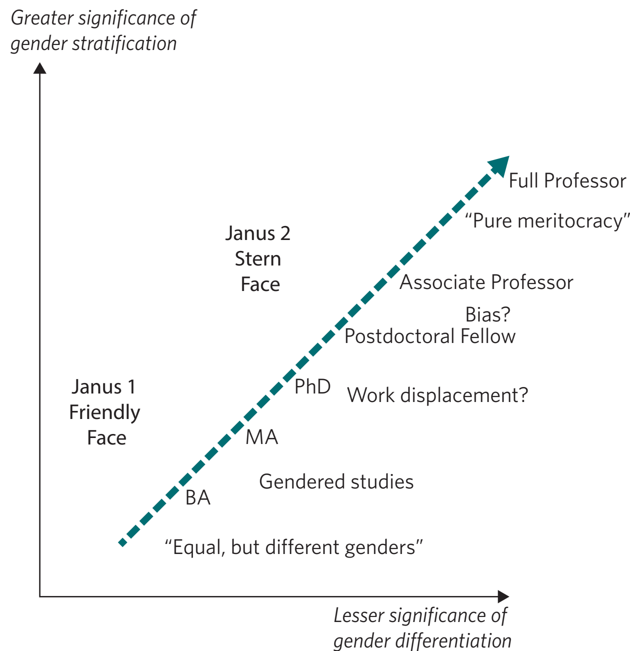

Figure 8.1. The Janus model: the career path from student to professor, based on gender differentiation and gender stratification patterns.

have been included.[5] The outline demonstrates how differentiation – the friendly or smiling face – is most visible on the student and lower levels of the career ladder. Stratification – the stern face – becomes more important towards the top.

Figure 8.1 demonstrates the typical career path during which students encounter an ideology of "equal, yet different genders", which is in line with highly gender-differentiated studies. Patterns related to ranking and stratification, not particularly visible at first, gain momentum upwards on the career ladder. We see tendencies towards "work displacement", where women are given less meriting tasks than men, and encounter "bias" or gender stereotypes (in line with other studies, e.g., Vabø et al., 2012).[6] At the top reigns an ideology of "pure meritocracy", in which gender is officially irrelevant, as found in our interviews. On this level, we often see "a rigid faith in meritocracy" (see Thun, 2018, translated from the Norwegian, and Chapter 1).

The Janus model builds on the results from the FRONT study, especially the two surveys carried out at the Faculty of Mathematics and Natural Sciences. These findings present evidence of a gender gap in experiences (as documented in Chapter 5) – yet the obstacles change shape along the career path. For instance, young women experience more social devaluation, whereas older women experience more (or continued) professional devaluation. The model emphasizes that what is first "different" in terms of choice of education and career path, can become gradually more "ranked" or stratified. Gender matters in ways that result in renewed inequality, for example in the absence of women at the top. In this way, the Janus model helps explain *why* the inequalities still exist despite the university's attempt to create gender equality.

How Does the Janus Model Work?

The Janus model demonstrates patterns, and how they may be connected in general, but it does not fully explain what happens on the individual level. However, an imagined example may illustrate the connection between the model's two mechanisms.

Let us imagine student A, who has chosen a "feminine" career path, and student B, who has chosen a "masculine" path. These might be within the same discipline, such as IT. For example, A may have selected "user design", whereas B has chosen "programming". Both students are awarded top marks for their master's degrees, and both start on a PhD. Later in their career path, the two meet, competing for a postdoctoral position. This time, only formal qualifications count. Gender, which played a role when A and B chose or were encouraged in different directions (gender differentiation), is now no longer present as an explicit part of the basis for evaluation. A and B are evaluated "completely objectively" without regard to gender. As it turns out, A must yield to B, for example because B's academic profile is assessed as "more crucial to the discipline", or simply because there is funding for a postdoctoral position in B's "crucial" area, but not in A's. A may have to "revise" her/his competence (make it relevant to this "central" area), and thus easily falls out of the evaluation process.

A fundamental idea in the model is that open discrimination based on gender may be avoided through a *split* or *division* or through *deferment*. One unit – for example, a committee or a department – does one thing, while another does something else. Imagine, for instance, that an academic institution manages to reproduce numerical male dominance on the top level almost unchanged over many years. But it does so by one unit pointing in one direction while another points in a different direction. Formal regulations are one thing; the informal culture is another. For instance, an expert committee may say one thing, while the nomination committee says another. There does not have to be much of a split or divide for such a "deferment mechanism" to work. All it takes is a combination of factors. None of the links in the chain breaks the rules, perhaps, when considered individually. But the chain maintains the accumulated gender gap at the top through interaction with gender differentiation further down in the system.

> Well, there are exceptions [to the formal regulations]. We just need to get things done. The last researcher we recruited came in more randomly. He is the one sitting down the corridor there.
>
> (Professor, male)

Sometimes, time pressure and practical reasons make it easier to choose the "expected" gender. The informal level undermines the formal level in the organization. At other times, two equally "official" units or committees contradict each other.

Gender Difference as Part of a Structure

In the above examples, gender works *indirectly* through an apparently gender-neutral assessment. It may have to do with more central and less central research areas, or formal and informal assessments. Gender is not mentioned directly but is indirectly part of the picture.

Based on this model, gender difference becomes embedded in the system's mode of operation, which has a negative effect in the long run, especially for women. Thus, the model slightly resembles the Bøygen model, and the hypothesis of accumulated disadvantages for women (Chapter 7), while at the same time enabling the interpretation of *different types* of disadvantages and obstacles – not only that they pile up over time. The central idea is that discrimination based on gender *changes its character* on its way up the career ladder.

The Janus model describes *tendencies* in general (seen from a bird's-eye view), not concrete or detailed connections, which may deviate from these tendencies. We will return to this later. Nevertheless, we are dealing with general tendencies and patterns that are well documented, for example, in the material from the FRONT project.

In principle, there is nothing "wrong" with Janus' two faces – taken individually. Gender differentiation is legitimate in academia, as in the rest of working life. As already mentioned, stratification is legitimate, too, as long as it is neutral, objective, and not skewed. The problem arises when the presumably neutral meritocratic selection in reality involves gender bias, as our research indicates. Each of the two main tendencies – differentiation and stratification – may thus appear legitimate and meritocratic in themselves, if they are considered individually. It is the connection between the two that becomes problematic, and this is usually hidden and difficult to see in context.

It should be mentioned that a "kind" differentiating mode of operation (friendly face) does not necessarily involve less strain on the individual level.[7] The model demonstrates skewed selection all the way, although the primary mode changes. This causes strain or disadvantages on the way towards the top of the career ladder. The "friendly" Janus face only means that the institution itself does not rank genders (at least not directly), although they are differentiated. However, this does not necessarily imply that ranking and gender discrimination are absent in the working environment and culture.

Discussion: How Appropriate is the Janus Model?

The Janus model describes two structures in academia – differentiation and stratification – that together contribute to maintaining gender-imbalance. The model demonstrates how these structures can make it more challenging to create change with regard to academic culture, prestige and gender-balance, particularly at the top.

The model is not based on the idea that women's problems – slightly simplified – can be explained only as a result of male resistance. The point is rather that this is how the organization works, "This is how we do things here". There does not have to be a very strong degree of male dominance or active discrimination within the organization. On the contrary, the men within the organization often emphasize the things they do to promote women and gender equality – as they do in our material. However, assessments indirectly related to gender affect academic institutions and cultures. The road from "different" to "inferior" can be short.

The Janus model thereby helps explain why the FRONT material shows a widespread *desire* for gender equality, also among men, in combination with a strong *belief* in the genders as fundamentally different – and an increasing gender gap in experiences during the career path, in which women encounter more problems than men (Chapter 5). In *practice,* the organization fails to live up to the desire for gender equality, not just because of resistance, but because the structures, the two "faces", counteract this – and recreate belief in gender differences.

The Model's Four Hypotheses

How well are the model's hypotheses empirically substantiated? Let us examine the model's four central hypotheses:

1. The first hypothesis is that structural factors can largely explain the persistent imbalance alongside explanations related to personal interaction and individual actors. We do not know precisely what "largely" means here. The model does not claim that structures mean everything and actors nothing. We do not take a stand, we are just saying that both are operative.
2. The other hypothesis is the distinction between horizontal and vertical gender difference, gender differentiation and gender stratification, which is well founded in research. These are partly overlapping patterns, but also distinct tendencies with different modes of operation.[8] The model assumes that both gender differentiation and gender stratification create a tendency that "pushes women out" of the top level in the natural sciences, but that they operate in different ways. It is important to distinguish between them to better understand how today's formally gender-equal institutions still sustain an imbalance, even *without* a highly extensive degree of active discrimination on the actor's level.
3. A third hypothesis is that horizontal gender segregation (gender differentiation) changes in the direction of a vertical division (gender stratification) towards the top of the career ladder. The model assumes that both tendencies are operative on all levels, but with changing emphasis. The "stern" face becomes more important on the higher levels, whereas the "friendly" face becomes more ambiguous. The significance of differentiation is reduced, whereas the significance of stratification increases.

   What do we know about this change? Here, research is less unequivocal, but we nevertheless have substantial support both in the FRONT material and other studies. For instance, the major British Asset survey on the natural sciences found that stratification increased on higher position levels (Aldercotte et al., 2017).

Similarly, a study of gender differences in performance in career development among young researchers over ten years (van den Besselaar & Sandstrøm, 2016) shows that minor differences on the lower levels developed into more considerable differences at the middle-level later in the career. The researchers emphasize that skewed selection and drop-out among women towards the top are not only about "self-selection" or individual choices, but also largely about "social selection". The study supports the Janus model's hypothesis that a transition occurs on the career ladder from differentiation to stratification.

However, the sequence does not *have* to follow this pattern of differentiation first and stratification second. One of the female researchers in the FRONT study sums up her experience thus: "I have experienced academic devaluation all the way. Unwanted sexual attention was mostly when I was younger". Several of the women in the interviews report similar experiences. Attention based on gender difference is evident in FRONT's student material. But this may have to do with academic devaluation and other types of gender stratification from the start, not just at the top, even though this stratification changes its shape – it is more "visibly gendered" in the beginning and more "hidden gendered" towards the top.

4. A fourth hypothesis is that the combination of the two structures, and the way in which gender de facto impacts meriting and prestige towards the top of the system, are *hidden*. This can happen directly or indirectly. The model assumes that this occurs primarily indirectly in that the two structures do not mix. Gender as a difference is treated separately. The same is the case with ranking. The ideal becomes, so to speak, a "unisex" work organization, while at the same time practice shows otherwise.

That gender stratification and gender discrimination are largely indirect or hidden is confirmed both in the FRONT material and other research (see e.g., Brandser & Sümer, 2017; Husu, 2005). In the FRONT material, we see a major gender gap in *practice*, that is in experiences, where women come out worse than men – even though almost nobody "wants"

this. Among many of the women and the younger researchers, the tone is more critical when it comes to conditions at the top. "They're not aware of it, but they do it," is a summary of this criticism, which is particularly directed at men at the top. They recreate a skewed ranking based on semi-conscious notions of gender differences.

Theory of Gender and Power

As described, the Janus model is created based on empirical findings. But the model also has a theoretical background. That gender-related discrimination and gender oppression in general have taken more indirect, hidden forms is a well-known view within research on gender and gender equality (see e.g., Acker, 1990; H. Holter, 1976, 1984; Walby, 1990). In this sense, the Janus model is also founded on a relatively solid theoretical basis. But do we have grounds for saying that the tendency to hide gender discrimination is linked specifically to the connection between differentiation and stratification? We do not know for sure. What we do know is that gender inequality changes character. It has changed shape over time (Danielsen et al., 2013; Hagemann & Åmark, 1999). These changes occur in academia and in society in general. The model can contribute to a better understanding of this pattern.

Based on critical theory of power and social stratification (social inequality and dimensions of discrimination), a stratifying and discriminatory social mechanism[9] will, as far as possible, attempt to reduce costs for the powerful actors. It will give those in power the opportunity to "legitimize themselves" and, to the greatest possible extent, make their power appear as a common good, or at least the best possible option under prevailing circumstances. It will seek to distribute the costs of power downwards within the system, whereas the rewards are concentrated towards the top (Connell, 1995; Ø. Holter, 1997; Messerschmidt, 2015; Poulantzas, 2008). It will attempt to hide what is happening and operate through a divide and conquer mechanism – possibly the oldest of all known domination techniques. It will – based on feminist research and theory – be characterized by an "organizational defence mechanism" (H. Holter, 1973b, translated from the Norwegian) and a "neutralized

male norm" (Hirdman, 1990). Structural domination will operate in interaction with social, cultural and symbolic domination (Ellingsæter & Solheim, 2003; Solheim, 2001).

According to critical theory, oppression becomes gradually more subtle and hidden in modern society. Oppression is transformed into a "compromise mechanism" (Poulantzas, 2008), at the same time as authoritarian forces can expand their scope through "exception mechanisms" (Agamben, 2005), enemy images and other factors. Power becomes "normalized" and "hegemonic". Traditional gender roles and authoritarian attitudes and mechanisms in society are essential parts of this picture (Stenner, 2005).

The gender system is central in this critical perspective on power in society (Acker, 1990; Connell, 1995; Hirdman, 1990). A common denominator in this research is that power in some ways becomes milder, in other words, a friendlier face over time, historically speaking – at the same time as it becomes more internalized, "It is your own fault". But such "milder" forms of power are not the entire story. For instance, gender power in Norway is relatively moderate in an international perspective, but rape and violence against women are still part of the pattern. Mild and subtle use of power can go hand in hand with marking boundaries and setting examples with the use of more direct methods (Ø. Holter, 2013). In the FRONT material, we see a partly "mild", general type of devaluation of care responsibilities, which quickly becomes a loss for one's career. But there is also a surprisingly strong tendency that women, much more often than men, experience problems after parental leave (see Chapter 5, and also Thun, 2018, 2019a, 2019b). Both "mild" and "stronger" tendencies emerge.

The Janus model is founded on the distinction between stratification and differentiation in research on gender roles and gendered division of labour. It is not alone in describing gender discrimination as an indirect process. For example, in her model of the gender system, Hirdman (1990) distinguishes between two main principles: the creation of difference and ranking in a neutral form. This resembles the two dimensions in the Janus model, even though the starting point is somewhat different.

Such multi-dimensional models have also been developed within research on gender in academia. Research reveals several reasons or factors contributing to imbalance and obstacles for women (Chapter 5), making it natural to create models that clarify this further. "The Medusa effect" (Brandser & Sümer, 2017) is an example of model building on this basis (see Chapter 7).

The Janus model takes this a step further through a more general division between differentiation and stratification. It is a structural model. When the two structures are connected, problems arise. This will tend to recreate the Matthew effect (men are credited), the Matilda effect (women are bypassed), and the Medusa effect (combining the two) as empirical patterns in academic communities and cultures, and reestablish a neutralized male norm.

Models that can be tied to the Janus model have also appeared in other recent research. In a study of academic recruitment at three Norwegian universities, Orupabo and Mangset (2021) describe how recruitment is characterized by two sets of logic, first an "inclusive logic" and secondly an "exclusive logic". In the inclusion phase, gender equality and diversity are taken into account, but such criteria are taken out of consideration in the exclusion phase in favour of presumably objective standards of excellence. This model was developed independently of the Janus model but describes similar patterns. We see some of the friendly, inclusive Janus face, and then some of the stern, exclusive face.

An obvious criticism of such models, including the Janus model, is that the division into some "important" tendencies or factors is too simplistic and thus misleading. Who knows whether these are the most important ones? Should we not instead look at how they are connected in real life? Most people know that the link between "different" and "inferior" is close when it comes to gender. Could this be a better point of departure?

That gender power and gender difference are often linked is correct, empirically speaking, but this does not diminish the importance of the analytical distinction between them. Gender stratification and gender differentiation are two different things. Low atmospheric pressure and rain are also often connected, empirically speaking, but we do not drop the analytical distinction because of this.

Critical gender theory provides the opportunity to consider power and difference in connection with each other. The theory is founded on what is distinctive about the relationship between the genders, not just on what applies to power relations in general. One essential characteristic is that gender relations are often personal and intimate relations, requiring a certain minimum of mutual benefit and gain in order to work. Gender relations are characterized by reciprocity, although they are also often characterized by power and exploitation. Class relations and ethnic relations do not require this same "closeness". They do not require that the two parties, the oppressor and the oppressed (based on theories of power), live in the same household or share the same bed. The relationship is different.[10]

Model Development and Empirical Nuance

In its first, simple form, the Janus model, as described in Figure 8.1, is helpful as a working model, but it clearly also has limitations. The model was presented and discussed among researchers at a number of seminars and workshops at the Faculty of Mathematics and Natural Sciences in order to elicit views and debate. Many were of the opinion that the model was interesting, while some argued that it was not sufficiently clear.

We therefore saw the need for further empirical development, and some attempts towards a more empirically precise model were created and presented. None of them were perfect. However, they demonstrate how the model may be used as a working model and developed further.

Figure 8.2 is an example of the model at one stage of its further development.

Here, we no longer accept a "simple" diagonal line from differentiation to stratification but try to nuance it based on our knowledge of the empirical pattern. The broken line (blue) represents a correction of the diagonal. The figure is not a full solution but an example of how the Janus model may be improved based on new empirical data.

The point of departure is both our empirical data and other recent research. As already mentioned, we see increasing gender differentiation on the lower levels of the career ladder, but the direction becomes less

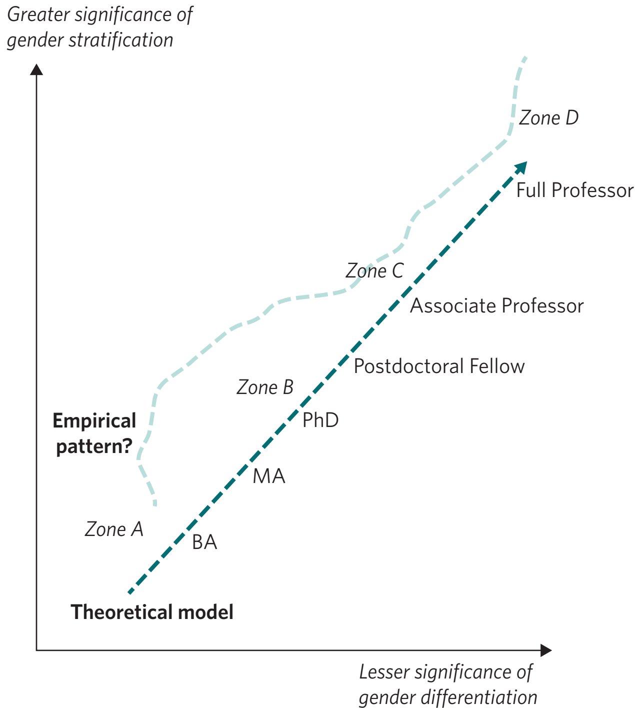

Figure 8.2. The Janus model with empirical modification. The model shows the career path from student to professor based on gender differentiation and gender stratification.

clear higher up. The main point is that stratification builds upon differentiation, but differentiation probably does not diminish once it has been established. The upper half of the broken line is perhaps, empirically speaking, more vertical – the degree of differentiation is more or less the same, although the explicit *importance* of the differentiation decreases.

It is also uncertain whether the uppermost part is more gender-stratifying than the levels below. However, research presents a picture of strongly gendered-skewed selection at the top, related to prestige and funding of excellence and outstanding research (Henningsen & Liestøl, 2013; Sandström et al., 2010). For instance, women accounted for only 26 per cent of the recipients of awards for the best research and best innovation at the University of Oslo from 2010 to 2020. Some of the prestigious awards within the natural sciences are even more male-dominated. An international study of prestigious awards indicated that women only

received eight per cent of the prizes during the period between 2001 and 2020, although this proportion increased towards the end of the period (Meho, 2021). Continued male dominance at the top comes into play as a factor both downwards on the career ladder and across the disciplines.

It may also be the case that gender stratification is more prominent on the lower levels (although it is often hidden behind differentiation) than presumed in the first version of the model. This has been corrected to some extent in the second, Figure 8.2, as an example of how the model may be further developed in line with empirical mapping.

It is also possible to imagine more "ideal" versions of the model, where Janus has largely abdicated, and the model no longer has the same strong effects. A simple version was presented at the seminars (Figure 8.3, below).

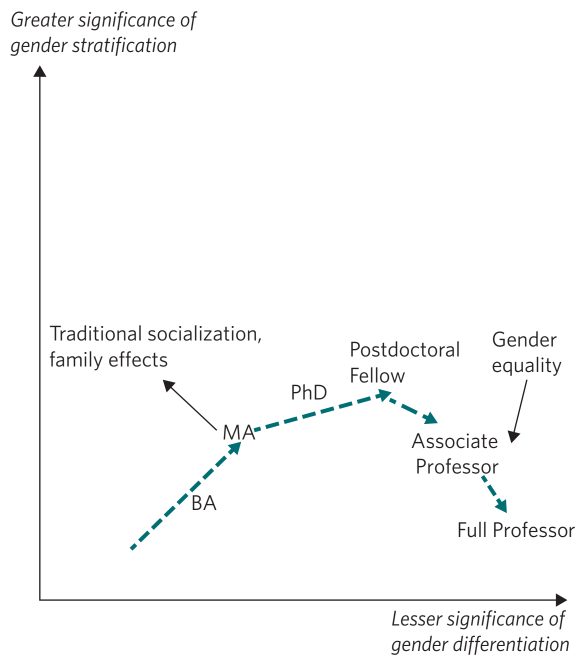

Figure 8.3. The Janus model as an "ideal" version. The model shows the career path from student to professor based on gender differentiation and gender stratification.

This version of the model is an outline of possible future development. On the one hand, we presume that socialization, family and gender roles still pull the curve upwards (to the left in the figure). On the other hand,

increased demands for gender equality and gender balance at the university reduce gender stratification (to the right). These are obviously just presumptions, and the point of presenting the outline here is to demonstrate how the model may be developed further. It is open to different possibilities, not fixed to a particular view or theory.

The action research in the FRONT project has demonstrated that these types of models are "useful to think with", particularly when they are empirically open and flexible and do not require researchers to take a stance in advance. They can explore on their own. Are the obstacles that women encounter a mix of horizontal and vertical discrimination? Is it true, or not, that the main emphasis shifts over the course of one's life and one's career path from horizontal differentiation to more vertical and apparently gender-neutral ranking? Each and every one can examine the conditions within their own research community and their own academic culture. Once you have two faces, you may just as well have many. The Janus model, both in its first, simple version, and later with a possible empirical modification, has functioned as an eye-opener and created curiosity in the FRONT project's seminars and other initiatives.

Points for Improvement

The material from the FRONT project, not just from the action research, but also from the questionnaires and interviews, suggests some crucial points of improvement in the Janus model, although we have not had the opportunity to explore these in detail. Among other things, it concerns "tracks" and "connections". *Tracks* here means *various* combinations of differentiation and stratification, in different disciplines and subject areas, and on different levels.

The model starts with the general assumption of an even diagonal from student to professor upwards on the career path. In practice, experiences are more varied. The model displays a macro pattern, that is, a general tendency on the institutional level, but conditions are somewhat different on the intermediate or meso level (the organization), and on the micro level (the small group, the individual). Although the sum total, a

low proportion of women at the top, is the same for many disciplines, the social mechanisms leading up to this are slightly different. The first and simple version of the Janus model *presumes* a shift from differentiation to stratification as a main principle, without clearly specifying this shift or connection. Here we find variation and divergent patterns. In reality, there are many different tracks upward in academia. These are important challenges for further research.

Delay is one of several mechanisms in the Janus model. As mentioned earlier, this can mean that one committee does things in one way, while the next one does them in another way. *Division* (difference on the one hand, ranking on the other) may occur in other ways, too, however. This division or split can mean that one specific perspective is used in one case while another is used in a different case. Each of the two points in its own direction. Yet they are combined. How can this happen? The core of the Janus model is that the relationship is *indirect*. Gender-neutral assessments or scientific terms are nevertheless connected to gender difference.

Committee A is perhaps gender-neutral, but it is succeeded by committee B, which more informally takes gender into consideration in its recommendation. Students A and B are perhaps evaluated gender-neutrally, yet the assessment is indirectly based on gender, because the evaluation of central and peripheral disciplinary fields is connected to gender. The FRONT material indicates that indirect mechanisms such as these are essential. For instance, the material shows that young men more often than young women think they have “talent” for research (Chapter 5). Researchers promoting their own talent are more frequently cited (Lerchenmueller et al., 2019).

This is not – officially speaking – about gender discrimination. But this is how it often works, in objective terms. Women are worse off. In the next chapter, we discuss this in more detail, addressing discourse and ideology, and how structures affect culture.

The core of the Janus model is the two faces of academia – the division between a friendly face centred on difference, and a stern face centred on power. The division or split often occurs over time, through the delay described above, as the significance of (open) gender differentiation

decreases in relation to the significance of (more hidden) gender stratification upwards on the career ladder.

However, both tendencies are also often present here and now in the FRONT material, when "different" drifts into "inferior" in regard to women. This usually happens when gender becomes subject to a "symbolic translation" (Solheim, 2001). It is not *directly* stated that an assessment is influenced by gender, but standards are used (e.g., if an article is presented as "innovative", the researcher has "talent", i.e., criteria that are clearly influenced by gender). Discrimination thereby takes place mainly *indirectly,* demonstrated by Fürst (1988) already in 1988, and later confirmed in a number of other studies (see e.g., Ahlqvist et al., 2012).

What is referred to as *bias* (more or less conscious prejudice) in international research is an essential part of the Janus model, further described in Chapter 9.

Based on the FRONT material, gender distribution often corresponds to how "soft" or "hard" the subject areas are assessed. Gender differentiation is linked to the academic prestige hierarchy in the sector (see Chapter 2). It also includes to what extent women and men feel "at home" in the different disciplines and subject areas.

Janus: Only in the Natural Sciences?

One question that has emerged in the debate concerning the Janus model is whether it applies to academia in general or only to the natural sciences. Is there any reason to assume that the model is more relevant to the natural sciences than to other disciplines? We do not know for certain, but we presume that the model's main features are applicable across disciplines. It is a common feature that the proportion of women decreases considerably towards the top in academia.

At the Faculty of Mathematics and Natural Sciences in the University of Oslo, the proportion of women on the PhD level is 44 per cent, and it drops to 22 per cent on the professor level. Within medicine, the percentage drops from 61 per cent on the PhD level to 36 per sent on the professor level. Within the social sciences it drops from 62 per cent to 34 per cent, in the humanities the drop is from 60 per cent to 36 per cent, and within

the legal sciences it drops from 60 per cent to 34 per cent (figures from DBH, 2020). The tendency is clear across the disciplines. Students express a wish for gender-balanced learning environments across faculties. Lack of gender balance in degree programmes can also negatively affect the minority who are to be "cheered on" (Thun & Holter, 2013).

This may indicate that even though some things are characteristic of the natural sciences, the main features of the pattern of accumulated disadvantages and the Janus model are much the same (the effect is at least quite similar). We do not know this for sure until the FRONT study is replicated in other disciplines.

It is possible that the natural sciences are "backwards", but they might also be at the forefront of change precisely because the problems have been so obvious.

> What I also thought was really nice, then, was, in a way, to have awareness of this, to be a little aware of, in a way, why … if the candidates are equal, why would you prefer one over the other, and then be a bit aware of that you perhaps, yes that you perhaps unconsciously may prefer the man, and that you need to think about that when you make assessments.
>
> (Female master's student with experience from student politics, interview)

Janus: Relevance to Diversity?

Another important question is whether the Janus model applies to different dimensions of social inequality, or if it applies only to gender. Both the Janus and the Bøygen (the Boyg) models are developed on a broad basis grounded in theory of social inequality, not only gender and power. Critical gender role theory has had a certain "intersectional" approach for a long time, in which researchers examine various grounds for discrimination, such as gender and class, in connection – something we also do in the FRONT project (Chapter 6).[11] But the Bøygen and Janus models are primarily about gender and were developed based mainly on research on gender. Might they also contribute to an understanding of other dimensions of social inequality and diversity? Can these "gender-derived" models contribute to areas such as social class and ethnicity?

Here the answer is yes, in our opinion, but in different ways. The Bøygen model and the accumulation of disadvantages within the group with low status is not unique to gender. It also applies to ethnicity and class. The material in FRONT provides a good foundation for this claim (Chapter 6). The model has somewhat different modes of operation based on each dimension. The accumulation of problems, with a greater chance of inner doubt, is a general feature, however.

The Janus model is more specific with regard to gender, while also including important factors relating to ethnicity and class. It is more specific because the gender division is much more apparent than other divisions in our material (Chapter 6). Gender is much more marked as an "accepted difference" in degree programmes and career paths than ethnicity and class. Class (parents' educational background) does admittedly play an important role in recruitment to academia, but it is also highly under-communicated. The material demonstrates ethnic segregation, but gender segregation is greater (Chapter 6).

The Janus model thus can help to identify various factors within other dimensions as well, such as ethnicity and class. It is a "combo model". The combinations are doubtlessly somewhat different within other dimensions, but the method itself may be helpful. Being "strange" or "somewhat different" is treated differently upwards on the career path. The model is a contribution to a mapping of this terrain.

Conclusion

The Janus model describes academia's two faces – one friendly, one stern. It contributes to an understanding of why gender balance is difficult to achieve on the top level in academia, and why gender segregation persists. Although the organization works towards gender equality, important structural and cultural mechanisms counteract this effort. Considerable acceptance of gender segregation at the beginning of a career is part of a pattern that disqualifies women or makes them withdraw further up on their career path. The result is referred to as a "leaky pipeline" in international research. Difference becomes ranking. This is the core of the Janus model. Gender difference that is considered legitimate at the beginning

of a career contributes to discrimination based on gender higher up in the system.

The Janus model can facilitate an explanation of how accumulated disadvantages and "Bøygen" (the Boyg) work over time. The work environment may be supportive of gender equality, while professional, structural and cultural mechanisms work to the detriment of women. The model can explain how gender imbalance is sustained, despite an emphasis on gender equality and relatively limited direct gender discrimination within the organization.

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Notes

1 Disciplines such as medicine and odontology went from being male-dominated disciplines to having a clear majority of women. The same development took place in higher education within the social sciences, law, economy and administration, and some of the humanities (NOU 2019: 3, p. 60). Many disciplines and subareas within disciplines have largely remained stable over time. This applies to programmes within the healthcare sector, higher education in pedagogy and high

school education in the construction sector. It also seems as if the increase in the female proportion has slowed down over the past decade with a few exceptions, such as in law (DBH, 2021).

2 In other words, along the lines of a "system problem", see Chapter 9 on the Triview model.

3 We use "social inequality" as the term is commonly used today, i.e., social stratification related to gender, ethnicity, sexuality and other traits, often referred to as "grounds for discrimination" (see Chapter 6).

4 Differentiating or treating the genders differently is what we call gender differentiation. The ranking of genders we call gender stratification. We are "dusting off" a forgotten distinction within gender role sociology (H. Holter, 1973a, p. 14). It was forgotten or put on the sidelines, as the distinction was considered artificial. Moreover, much research found support for gender differentiation being "created" primarily by gender stratification – in other words as an expression of power or as a consequence of power relations. This is not a debate to be addressed here. Our claim is just that this analytical distinction is useful. Although differentiation and stratification are often associated processes, they are two different issues.

5 Partly with question marks, indicating where this pattern seems to be most common.

6 Among these are also studies of the "technology culture" characterizing some parts of the faculty (Ø. Holter, 1990).

7 In addition to problems towards the top of the career ladder, skewed selection leads to segregation, often with unfortunate effects for the highly underrepresented gender in a discipline. This is discussed in Chapter 9.

8 Structural or "passive" discrimination and "active" discrimination based on gender are often connected (see e.g., Ø. Holter, 2013) – but this does not cancel the analytical distinction between them. The same applies to the distinction between differentiation and stratification relating to gender.

9 *Social mechanism* means a clear empirical pattern in which social structures affect power, action, etc.

10 In other words, gender relations are, to a greater extent, personal and – according to economic research – more characterized by distribution and gift exchange (including household and family relations) compared to class relations, which are characterized more by commodity exchange and market relations. For a case study of labour and family in technology communities, see Ø. Holter (1990). For broader theoretical development of gendered work distribution and gender roles, see Ø. Holter (1997).

11 For an example of recent Norwegian research looking at gender and other grounds for discrimination in connection, see *Akademiet for yngre forskere* (2019).

CHAPTER 9

The Triview Model: Three Views of a Problem

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Abstract: Everyone knows that the top levels of academia are still often imbalanced, with more men than women. This is commonly described as an absence of women, or a "leaky pipeline" towards the top. But how is this imbalance understood and reflected upon? And what does the understanding of the problem of gender imbalance mean for the overall culture of the organization? This chapter looks at how gender and gendered differences are described and discussed at the University of Oslo's Faculty of Mathematics and Natural Sciences, extending the social analysis (Chapter 7) and the structural analysis (Chapter 8) in the direction of discourse and cultural analysis, based on the very concrete main issue of the FRONT project: the top-level imbalance. Why is it there? What do faculty staff and students say, about this? Three typical views appear in the FRONT material, and are presented and discussed: first, that the gender imbalance is *not a problem*, or only a small problem; second, that it is a problem, but mainly a *women's problem*, and third, that it is a *systemic problem*. The chapter includes a historical profile of how these three views have developed and a discussion of how they work to hinder or help gender equality change in the organization.

Keywords: gender imbalance, explanatory models, work for equality, organizational change, academia

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Introduction

It is an objective fact that there exists a gender imbalance in positions and disciplines at the Faculty of Mathematics and Natural Sciences at the University of Oslo, yet it is nevertheless possible to describe and interpret this in various ways. This is already evident in the way gender imbalance is often discussed: There is an "absence of women" or "women drop out". The imbalance thus becomes something that primarily concerns women. When 78 of 100 professors at the faculty are men, one might imagine that men's "presence" would be a topic for discussion, but this is usually not the case.

In this chapter, we take a closer look at how gender and gender differences are referred to and discussed at the Faculty of Mathematics and Natural Sciences. Our point of departure is how gender imbalance is interpreted in different ways by staff and students at the faculty. We describe three typical points of view: 1) the gender imbalance is not a problem; 2) it is a women's problem; or 3) it is a systemic problem, and we connect these to sensemaking within the organization. In this way, we complete the empirical picture of the Bøygen (the Boyg) model from Chapter 7, and the structural picture of the Janus model from Chapter 8, by adding a more cultural and discursive model. We have called this the *Triview* model.

The chapter is organized in the following way. In the first part, we present the Triview model based on our material. We then look at the model from a historical perspective, above all related to material on the recruitment of women at the University of Oslo. In the next part, we discuss how the three views affect both equality work and daily life in the organization, and what significance these views may have for working to create change. We also consider the model in light of theoretical developments and organizational change and innovation, which is the topic of the third part of this book.

The Triview Model: Three Views of Gender Balance

Early on in the FRONT project, we became aware that staff and students perceived gender imbalance in very different ways. This became particularly obvious through interviews and action research, where we

participated in a number of seminars and workshops. The descriptions could be classified into three main types in which gender imbalance was considered as:

- Not a problem
- A women's problem
- A systemic problem

A slightly dramatic metaphor for the three views is the one-eyed cyclops of Greek mythology. The three oldest cyclopes (in Hesiod) were known as Thunder, Lightning and Light. Each sees with only one eye and often causes trouble for humans. The model presumes that each view has a certain metaphorical resemblance to such a cyclops.[1]

Image 9.1. Painting of the cyclops Polyfemos by the German artist Johann Heinrich Wilhelm Tischbein, 1802 (Landesmuseum Oldenburg).

The point is to emphasize that each view can be somewhat one-eyed. They are one-eyed because they each provide one specific interpretative framework having significance both directly regarding the problem of gender balance, and indirectly in terms of other features of academic culture and work organization. If "the eye that sees" does not recognize the lack of gender balance and gender equality, it will affect the organization.

First View: Not a Problem

In the first view, “not a problem”, the interviewees emphasize that the situation is fine as it is. It will adjust itself in due time, and an absence of women is not a problem within these disciplines in academia.

> Traditionally, the harder sciences have been considered more masculine, and men have that is traditionally, I don’t know if there is something about the male brain, that it is more … [I] think that such abstract, mathematical problems are more interesting than the more practical.
>
> (Professor, male)

Historically speaking, this view can be traced back to the period when the door to academia was closed to women, without that being considered a problem (for men). This is described further below.

In the FRONT material, the view, “not a problem”, is more common among men than women. In the interviews, the reasons why imbalance is not a problem are primarily connected to women’s family responsibilities and preferences. According to this view, the imbalance is usually interpreted as a result of women’s (and men’s) own choices, and it is therefore not a problem, at least not a major problem. For example, if women and men choose that women take more responsibility for children and family, they should be allowed to do so – even if it means that academia is gender imbalanced in the higher positions. Another important characteristic among those holding this view is a strong faith in meritocracy. “Here the only thing that matters to us is qualifications,” one of the interviewees stated. The idea is that gender is insignificant in assessment and recruitment processes – and that the lack of women in academia is caused by prevailing circumstances and attitudes in society at large and, therefore, not something that academia can change.

Second View: A Women’s Problem

The other view, that the imbalance is a “women’s problem”, is based on the premise that the absence of women in top positions is a real problem that should be taken seriously, and that academia needs more women. Again, the reasons for the imbalance are often explained by women

choosing family before career. The solution is that women should prioritize their careers. According to this view, the gender imbalance is a problem that should be addressed and dealt with, and the perspective is that this first and foremost relates to women. It is the responsibility of women and linked to women's problems. "Yes, we need to do something." But in practice, "we" means women, not men. Why women "choose" family over career is usually unclear, but it is considered to be a well-known fact.

A "women's problem" is not necessarily considered unfavourable for women. It is just something "different".

> Whether it is caused by stagnant gender roles or simply that women are more interested in, in that part of life, I can't tell, but I believe that, that simply – women choose otherwise.
>
> (Professor, male)

Some of the interviewed men in top positions also claimed that women not choosing academia are "smart". They choose to leave academia in favour of better-paid jobs and better working conditions in the private sector, or a more protected position in the public sector, a job they can combine with collecting children in kindergarten at four o'clock. They prioritize a "reproductive advantage" over an academic career.[2]

The idea of imbalance as a women's problem appears in various ways in the interviews. Women may be considered weak, as victims, or as underestimated and strong. Common to these ideas is that women are considered to be special, whereas men become the general or neutral. These points of view are thus clearly focused on women.

Third View: A Systemic Problem

The third view, that gender imbalance is a "systemic problem", allows greater insight into the fact that the problem is everyone's responsibility, and (implicitly at least) also men's responsibility. Gender imbalance is tied to the work organization, the institution's and the organization's mode of operation, environment and culture.

"Systemic problem" is a point of view that most clearly emerges in the project's interviews of those experienced in the academic system

and gender equality efforts at the university, and those well acquainted with the Norwegian gender equality debate. These interviewees summarize their own experiences to a lesser degree as individual cases, and rather more in light of common characteristics of the institution. At the same time, they are more used to thinking in terms of "the system" as an explanatory variable. Employees on lower levels may indeed be more critical, yet at the same time they tell more "individual" stories – they are not sure what belongs to the systemic level and think that their stories might be exceptions.

These tendencies in the interview material correspond to results from the surveys and the action research. For instance, we see that the willingness to regard gender imbalance as a systemic problem is closely connected to gender equality efforts of the faculty's leadership (see Chapter 10, "From Biology to Strategy").

Different Gender, Different View

Considering the three views together, it becomes clear that they vary in terms of where you are on the career ladder, as well as to which gender you belong. Men at the top are less inclined to criticize the system than women farther down in the organization. They have a more optimistic view of how the work organization operates and are more concerned with defending meritocracy. In interviews, they often talk about a work organization under pressure, related to competition and internationalization. Men, less often than women and juniors, agree that the system is characterized by male dominance even though they often agree that an academic career in their field, especially internationally, is "masculinely" designed.[3]

This resembles a rule formulated in Nordic research on men back in the 1980s by Lars Jalmert: Men are more willing to talk about male dominance at a distance than at close range and in relation to themselves. Jalmert (1984) described this as an "in principle" type of man – a man who supports gender equality in principle. We find some of this tendency in our material also. However some men mention what they have done themselves to reduce discrimination against women. Many of the women also mention supportive actions (not just attitudes) by men. In fact, men

who discriminate are often described as exceptions – most men are not like that.

Women, minorities and younger researchers are generally more critical of the system's mode of operation than men are. For example, we ask whether the work environment is not really meritocratic – that is, if the respondent experiences having to work harder than colleagues in order to be recognized. Here, the proportion of affirmative answers is considerably larger among women than among men, and larger among ethnic minorities than among the majority (see also chapters 5 and 6).

At the same time, these groups are less familiar with how the system works and do not, to the same degree, see the system from within. The results of this skewed selection become clear from below, but the actual system that creates this skewed outcome is often vaguer for those on lower levels.

The Historical Dimension

The views in the Triview model have an important historical dimension. Insight into this dimension is key to understanding how traditional perspectives on gender can be maintained, and still be part of the framework for discourse at the university.

Many believe that academia has long been open to women and men on roughly equal terms. They are not aware of how recent many of the changes related to gender have been, historically speaking. This needs to be included in the picture in order to understand the situation today.

In Norway, women were gradually accepted into a purely male academy from the late nineteenth century. But this was a slow process. It has been 140 years since the "artium law"[4] was introduced (1882), and the first female candidate was admitted to the University of Oslo (Danielsen et al., 2013). However, it took a long time before positions in the academic system were open to women.

For example, Helga Eng was the third Norwegian woman to receive a doctoral degree (in 1913), and she later became the first female professor of pedagogy (1938) – after 25 years. The University of Oslo did not get its first female professor of medicine until 1972, psychology in 1973, law in 1987, and political science as recently as in 2000. It was sarcastically

commented that the political scientists had finally "manned up" to hire a woman (Nickelsen, 2000).

Medicine and the natural sciences were among the few disciplines to admit women initially, and the Faculty of Mathematics and Natural Sciences at the University of Oslo were early in hiring their first female professor, Kristine Bonnevie, who became a professor of biology in 1912. But afterwards the proportion of women changed very slowly. A Norwegian study of women in medicine demonstrates how strongly the male role model persisted (Arentz-Hansen, 2018). For a long time, a female medical practitioner was itself a contradiction in terms.

In many disciplines, there were still only men in professor positions until the 1970s – or even later. The imbalance continued in many fields, such as theology, which still had only a marginal proportion of female professors in the 2010s.[5]

As late as around 1970, women amounted to only approximately 20 per cent of graduated students in the faculties at the University of Oslo, with the exception of the humanities, where the proportion of women had risen to approximately 40 per cent (NOS Undervisningsstatistikk, 1973). The natural sciences saw an increase to around 40 per cent women on the BA and MA levels in the 1990s (DBH statistics from 1996 and onwards), but the proportion has not changed much since then, and the proportion of women on higher position levels is still low.

Christina Franzén, head of the Business Leadership Academy in Stockholm, summarizes how "gender difference" has been interpreted:

> Those who know their history know that women, for a very long time, have not been considered suitable for holding positions of power in society due to their biology. This has been the case throughout our Western history. For instance, Aristotle believed women to be unreliable because they were more developed in the lower parts of the body than in the upper ones. For a long time, even in the twentieth century, it was considered dangerous for women to think. Too much thinking could result in women's wombs wandering around their bodies, negatively affecting their reproductive ability. This could, in turn, lead to hysteria, a term deriving from the Greek term hystera, meaning uterus. In other words, being hysterical was connected to women's reproductive organs. (Franzén, 2018, translated from the Swedish)

When Franzén acted as secretary for a Swedish official report on the lack of women in leading positions in the private sector in the 1990s, the perception of women's shortcomings due to their biology was still common. She interviewed business leaders who explained the under-representation of women in positions of power in terms of biological disabilities (Franzén, 2018). Conditions in today's academia are different from the private sector in the 1990s, but our material also refers to "women's shortcomings", whether they are explained in terms of biology, family, women's own choices or other factors. A large proportion of the respondents emphasize that women and men are different, and in many cases, this difference becomes a deduction, an inadequacy in women.

Throughout the history of women in academia, we see a tendency in which their absence (and men's presence) is explained by way of statements rather than empirical arguments. The discourse on gender balance began with a "thunderous speech" in the nineteenth century. One did not precisely *argue* that women were not admitted to academia. It was preached. Later, fictitious scientific "evidence" maintained more or less what religious authority had previously preached. Women were not entitled to vote and were considered incapable of practising the hard sciences (Danielsen et al., 2013).

Another version of the view "a women's problem" is not about the absence of women as a problem, but that their *presence* is a problem. The problem with women is not that they are too few, but that they are too many. Historically, it was considered a problem if women were admitted to science – among other things because women are more "hysterical". This view is outdated. No one says such things in our interviews, but the attitude is perhaps still present, for example, in the idea that women are more social than men, and in complaints from some men that clever girls from upper secondary school surpass the lazier (but still so wise) boys.[6]

The views in the Triview model make more sense in light of such longstanding male-dominated traditions in which women, until relatively recently, historically speaking, have been considered special or "divergent" compared to a "male normal".[7]

The three views in the Triview model have a basic historical foundation, a period in which they were most dominant as explanations for

gender imbalance, interpreted as the absence of women. The first, "not a problem", was connected to the situation before women were admitted on a broad basis, and was common in the early period, approximately between 1880 and 1960. The second, "a women's problem", became more dominant in the latter part of the twentieth century, particularly from the 1980s, when the proportion of women students greatly increased. The third view, "a systemic problem", is more recent, and is not yet dominant, although it has gained more acceptance since the 2000s.[8]

Note that the model relates to the academy's dominant self-understanding of gender and gender imbalance – rather than, for instance, how feminist or critical researchers understand these issues. These researchers have criticized gender imbalance as a systemic problem for a long time. It should also be noted that there were counter-arguments and alternative views in each historical phase. Triview deals only with the main rule or the main view.

Although each view in the model has its historical background, an essential feature of the model is that the three can be *combined,* with varying emphasis on each, in today's situation. To a certain extent, they can be chosen based on what seems to be the most correct or intuitive explanation. One and the same interviewee may therefore talk about imbalance as a non-problem, a women's problem and a systemic problem, depending on the context.

How Is the Problem Presented?

Do the three views have any practical implications for the Faculty of Mathematics and Natural Sciences? Do they affect only the willingness to work for gender equality, or also how the work for change is organized? According to Bacchi (2012), all organizational work aimed at change is based on a perception of what seems to be the problem. The way the organization works is determined not only by objective facts and conditions, but also by the subjective positioning, sensemaking and resilience of the individuals within the organization. This also applies (perhaps even more) to a knowledge enterprise or a university. Therefore, an "objective" fact, such as women's (relative) absence at the top and thus

a lack of gender balance, will be understood and interpreted in various ways. Symbolic negotiations concerning gender are a crucial element, where gender is just hinted at without being mentioned. For example, it may have to do with who is considered "competent" or "central" within the discipline (Solheim, 2002). Based on the Janus model (described in Chapter 8), gender is often hidden behind other considerations that appear gender neutral (such as competence), usually resulting in women and gender equality having to "yield" (Teigen, 2014).

A general characteristic in research on gender in academia and other high-status professions is that ideology and discourse play an important role, not just structures or actions (see e.g., Dockweiler et al., 2018; Lyng, 2017; Orning, 2016; Snickare & Holter, 2018; Thun 2019; Vabø et al., 2012). Obstacles and disadvantages affecting women in particular include both actions and attitudes. Actions are connected to certain interpretations and understandings. We also see this in the material from our project. For instance, we see that publication points are rarely "purely objective". They are rather subject to social negotiation and unequal attributions of prestige (see Chapter 4), and negative attitudes and actions are often connected (see Chapter 5). Academic prestige is primarily a discursive phenomenon – a result of ongoing discourse and negotiation within the discipline – which is well known, among other things, from Kuhn's (1996/1962) theory of scientific paradigms, and later research on paradigm shifts and innovation (Fagerberg et al., 2004; Ø. Holter, 2007).[9]

Thus the Triview model describes three views that may also be referred to as paradigms, and are connected to different ways of understanding and different types of discourse on gender. The three become particularly clear in questions about the lack of gender balance. The three may be used individually or in combination, and the effect may be that changes are put on hold or terminated.

At the same time, it is important to delimit the model from ideology or myths. The cyclops as a metaphor is only valid to a certain extent. Each view is *also* used as a framework for empirical interpretation – whenever this perspective seems right. This applies to both "bottom-up" hypotheses by researchers within the natural sciences, and leaders assessing different

subject matter in various ways. The view may indeed be narrow or one-eyed, but the arguments applied through the perspective are nevertheless not always misleading. Thus the Triview model does not produce a black and white image, a discourse of *either* "facts" *or* "alternative facts", but a more complex pattern. However the basis for knowledge, the potential for further investigation and for measures and initiatives are different in the three views.

This potential for further investigation and change is usually (not always) weakest in the non-problem view (the cyclops Thunder), somewhat more prominent in the women's problem view (the cyclops Lightning), and strongest in the understanding of a systemic problem (the cyclops Light). Generally speaking, the systemic problem perspective is clearly the perspective that, to the greatest extent, allows increased knowledge, thematization and the possibility for change. At the same time, here and now, the chance of gaining support for gender equality measures may increase if they are presented from a more traditional perspective, such as solving a women's problem.[10]

A final important, empirical point is that the triview of gender imbalance is not a peripheral or isolated element. It is strongly linked to views on other important issues and topics. The view of "meritocracy" in particular is clearly connected in the material. The greater the willingness to problematize gender imbalance, the greater the chance to take a stance in contrast to a "relentless" or purely objectivist interpretation of meritocracy. Ideas relating to competition and internationalization are also clearly connected.

Those who are concerned that gender balance is a systemic problem are also often of the opinion that a Norwegian university should not only "adjust" to increasingly challenging international competition – but also take the lead in developing alternative models. Such a model could, for instance, be based on Norwegian or Nordic advantages as welfare states with solid traditions for collaboration, both in research and in working life generally. At the same time, they often express scepticism towards what we might achieve in Norway – a more "welfare oriented" academia might not be able to assert itself in international competition. Academic culture, at least in the natural sciences, is to a great extent international,

and many believe that international guidelines will ultimately overshadow what is done in Norway anyway. Both the FRONT material and other research are characterized by the fact that such alternative developments in universities have hardly been discussed and concretized. One must simply "keep up". International standards apply, even though one may personally be critical of parts of this system, including "the publication point system" (see Chapter 4 on publishing).

Sensemaking in the Organization

Based on our material, the triview is linked to sensemaking in the organization. Gender may seem like a peripheral problem in many STEM disciplines, but it is connected to other important factors. Gender balance often *appears* as an isolated matter, particularly within a discourse emphasizing that imbalance is a small problem or a women's problem. Our results indicate that, in reality, it is part of a much bigger, coherent complex of meanings. This gradually becomes more and more obvious as gender imbalance is addressed and problematized. It is similar to an iceberg, where you only see the top at first, when you only see gender imbalance as a non-problem or a women's problem. All cyclopes are visually impaired, but in our interpretation, the systemic cyclops (Light) can illuminate better than the other cyclopes.

The view of gender balance reflected in our material is not only connected to views of other central academic issues, such as meritocracy, publication points, and prestige, but also to what makes sense in the organization. This perspective forms an underlying paradigm or is a part of this paradigm, to use Kuhn's (1996) term. It is linked to fundamental questions, such as "Why do I work here? What am I good for?". The results show that women have to be more assertive and "take their place", assess themselves as top researchers in order to achieve results – not because they seek unreasonable advantages, but because the dominant discursive framework has categorized them as "special", and thus also often slightly "inadequate", something they have often internalized.

The FRONT material does not include a complete and detailed mapping of the three views and types of discourse we describe here, and it

must suffice to recount the main tendencies. However, the model is well anchored in areas on which we *have* detailed data. This applies particularly to material from the survey variables on the practice level, measuring experiences in one's career and similar concrete descriptions from the interview material. Here it is clearly visible how the different types of discourse manifest themselves.

For example, the non-problem view is more controversial now than it used to be, and those adhering to this view, for instance on the grounds of biology, often emphasize that they are no experts on gender. They say they "do not really know", but they use biological gender difference as a hypothesis or working explanation. This especially applies to some of the male professors. Among the master's students, we see that men, in particular, emphasize the genders as "fundamentally different".

We assume that the dominant interpretation within the Triview model will have a major impact on what is actually done in order to rectify the problems. Institutions characterized by a more "advanced" view will achieve greater changes compared to those characterized by a "medium" or "backward" view.

The Triview model is an extension of a division already well-known in international research on gender and organizational development. Should we solve the imbalance problem and the lack of gender equality by "fixing the women", or should we rather "fix the system"? (Clayton, 2011). The systemic understanding – fix the system – has gained ground in the last decade due to research identifying systemic problems more clearly than before (cf. Chapters 5 and 7). Thus it is somewhat unfair to interpret it as a cyclops. The systemic perspective creates a departure from a situation in which the imbalance is explained away alternately as a non-problem or as a women's problem.

The material demonstrates how the interpretation of a lack of gender balance is essential not only in a concrete manner, when it comes to job appointments, but also more generally for the organization's culture. Gender often lurks in the background – it is not addressed but is nevertheless indirectly or implicitly part of an overall picture, as a crucial general condition, for instance in assessments of academic hierarchies and prestige (Henningsen & Liestøl, 2013).

"Scope of Possibility" and "Scope of Impossibility"

An important distinction between the three views concerns what is possible and what is impossible. If a problem is not perceived as a problem, the chance of it being possible to do something about it is greatly reduced, or at least the motivation to investigate and possibly do something is reduced. If it is a women's problem, perhaps the organization is held more accountable, even though it is first and foremost considered women's responsibility to change the conditions. If it is a systemic problem, the scope of possibility increases even more. Doing something, creating change, becomes possible and relevant. This is in line with research on reorganization and restructuring in the workplace, and demonstrates the contrast between a "scope of possibility" and a "scope of impossibility" associated with hopelessness. Employees who are involved early in reorganization processes, informed along the way and activated as participants, develop a "scope of possibility" in their own understanding of the process, and are better at dealing with reorganization and staff reductions than employees who are left within the "scope of hopelessness", for example because they lose their job.

"Hopelessness" does not, however, characterize the situation in academia, but rather "impossibility" – the idea that gender differences are what they are and impossible to change. In some ways, the scope of hopelessness and the scope of impossibility resemble each other, including the actual effects – both lead to passivity and a lack of proactive response (Holter et al., 1998).

As already mentioned, the scope of impossibility is often indicated through presumed biological barriers in the interviews. If gender imbalance is explained in terms of genetics, hormones or brain differences, one cannot and should not do anything.

> Since I am in [the natural sciences], I must be allowed to say it, it is a larger, whether it is the gender environment or genetics, I believe it is genetics, but there is a larger variability in cognitive abilities among men than among women. The way I think, you know, it has to do with X and Y and things, it has to do with chromosomes, you know, and … of course, this means that more men are not very smart, and also that more men are really smart. And if you

> imagine, this is probably not certain, I think perhaps the professors at UiO are not necessarily so incredibly smart, but – but, if you imagine extreme selection based on some cognitive abilities, there will be more men.
>
> (Male top researcher)

It says something about the debate climate that this man begins by saying, "I must be allowed to say it". What was perhaps fine to say ten or twenty years ago is no longer acceptable. He *believes* that biology is a factor. But it does not necessarily favour men over women, it is just that the distribution and variation becomes larger among men. Consequently, within a system favouring the best, men will benefit. This interpretation illustrates a rupture in the mentality – first you have an external variable sorting the genders, and then you have "gender neutral" conditions turning this gender differentiation into de facto gender stratification.

Discourse or Demography?

Discourse theory is key to understanding the culture of the faculty under investigation. It focuses on communication, positioning and power. We use discourse theory in combination with other perspectives in this book, such as structural theory (Chapter 8), without claiming that discourse is definitive or that gender is a purely discursive issue. The Triview model's point is that discourse plays an important and active role, and that words and actions *are,* in fact, often strongly connected. Bacchi (2012) points out that actions, for example the selection of women for a gender equality initiative, can in themselves be interpreted as a "women's problem" without being explicitly stated. The practical position may itself state or at least strongly indicate the discursive position. The term *discursive practice* is relevant. In this extended meaning, "discourse" does not only concern what is said but also what is expressed in other ways, such as through body language. Gender may be interpreted as "structured action" (Messerschmidt, 2015). Discourse is about practice, not only about what is being said (Fairclough, 2010).

What, then, decides whether the organization adopts a systemic perspective and develops a greater degree of gender equality and gender balance? Research on the organizational level shows considerable variation,

in part across macro-trends in Europe (Puchert et al., 2005). Work-life research focusing on women addressed quite early the "active" significance of gender balance, or the demographics within the organization through, for example, Rosabeth Moss Kanter's (1977) research on gender proportions in organizations from the 1970s onwards. The historical dimension is also important as an explanatory model. As long as women were excluded or a minority in academia, the dominant view was that the imbalance was a non-problem or a minor problem. As women gradually entered various educational programmes and disciplines, perceptions changed towards the idea of a women's problem. Then with increased gender balance in recent decades, they have changed towards the idea of a systemic problem. Based on this, gender balance is in itself an important causal factor, dynamically affecting gender equality. Nevertheless, a certain "critical mass" is needed in order for underrepresented groups to make a difference.

At the same time, women may be well represented, or in the majority, in various disciplines without that fact automatically creating increased gender equality. The significance of gender proportion is clear, but many other conditions contribute to the situation, including discourse and academic debate, informal culture and prestige. Kanter's (1977) model of "critical mass" and subsequent research on the significance of "the sex ratio" (e.g., Guttentag & Secord, 1983) were often based on the fundamental idea that we "are" genders. That we essentially "do" gender (and that there can be more than two of them) was not part of the picture. Acker's (1990) model of gender as something we *do,* and not just *are,* is, therefore, an essential part of the approach in our project – further elaborated in the chapters in part three of this book. Analyses of gender that bear in mind how gender "is done" or performed, is a step forward.

A case study of the meaning of gender within a specific research tradition (action research) illustrates this point. The study demonstrates how both discourse and demography played a role, contributing to a devaluation of gender perspectives in the early development of action research (Holter, 2008). Gradually, more women researchers had an impact on their own. Other Norwegian research (Bergh, 2008) also emphasizes the importance of demography or gender proportion – proportion plays an "active part" affecting voters' choices or attitudes in elections.[11]

Imbalance as a Women's Problem

Regardless of which eye is used, the three cyclopes all have their faces turned approximately in the same direction – towards women. Although the view "women's problem" is the only view that makes this highly explicit and clear, the other views also have a women-focused understanding of the problem. This also occurs within the systemic view, for instance, when one uses the new term "systemic", or "system problem", yet one still thinks of the problem in traditional terms as a "women's problem". What is the consequence of this? What happens when the problem is perceived as a women's problem? What happens when men "disappear"?

The problem revolves around women, although in slightly different ways. It is *not a problem* because "the smart (women) withdraw", as one of the interviewed men stated. It is almost to their benefit since academia is so competitive towards the top.

In many people's opinion, it is a women's problem, be it in the natural sciences or society in general including women's responsibility for children and family, and this is the main issue that needs to be changed.

According to some respondents, it is a systemic problem, the idea being primarily that the system needs to change the conditions for women through special facilitation.

The consequences of thinking about the imbalance as a women's problem rather than a common problem, including a male problem, are not small or trivial. As a tendency, gender discourse is pushed back to the idea of the woman as gendered and the man as normal and neutral *She* means gendered. *He* means neutral, non-gendered. The male *presence* at the top is only described in terms of a female *absence* – which is obviously not the entire story.

The imbalance is a ratio, and in order to understand that, both sides must be taken into account.[12] Moreover gender must be interpreted as a condition, and a relation, not only as a difference. We have emphasized this by addressing men and masculinity (Chapter 2), and by developing "interactional" models of discrimination (Chapters 7 and 8).

By revolving around gender as female, or something that primarily has to do with women, the debate also establishes a focus and "burden of proof". Focus is directed at women, and as a tendency, the consequence

is that women need to change and prove themselves worthy. Relatively speaking, men are "exempt" from concerns related to gender. This is reflected in our material, for instance, in the highly asymmetrical accumulation of disadvantages in the questionnaires. Thus the *burden of creating change*, or the cost of innovation, is shoved over to the "weak" group within the system. In the next part of the book, we describe how this pattern may be broken, in order to promote innovation and positive organizational change connected to gender equality and gender balance.

Triview, Class and Ethnicity

Finally, in this discussion, we will take a closer look at how the Triview model may be linked to diversity and the intersectional perspective that was presented earlier in the book (Chapter 6). We will also address how the model is connected to the two other models described in Part 2, the Bøygen and Janus models.

The Triview model was developed based on material on gender, but in our opinion, it is also relevant in terms of other dimensions of social inequality, such as social class and ethnicity. The point of departure is the relation between the "normal" and the "deviant", a *discursive power relation*, in which unequal distribution and imbalance are first ignored or explained away and later reluctantly admitted, pushing the burden of rectifying the problem onto the "deviant". It is, in other words, recognized as a problem, yet responsibility is thrown back onto the exposed groups. It is "their" problem. Later on as things develop, the dominant perceptions may, at best, change towards an interpretation of the problem as a broader systemic problem that everyone must solve together.

Such changes, which are not only limited to gender, require that institutions address diversity and social inequality on a broad scale. Taking gender balance seriously can be a "door opener" for this. But it is also important to learn from the problems related to the "systemic perspective" in other types of diversity work. The term "system", for example, is very broad and can easily become vague, and the idea that "everyone" should rectify it may, in practice, mean that little is done, and no one takes responsibility. "Everyone's responsibility" may also mean "nobody's job"

(NOU 2011: 18; NOU 2012: 15). However, such tendencies can be counteracted if the leadership assumes definitive responsibility, as we describe in part three of this book.

Connections Between the Models: Bøygen, Janus and Triview

The Bøygen model (described in Chapter 7) is relevant with regard to other types of social inequality, not just gender. The model describes how devaluation and obstacles drain self-confidence and motivation, and contribute to the exposed group being shut out and/or withdrawing from the most intense competition. The main features of the model probably apply to all "special" groups subject to devaluation. Likewise, in the case of the Triview model, we believe that the model's main features have general relevance – even if the concrete circumstances and modes of operation differ within each dimension of social inequality.

The Janus model (described in Chapter 8) is different and is probably more specific in regard to gender than the other two. Here, we are less certain of its general relevance. The background for this is that gender division is much more visible than division based on other dimensions such as class, ethnicity, sexuality, etc. In our view, it is broader, more prolonged, and more internalized within the higher education system and academic sector.[13] However, the Janus model can be helpful as one of the starting points for mapping other types of skewed selection. It is possible that similar structural mechanisms may be identified in other areas. Actual discrimination may be hidden behind division, first a friendly face and then a thank you and goodbye.[14]

How may we interpret the three models in connection to each other?

In light of discourse and culture, the Triview model may be seen as a continuation of Bøygen. Both models describe how the vulnerable group is not only overexposed to obstacles but also responsible for correcting them. The connection is clear.[15] The tendency to turn the imbalance into a minority problem or a women's problem is probably strengthened by the tendency to think that "there is something wrong with me" as described in the Bøygen model.

But what about Janus and connections between discourse and structure? How are the different views in the Triview model localized with regard to the structural discrimination in the Janus model? These are topics for further research, and what follows here is just an outline.

As a point of departure, one could imagine that the three views (non-problem, women's problem, and systemic problem) were more or less evenly distributed along the diagonal in the Janus model (see Chapter 8). The significance of gender differentiation is high on the student level, whereas gender stratification becomes more visible on the higher levels. Also, employees with more experience in academia think more often in "systemic" ways about problems. But it is not that simple. The inadequate recruitment of girls and women to important natural science disciplines has long been recognized as a problem, regardless of whether it has to do with the women or with the system's mode of operation. And although higher-level employees often have a greater awareness of the system, criticism of the system is not necessarily greater here – it is often rather the opposite, since the notion of a "pure meritocracy" is strong, as we have demonstrated in previous chapters.[16]

Students often perceive gender differentiation as a natural result of inherent gender differences (see Chapter 5). In the middle-levels with young researchers, where competition is often fiercest, many "external" considerations come into play, such as family and care responsibilities. Here, men's careers often still have priority, without that necessarily being perceived as a systemic problem.

At the highest level, permanent academic employees in top positions, we find more awareness of the fact that the system, and how the university is organized, may have something to do with the issue. Although we also find more of a "story with a happy ending" emphasizing gender-neutral assessment in a well-functioning meritocracy. This may be linked to the hypothesis of accumulated effects, and the Janus model discussed previously.

Weak System Criticism?

As previously described, the material in the FRONT project reveals a major gender gap in terms of experiences, with women experiencing

considerably more obstacles and disadvantages than men. One might expect this to be met with correspondingly strong system criticism. That is, however, only partially the case. The questionnaires document additional disadvantages for women, and many women talk about obstacles in the interviews as well, yet this is only marginally formulated as a critique of the system itself.

The three models can contribute to an understanding of these patterns. According to the Bøygen model, criticism tends to be individualized and turned inwards – "there is something wrong with *me*". The Janus model predicts that parts of the unequal treatment will be hidden, with a split between two mechanisms each of which seem irreproachable. The Triview model contributes to this situation by pushing the discourse back towards a "women's problem".

Conclusion

The Triview model describes how the problem of gender imbalance is perceived and discussed at the faculty. It is characterized by three typical views – the problem is small or non-existent, or it is a women's problem, or a systemic problem. There are two persistent features, especially in the first two views. They both focus on women, and men are barely given any consideration. Moreover, the problems are only to a small degree understood as symptoms of ongoing gender discrimination. Everybody "wants" the best. Both the faculty and the university prioritize gender equality. As a male top researcher and leader expressed in one of the interviews, leaders farther down in the system are "expected" to take gender equality into account. The Triview model, especially the two first and most common views, reveal a situation characterized by relatively little knowledge about the actual situation. The FRONT material shows other features. We see that additional burdens for women are greater than first assumed (Chapter 5), that they constitute a coherent pattern of accumulated disadvantages (Chapter 7), and that a combination of gender difference and ranking creates a structural mechanism working in women's disfavour (Chapter 8). The Triview model helps shed more light on discourse and debate relating to this. It demonstrates a division

in the understanding that easily *becomes* ideological and creates barriers and "defence mechanisms" against organizational change and gender equality. However, as a point of departure, this is perhaps only intended as a purely empirical assessment. In other words – it *was* probably not intended as an academic devaluation of women, yet it *is* mostly women who experience devaluation, linked to this discourse and its underlying attitudes.

We see clear signs that the Triview discourse, which most often still revolves around the non-problem and the women's problem, contributes to *silence*. Women, more than men, find it difficult to raise their issues and viewpoints, and they feel more isolated professionally. Also, ethnic minorities report problems of academic devaluation connected to problems of raising their own issues (Chapter 6).

The Triview model identifies a pattern of views and a discourse that tend to create passivity and lack of real change, since – among other things – it still revolves mainly around women as a gender, yet it is not static. In order to understand the model's relevance, and conditions in academia more generally, it is, as mentioned, important to emphasize how *recent* some of the most crucial changes have been. The model is a situational image of the "ongoing door opening into academia" with regard to women. In other words, this is a historical process that has not yet ended.

In the first part of this book, we asked whether imbalance has to do with *ideals* of gender equality that are not implemented in practice. The chapters in part two discuss *why* these ideals are not so simple to pursue, although there are many attempts to do so. The system that creates skewed selection – through Bøygen, Janus and Triview – hides its traces. Gender discrimination is often indirect. Understanding the imbalance problem becomes unilaterally focused, making women (or other exposed groups) the bearers of the problem, with an implicit task – to correct it.

What happens when they try, now armed with new systemic understanding and support within the organization, is the topic for the next part of the book.

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Notes

1 The cyclopes can be regarded as the natural scientists of their time – they were blacksmiths, a somewhat eerie and suspect occupation related to weapons, among other things. If we take the metaphor even further, one can imagine the non-problem as Thunder, the women's problem as Lightning and the systemic problem as Light. This is very loose but not entirely misleading.

2 Such views are often based on an understanding of gender role differentiation as a "functional advantage" to society and/or families. For an updated overview of research on "comparative advantages" of gender division in families, see Kitterød & Halrynjo, 2017.

3 This analysis is based on the overall project material, including what women say about men, but with a relatively low number of direct interviews with men (see Appendix "Method").

4 Artium equals the British General Certificate of Education and American High school diploma.

5 However, the proportion of female theology professors increased from 14 to 29 per cent in 2020 (UiO, 2020).

6 See e.g., Snickare & Linghag, 2012.

7 Or a "male norm" (Hirdman, 1990).

8 For a more detailed review of women's gradual admittance into academia, see e.g., Possing, 2021, Danielsen et al., 2013 and also Chapter 7.

9 Kuhn's analysis was, among other things, based on how the "wrong paradigm" could result in being burned at the stake in the later Middle Ages – early astronomy was denounced as the earth, not the sun, was considered the centre of the universe. The paradigm idea means that one can not only look at "pure facts" but also at how they are chosen, interpreted and presented. An evolutionary theorist notes: "Science is not a collection of facts, contrary to popular belief, but rather a *process* of acquiring understanding of natural phenomena. (…) Despite loose talk of 'proving' hypotheses (…) they cannot attain absolute guaranteed proof. (…) Rather, the hypothesis that currently best explains the data is *provisionally* accepted (Futuyma, 2009, p. 612).

10 This argument is based on experiences with gender equality work in Norway more generally (NOU 2011: 18; NOU 2012: 15, and in academia, cf. Committee for Gender Balance and Diversity in Research, 2021).

11 Bergh emphasizes that if you look at the development over time, it becomes clear that changes begin to occur around the same time as the feminist movement grows stronger. Advocates for gender equality fought within political parties to nominate women. Only after women are elected does general opinion begin to change. At the same time, the majority change their view when they start to see the results of what the minority has accomplished. The significance of gender proportions was also part of the Norwegian academic debate on "shrinking institutions" (with, e.g., Harriet Holter and Hege Skjeie), which we can only mention here.

12 Both – or more precisely – all genders must be taken into account. Here, we primarily note the absence of analyses of men.

13 This applies even though we also see tendencies of ethnic specialization, such as more non-ethnic Norwegians in vocational education, including technology, and few in the humanities. Selection with regard to social class is also relevant, although we cannot address that here.

14 We have examples of discursive power in relation to ethnic minorities and groups from a lower social class background in the FRONT material, but we do not have systematic data on this. For example, a minority might be seen as "exotic" but also "threatening".

15 That is, the connection at the model level. We do not claim that it is empirically proven, although it is substantiated in our material.

16 Here we also need to consider that the system is strongly characterized by selection, and thus also by drop-out upwards in position levels. Unfortunately, we do not have systematic data on perceptions among those who have dropped out of the gradually more challenging competition towards the top. However, based on the indications we do have, they are characterized by both critical and personal elements (cf. "inner doubt" as a component in the Bøygen model).

Part Three

Towards Organizational Change: Measures and Initiatives

In addition to the research described in the first two parts of this book, the FRONT project has consisted of various measures, in order to promote gender equality at the faculty. An important strategy has been *to combine* the implementation of measures with research, that is, to create initiatives that could be applied in practice and at the same time generate new knowledge. In this part of the book, which consists of three chapters, we will describe and analyze some of the measures. These include initiatives for leaders, PhD supervisors, and top female researchers.

The three chapters are based on some common methodological and theoretical points of departure. The research following the measures was based on methodological elements from action research. This implies, among other things, that the researchers worked directly with the initiatives, and that these were developed and adjusted along the way in line with new knowledge that came to light. As a theoretical framework, the "doing gender" perspective was chosen, with particular emphasis on

the American sociologist Joan Acker's research. In this introduction, the common methodological and theoretical perspectives in the book's third part are briefly explained.

Action Research

Action research was developed as early as the 1940s by, among others, Kurt Lewin and John Dewey (Hansson, 2003), and may be described as both a theory and a method (Greenwood & Levin, 2007; Hansson, 2003; Johannisson et al., 2008; Nielsen & Svensson, 2006; Reason & Bradbury, 2001). An important point of departure recognizes that knowledge is created through practical action. Action research is often used to make knowledge, attitudes, and expectations visible – things that are "taken for granted" in an organization – and thereby create a basis for change. The participants in an action research group are central to the research process, and the purpose is to create shared learning among participants and researchers.

One branch of action research is action-oriented gender research, which combines research on gender with both learning and action theory (Amundsdotter, 2009; Amundsdotter et al., 2018). In this same knowledge process, through which the participants, who know their own organization, meet researchers with theoretical knowledge on gender, opportunities for experienced-based learning are created. As a result, both participants and researchers acquire new and well-founded knowledge (Andersson, 2009; Gunnarsson et al., 2007).

An essential difference between action research and other types of research is that the researcher becomes an agent of change through actively participating in the process. The researcher's position and function may vary, as can the dilemmas that may arise (Westlander, 2006). According to Westlander (2006), being an action researcher involves taking on a double role. One must both meet the participants' needs and wishes, and at the same time conduct research that provides new knowledge and is open to a critical, reflexive, and scientific discussion.

In FRONT, the action research perspective meant that the researchers became involved in a learning and knowledge process along with the participants in the project's initiatives. The participants' experiences, observations, and reflections were examined in light of theoretical perspectives from gender research introduced by the researchers. The researchers conducted research *with* the participants rather than *on* or *for* them. However, the participants and the researchers had different goals for knowledge production. When the participants' intention was to create knowledge that could be used directly in the initiated work for change, the researchers' role was to develop that knowledge into interpretations, theories and models that could be reviewed and disseminated in the scientific community.

Action researchers have often been regarded as external agents of change, although some action research traditions have emphasized the internal organizational process, in which the researcher should be a neutral mediator, who helps create change based on the employees' wishes as formulated, for example in dialogue conferences (Holter, 2008). Despite different emphases, successful action research is usually seen as a good combination of external and internal agency.

In FRONT, the external agency was clear – the measures were designed to improve gender balance in the faculty. The internal agency was developed and formulated among the participant employees along the way, in order to help implement the measures and overcome obstacles and barriers.[1]

The researchers following the measures described in part three of the book had somewhat different roles. Herr & Andersson (2005) describe how the researcher's position can vary from being an *insider* researching one's own practice, to being an *outsider* to the context in which the research is taking place. An outsider may also hold different positions, such as an *outsider within* – a sort of in-between position, where one has knowledge about a local context without necessarily being part of it (Herr & Andersson, 2005). Some of the researchers were employed in the same organization as the participants but had a different role. We refer to them as *outsiders within*. Others have only been involved in one of the

initiatives, for instance, leading workshops, and are therefore referred to as *outsiders*.

The empirical material consists of field diaries and interviews. The researchers took notes by hand during the workshops, and at the end of each day they reviewed their individual notes and wrote a joint field diary. Flip-over sheets and other material produced by the participants were also collected and documented in the diary. In addition to the field diary, the empirical material for Chapters 10 and 12 consists of individual interviews with the participants. The semi-structured interviews took one to two hours each and were recorded and transcribed.

In the introduction to each chapter, we describe how we collected the material relevant to the chapter, as well as how we worked with the analysis of the empirical data.

Theoretical Approach to the Initiatives

The work within the initiatives was based on a scientific perspective, in which people create and construct their reality through interaction and dialogue with each other (e.g., Berger & Luckmann, 1966). This involves seeing organizations as social constructions, and gender as an integrated part of the organization's practices, culture, and power relationships (e.g., Acker, 1990, 2000; Butler, 1990, 2006; West & Zimmerman, 1987). This approach is often referred to as "doing gender".

The FRONT project's main objective was increased gender equality in the faculty. From an action research perspective, the first step in this work for change was to engage the organization in exploring and understanding where and how inequality is done – in other words, what is the point of departure for working towards the change that is about to happen? In the practical work with the initiatives, we therefore needed a method that could help increase awareness of and interest in how gender is, in fact, done in the organization. Choosing a method meant taking several things into account. For the method to work as an adequate point of departure for the initiatives, it had to be relatively easy to understand, and thus easily communicated and applied to the employees' work for change at the faculty. At the same time, the method must be scientifically

sound, have broad empirical support, and be able to combine various aspects of gender and organizational change. Gender had to be made visible as both a personal and a social pattern, which, among other things, involves how discursive structures and cultural expressions are internalized through (physical) practices. Due to all these factors, we ended up choosing the American sociologist Joan Acker's research and work on organization theory. The next three chapters show how this has been used in working with the initiatives.

Doing Gender in Organizations

The *doing gender*[2] perspective was first described in the article "Doing Gender" by Candace West and Don Zimmerman from 1987. In this article, the researchers argue that gender is not something we human beings are or have – it is something we do. We are taught how to do gender throughout our lives, and we are "rewarded" by society and our culture when we do it right – and punished when we do it incorrectly. Our upbringing entails that we usually do gender without thinking about it. The act has become automatic. Elin Kvande (2003) uses the metaphors of gender as a noun, gender as an adjective, and gender as a verb to describe the difference between the doing gender perspective and the gender perspective that has formed the basis of previous research. Gender as a noun means that we look at gender as something natural, fairly static, and unwavering. Biologically, we are either female or male, and our biology explains how we behave. Gender as an adjective means that we have both a biological gender, which is steadfast and rather absolute, and a culturally defined gender, a gender role, which can change. Since women and men have learned different things and have different experiences, we behave differently. Gender as a verb shifts the focus to how gender is done. The opportunities we have to behave are affected and limited by the body, but that does not mean that there is a natural behaviour that emerges if we just allow it. Gender continues to be something we do. Holter (1989, p. 110, translated from the Norwegian) summarizes it in the following way: "Social gender is something we *do,* but it appears as something we *are.*" When individuals do gender in the

same way, patterns and structures are created that affect our experience and behaviour. When we do gender automatically, without thinking of what we are doing, we follow the structures and thus contribute to reinforcing and reproducing them. If we are conscious of how we do gender, we can instead choose whether we want to reproduce or break the structures.

According to Sylvia Gherardi (1994), we do gender in two ways: through actions and through thoughts. It is much easier to make actions visible than thoughts – therefore, it is easier to change what we do than how we think. The gender we do through thinking often consists of cultural archetypes – in other words, something that is independent of historical time, society and culture, and therefore more stable and difficult to change than the gender we do through our practices and actions.

Four Analytical Approaches to Examine How Gender Is Done

In the work with measures and initiatives in the FRONT project, we chose to use Joan Acker's (1990) model as a point of departure for analyzing how gender is done in organizations. The model describes four analytical approaches or pathways. These approaches are linked and can therefore be difficult to distinguish in the practical everyday life of an organization. An approach should be seen as both a methodological and an analytical tool that can be applied in order to examine how gender is done in an organization. We wanted to offer these tools to the participants of the FRONT initiatives to help them develop new knowledge and understanding.

Acker's efforts were aimed at understanding the "gendered" organization's modes of operations – that is, an organization that "does" gender even if it is officially neutral. Acker's model for organizational change has later been developed further by Nordic researchers (among others, Linghag, 2009). In our present work, we have chosen to refer to the analytical categories as structure, culture, interactions, and identity work.

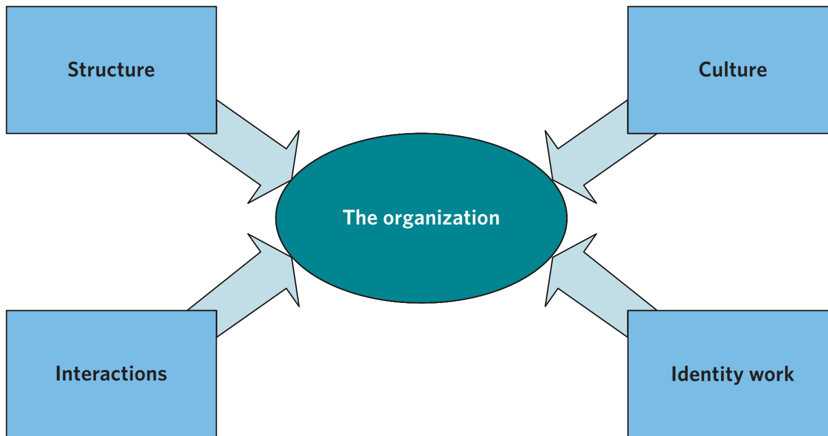

Figure 3.1.1. The model of four analytical approaches to how gender is done in organizations. Based on Acker (1990).

The first approach is *structure*, meaning everything that is done within the organization to structure the work. Much of the work in an organization is not governed in detail by formal guidelines. Routines, ways of doing things, have often developed over time. But according to Acker, it is a mistake to consider the formal organization as objective, rational, and thus gender-neutral, and the informal as subjective, irrational, and less gender-equal. She claims that gender is done through an interaction between the formal and the informal organization. Unfortunately, informal conditions cannot be rectified from above through the formal organization, but must be changed within a model of interaction where all levels of the organization are involved.

According to Acker, culture is the focus of the next approach to examining how gender is done in organizations. The organizational culture becomes visible, and is expressed through symbols such as names of positions, duties, groups and meetings, work wear and dress codes, web pages, and different types of rewards, as well as the layout of the premises and the types of pictures hanging on the walls. The culture shows who is expected to work in the organization, and what they are expected to do. This means that the culture legitimizes the organization's gender and power structure, and at the same time makes it natural.

Acker's third approach to examining gender-doing in an organization is interactions. This entails all the situations within an organization

where people interact: in meeting rooms and by the coffee machine; on the phone and via email; when we talk to or about each other; when we suggest someone for a position; and when we agree with something someone else has said in a meeting. Interactions determine how the meetings take place, how power alliances and subgroups are created, and how they include and exclude different individuals or groups in the organization.

The last analytical approach is identity work. Acker describes identity work as bringing together the conflicting expectations of gender that exist in an organization into an understandable whole. We all interpret different expectations within an organization in terms of how someone with our gender, in our position, should behave. A major part of doing gender happens automatically, in that we adjust to expectations without being aware of doing so. If we are aware of the expectations, we can instead choose either to adjust to them, modify them, or break with them.

The four approaches model was used by the participants in the initiatives to examine their own organization. Their own and others' observations have been systematized through the model's four approaches, which in turn made it possible for the participants to discover patterns and structures in the organization's everyday life.

Briefly About the Chapters

The three chapters in the third part of the book differ from one another. We have obtained the empirical data from a range of measures and initiatives, we have collected it in different ways, and we have chosen to analyze it based on different theoretical frames of reference. However, we have been inspired by action research in all three studies, and all groups of participants have used the four approaches model described above to examine and systematize their own and others' experiences of how gender is done within their organization.

In Chapter 10, "From Biology to Strategy: The Development of a Management Team", we describe a series of workshops for the faculty's management team and discuss the management team's role in gender equality work. What can the team do, specifically, to ensure a culture change towards gender equality in the organization? And what sort of

development does the management team need to be able to do what needs to be done?

In Chapter 11, "From Resistance to Change? Processes for Change Within an Organization", we examine whether the management team's measures have had any effect within the organization through an analysis of another initiative, namely workshops for PhD supervisors on the topic of gender equality.

In Chapter 12, "From Exception to Norm: The Development of Resilience in a Network", we analyze the effects of a network for female professors and associate professors. We examine what it means to be in the gender-minority group, and discuss how a network may develop resilience within an academic organization.

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Notes

1 Note that this agency was in fact internal to the faculty and the university, who had asked for the project – but not to the local units – institutes and independent sub-organizations.

2 The development of the doing gender tradition is discussed and analyzed by Snickare (2012).

CHAPTER 10

From Biology to Strategy: The Development of a Management Team

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Abstract: Research on gender equality projects emphasizes gender equality as a management responsibility, but not many studies focus on how management can organize and implement the process in order to achieve sustainable change. What should the management team actually do? How does the team need to develop in order to be capable of doing what needs to be done? The analysis in this chapter is based mainly on qualitative material in the form of interviews and notes from five workshop days with the management team at the Faculty of Mathematics and Natural Sciences at Oslo University. The data show how the methods and tools that the management team acquired in the workshops have not only given the team members knowledge in the areas they addressed during the workshops, but also the confidence to determine how to proceed in new areas. The concept of sensegiving (cf. Weick & Quinn, 1999) is used to discuss their role in gender equality work. Since gender equality and inequality are done through everyday actions in the organization's processes, the entire organization needs to be invested in any changes. The management team can approach sensegiving by legitimizing the perception of the organization as not being gender equal and by demonstrating how a gender equality perspective can be integrated in the organization's structures and processes.

Keywords: gender equality, management, leadership, organizational change, academia

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Introduction

Researchers widely agree that the management team plays a crucial part in promoting gender equality in an organization. Therefore, the FRONT project chose to design an initiative, "Cultural Change Through Management Development", specifically for the management team of the Faculty of Mathematics and Natural Sciences at the University of Oslo. The intention was to change the culture throughout the organization by providing leaders with the knowledge and tools needed for gender equality work.

In this chapter, we analyze the process of working with the initiative. We look at what the management team can do to develop sustainable gender equality work in the organization, and what the group needs to be able to do this.

Structurally, this chapter begins with a short summary of research on the importance of management's role in gender equality work. This is followed by a description of the initiative that was implemented, data collection and methodology relating to this, and the theoretical framework of the study. In the main part of the chapter, we will describe two scenes, one from the first workshop and one from the last, to illustrate how the participants' group discussions changed. We then analyze the process in the group and conclude by presenting and discussing our results in the light of other research.

Background: The Importance of Leadership for Gender Equality

Comparatively little research has been done on how gender equality can be organized and implemented to achieve sustainable change (Amundsdotter et al., 2015). All studies that have been carried out, however, emphasize the importance of management's commitment (e.g., Acker, 2000; Franzen, 2012; Lombardo & Mergaert, 2013; NOU 2012; Pincus, 1997; SOU 2003:16; Åberg et al, 2012). The first of the Norwegian Research Council's (NFR) twelve points for improved gender balance in academia also lists management's commitment. "Take responsibility!

The management's commitment, intentions and clear ambitions are decisive to success," the research council states, referring to experiences from the various projects and activities within its gender balance programme (Norwegian Research Council, 2019, translated from the Norwegian).

What is needed is not primarily the commitment of individual managers. Among other things, gender equality programmes require showing how various processes together impact an organization, and how leadership is constructed. This can only be achieved if the management team is on board (Hearn, 2000). Several studies show that management teams need to be acquainted with how gender is "done" in the organization to be capable of leading gender equality work. Not having this knowledge can lead to negative effects, and the implemented changes will be merely cosmetic rather than an influence on the organization's structure and culture (Benschop & Verloo, 2006). Projects run by management without knowledge can even increase gender inequality in the organization (Regnö, 2013).

A common way of initiating equality projects is to begin with awareness-raising efforts (cf. SOU, 2003:16). However, increased awareness of how gender inequality is done in an organization does not automatically make the organization staff more positive to change; it can also lead to new forms of resistance (SOU, 2003:16). The focus on raising awareness of gender inequality can also mean that the lack of awareness, rather than gender inequality per se, is identified as the problem that needs solving (Rönnblom, 2011). Thus, training sessions can be used as a strategy for fighting change, by shifting the focus from changing the organization to the training sessions (Rönnblom, 2011).

Despite the increasing amount of research from a gender perspective on the conditions and opportunities in organizations, the process of improving gender equality can still be slow (Ainsworth et al., 2010). Meagre progress despite the availability of new methods and tools, and many new projects, is not entirely attributable to the complexity of equality work, according to Amundsdotter et al. (2015). Slow progress is also due to a reluctance to change. Measures that reveal gender inequality

challenge an organization's structure and culture, and therefore provoke resistance (cf. Andersson et al., 2012).

In a study of efforts to increase diversity, Ahmed (2012) shows how an organization's need to prove the success of its efforts actually hampers real change. Procedures are focused on results that are quantifiable or can be shown, such as writing policy documents and exemplifications of diversity, whereas more long-term, effective actions have lower priority, since the results are hard to measure. Much of the time and resources allocated to equality and diversity are used to control and organize the work, while actual change takes a back seat (Keisu, 2012). The focus on structure, methods and tools becomes a form of resistance that risks reproducing inequalities (Fraser 2011). Eagerness to show determination and fast results means that efforts to understand the problem that needs remedying receives lower priority (Snickare, 2012). Without truly understanding where and how inequality arises in the organization, and what the process of change based on this understanding entails, no real change can be achieved (Rönnblom, 2011; Tollin, 2011).

As described above, management is often identified as the key to success when changing an organization. But not many studies exist on how management can organize and implement the process in order to achieve sustainable change. What should the team actually do? What does it mean, for instance, to take responsibility for equality work? How does the team need to develop in order to be capable of doing what needs to be done? If awareness is not enough, what else is needed? We will examine and discuss these issues further in the chapter.

Initiative, Empirical Data and Method

The purpose of the initiative, "Cultural Change Through Leadership Development", was to provide the faculty's management team with the knowledge and tools they need to engage actively in gender equality work, which means to act according to a conscious gender equality strategy, and to encourage and facilitate a change-positive organizational culture. The initiative, which was designed by FRONT's research group on behalf of the management team, began with three meetings with the management

team on the topic of equality. The researchers also had one-to-one meetings with all heads of departments to discuss equality work within the different departments, what had been done, and what the biggest challenges were. The next step in the process was five workshop days on gender equality for the entire team. The group began with a 2-day workshop, met again after three months for a 1-day workshop, and concluded with a 2-day workshop after a further three months.

The initiative was inspired by both the research on leadership and gender equality described above, and by the action research methodology described in greater detail in the introduction to Part 3 of this book. In the workshops, short lectures on gender and organization focusing on academia were alternated with reflection, exercises and homework. This theoretical knowledge was reflected on and used to structure the participants' experiences, as well as observations from their own organization that constituted the homework.

The analysis in this chapter is based mainly on qualitative material in the form of interviews and notes from the five workshop days. The two researchers who led the workshops took notes by hand throughout the workshops. At the end of each workshop day, they went through their individual notes and combined them into a joint field diary. Flipchart sheets and other material produced by the participants as a group were collected and documented in the field diary. In addition to the field diary, the empirical data for this chapter consists of individual participant interviews. These semi-structured interviews were carried out one year after the workshop series ended. They lasted for one to two hours and were recorded and transcribed.

The analysis began with an inductive approach to the material, which was examined several times to identify recurring themes in the form of similarities and differences. Coding was based on the informants' own descriptions. In the next phase, the material was interpreted according to the critical sensemaking theory described in the next part of this chapter. In our analysis, we look at the role of the management team – what it can do in practice – in implementing a sustainable equality process in the organization, and how the team needs to evolve in order to be capable of doing this.

Sensemaking and Sensegiving

That organizations change constantly is an established fact within organizational research today. However, discussion continues on the pros and cons of the two most common perspectives of change – planning and organizing, respectively (cf. Iveroth & Hallencreutz, 2016). The planning perspective studies the failures discovered in the current situation, and presents a plan for how to achieve the desired result. Management's role in this perspective is to plan the change, handle resistance in the transition phase, and follow up the outcome. The organization is then expected to stabilize in its new situation before embarking on the next planned change (Cf. Lewin, 1951).

The organizing perspective involves seeing organizations as evolving and in perpetual motion. Change is the normal state and takes place, for instance, in the form of interactions during day-to-day activities: in actions and formal or informal meetings, for example when colleagues discuss business or chat around the coffee machine. Management's role in the organizing perspective is primarily to make sure that strategies for change are comprehensible by applying various sensemaking and sensegiving processes (cf. Weick & Quinn, 1999).

Sensemaking has long been a popular approach in organization research, and consequently, there are several definitions. Brown et al. found that sensemaking is often described as "those processes by which people seek plausibility to understand ambiguous, equivocal or confusing issues or events" (Brown et al., p. 266). In his ground-breaking work, Weick defines sensemaking as having a number of interrelated characteristics: sensemaking is a *social*, *ongoing*, *identity-constructing* activity where participants *retrospectively enact* their surrounding environments from which they *exact cues* and make *plausible* sense (Weick, 1995; Weick et al., 2005). Based on Weick's work, Mills et al. (2010) propose that we develop a critical sensemaking strategy (CSM) to acknowledge not only the broader macro/social context, but also the meso/organizational and micro/individual levels. By working with discourse (inspired by Foucault and critical discourse analysis), organizational rules and cultures, as well as what Unger (2004) calls "formative contexts", Mills et al. (2010) developed a model that addresses "how individuals make sense of their

environments at a local level while acknowledging power relations in a broader societal context" (Mills et al., 2010, p. 190). Formative contexts are institutional or individually created practices that serve as structures and thereby limit what can be done (Mills et al., 2010; Trubek, 1989), and consequently what is considered reasonable to do. Often, formative contexts become "natural" over time and are no longer questioned. CSM highlights the need to explore sensemaking as identity work, while recognizing that surrounding structures can greatly restrict these processes.

Sensegiving is an elaboration of the concept of sensemaking. Gioia and Chittipeddi (1991) describe it as "concerned with the process of attempting to influence the sensemaking and meaning construction of others, towards a preferred redefinition of organizational reality" (Gioia & Chittipeddi, 1991, p. 442).

Sensegiving is management's task – giving meaning to change – while the people in organizations, especially those in key positions, need to address sensemaking, that is, making sense of the changes, according to Gioia and Chittipeddi (1991). While studying processes of change at a university in the USA, the two researchers developed a theory on how sensegiving and sensemaking undergo various strategic phases when an organization changes. In the first phase, sensegiving is initiated by the management of the organization. In dialogue with the management, it is then developed by key persons and becomes sensemaking for both management and the organization as a whole. Management can then proceed with sensegiving from a new level of sensemaking. Through multiple phases of sensegiving and sensemaking, the change is then disseminated via key persons to the organization in such a way that individuals and groups can integrate it, and both understand and accept it.

Weick and Quinn (1999) also emphasize that management's role in change is sensegiving, and that change can only be successful if it is perceived as interesting and attractive by those who are targeted. Gioia and Chittipeddi (1991) clarify management's central role in this process:

> As a consequence of our revised perspective on strategic change initiation in terms of sensemaking and sensegiving, a different view of the top management's role during the beginning stages of change emerges. The CEO (and ultimately

> the top management team) can be seen as architects, assimilators, and facilitators of strategic change. The acts of making sense of, and giving sense about, the interpretation of a new vision for the institution constitute key processes involved in instigating and managing change. (Gioia & Chittipeddi, 1991 p. 446)

From the above, we conclude that it does not suffice to plan and implement strategic change focused on cultural change and equality. We also need to focus on and create awareness of how sensemaking and sensegiving can create more understanding for change, and thus make it more enduring.

Two Workshops

So, what happens when theories on leadership and organizational change meet empiricism? We will now present a more concrete picture of the workshops with the management team, using one example from the early phase, and one from the late phase of the initiative, respectively.

The First Scene

> "I was thinking about women and men. That we're biologically different."

> "I wrote fairness. We're different, but the purpose of working with gender equality is that it should be fair. For example, biology shouldn't affect recruitment."

The first workshop has just started, and the participants, three women and eleven men, are looking at a wall full of post-it notes. The task for each is to think of five to eight words or sentences that come to mind when they hear the word "sex", and write them on post-its. The notes are stuck on the wall, and each person then presents their note by reading it aloud and commenting on why they chose those particular words. The mood is friendly and a bit giggly.

Nearly all the participants associate the word sex with physical bodies. Their comments include words like "women", "men", "similarities" and "differences", saying that women and men are biologically different, and that the word sex first of all makes them think of sexual attraction and

the relationship between men and women, or reproduction and giving birth.

Many also chose words and terms such as gender equality and equal rights, describing how they associate sex, i.e. gender, with working to achieve these goals. Others said they thought of how different women's and men's lives are: from education and recreational activities for kids and youths, to the gender-segregated labour market, and unequal distribution of labour at home. Several also mentioned cultural differences, such as what discussions are like depending on which gender dominates in numbers.

When participants were interviewed about the workshop, they referred to the post-it exercise, saying that they felt free to write and say what they wanted. Kristian, for instance, said he "feels that the atmosphere is very good – nobody just sits around and doesn't want to take part". Kari describes the same thing, saying that even though the workshop "was inconvenient timewise, and the theme was a bit heavy, but once you're there, everybody does their best. You discuss when it's time for discussion, and you help to keep the discussion going."

Several participants also say that they find the issue of equality hard. Stein says, "It's not at all easy to understand. Even with the best intentions, if you do things wrong nothing will get better – or at least, progress will be very slow." Wenche stresses that this is a difficult issue and that it's easy to make mistakes. She has the requisite competence now, but she didn't when the project started, and "without the skills you tend to resort to simple solutions that don't lead to sustainable results." Similarly, Olav describes equality work as a field where they previously found it hard to know what to do. He says, "I always have the urge to try to do something, but I didn't feel that it was so action-oriented." Kristian says almost the same thing, "I feel like we see it as a common challenge and that we constantly meet the challenge, and that we perhaps feel that we aren't doing enough." Management has agreed that they want equality, he says, but it's been hard to know what is needed, and what actions to take in order to combat any inequality.

The purpose of the exercise with post-it notes is to examine and bring the group's thoughts on the workshop theme out into the open. After the exercise, the FRONT project was presented, and the participants

introduced themselves and their expectations, before agreeing on how to proceed with the work.

The Second Scene

> "All faculty management need the awareness and skills to work with gender equality."

> "The recruitment process – every step from advertising to evaluation of candidates needs to be reviewed. For instance, we should discuss training for members of evaluation committees."

The third workshop is nearing its end, and participants work in groups of four. The atmosphere is focused and discussions are lively. The workshop began with the task of writing down all the issues they felt were important to address on flipchart sheets. These issues were then arranged according to themes that the participants worked on in groups. The areas that eventually emerged, in addition to leadership development and recruitment (see above), were career guidance and research strategies. Participants said that gender imbalance in the organization is partly a result of women and men not obtaining the same career support in the form of recommendations, invitations to networks, etc., in their daily working life. Increased awareness of how gender affects career guidance is therefore essential. Equality is also crucial in the faculty's research strategy. The management team must ensure that this is reflected in the recruitment.

> I thought we were only going to discuss gender and equality – but we've talked about what is important for us now … the faculty's strategic issues. What we never have time to talk about at our Thursday meetings.

In the interviews after the workshops, participants describe how their views on gender equality work have changed. In the above quote, Olav says he no longer sees gender equality as a separate issue but more like a perspective on other issues, and part of the faculty's strategic work. Wenche describes how gender equality in the workshops "became a springboard or a starting point for other major issues".

Gender equality work in the sense of changing a culture entails a long-term approach. "Because it takes a long time for a cultural change to be accepted and gain legitimacy, you just have to keep on and on," says Kristian. Aksel agrees, "It's all those tiny drops – they can never achieve a radical difference, but I think they gradually turn things in another direction".

Seeing gender equality as a facet of the faculty's strategic work means that the participants perceive management's responsibility more clearly. "Firstly – as a leader you really need to have this on your agenda," says Wenche. "Management should be the trailblazers," says Silje. Aksel elaborates on management's responsibility, "Someone needs to own the perspective. You need someone to own the overarching problem". Taking responsibility for the issue as a leader is to "own the perspective", that is, to admit to a description of the organization as being unequal, and to state that gender equality is important to work on, says Aksel. He adds that he as a leader builds organizational culture through leading by example, "This is how we do things here". Stein also emphasizes management's responsibility. If management shows that the issue is important, the organization will follow suit. He says, "If management has the respect of the organization – when we say that gender equality is a serious issue, then it will be taken seriously."

Kari describes how the workshops have led to team-building in the management team. They had time to talk to each other. "Team-building, absolutely," Silje replies to the question of how the workshops impacted the management team. She describes how the nervousness she felt at the beginning of the first workshop was soon dispelled, "Okay, I felt … I'm not going to feel bad about taking them away from their work, because this was good". Kristian concurs. He says the workshop theme was important, but that it was also an opportunity for the management team to spend time together, which "had a team-building effect".

Knowledge for Change: A Description of the Workshop Series

The above scenes are from the 6-month series of workshops that the management team attended. At the start, several of the participants were

sceptical about which actions would lead to change. At the concluding workshop, however, there was serious readiness to take action. Although the changes that took place in the group's discussions are not entirely – or perhaps even primarily – attributable to the workshop series itself, descriptions of how awareness, and the subsequent ability to take action, developed in the group over 6 months will be discussed in relation to the series. We will not discuss other possible causes behind the changes, or the gender equality work that took place in the organization earlier, and which may have prepared the way for the workshops. As in all groups, the individual members already had diverse experiences, previous knowledge and agendas. The purpose of this text is to examine the actions of a management team. Therefore, the focus is on the group as a whole, not on individual members.

Knowledge: Shared and Created

> It feels like … I don't know what to do. That's a dilemma.
>
> (Interview with Aksel)

As a leader, Aksel is aware that he should be driving the efforts to improve gender equality at the faculty. This is expressed in policy documents and at meetings. But, as he says above, he doesn't know what he is supposed to do in reality, and that troubles him.

As described in the introduction to the third part of the book, our efforts on this project have focused on the doing-gender perspective. This means that gender – and thus, gender equality and inequality – is something that is done by individuals, mainly in relation to other individuals, but also separately. The doing is often automatic. We are so accustomed to it that we don't see, or think about, when it happens. Doing gender forms patterns and structures that in turn influence how we do gender. But the doing not only replicates these patterns – the way it is perpetually done either replicates or breaks down these patterns. When gender is done automatically, it follows the patterns, replicating them, while doing gender with awareness can either recreate the patterns or break them (cf. Gherardi, 1995; Kvande, 2003; West & Zimmerman, 1987).

Similarly, a large part of what happens within an organization is taken for granted. Our behaviour is automatic and unreflective, or we "stick to the same procedure": when we recruit; celebrate that someone got a research grant; hold a department meeting; or plan a course. We often hear that "it's deeply ingrained". Adopting a "doing gender" approach in this project means examining and analyzing how these "deeply ingrained" attitudes impact the organization's gender equality. What happens if a routine is followed or not followed? What actions assert and enhance the routine, and what actions change it? What takes place in everyday interactions within the organization? What are the effects of individuals acting together and creating meaning or building smaller groups to cater to specific interests?

> I think that even if I felt it was demanding, it did something to me, having these meetings and that I was really forced to think seriously about my own opinions, how things are perceived, and how things are done.
>
> (Interview with Kari)

Kari describes her experience of the workshops as demanding. It is demanding, having to analyze her own thoughts, how things are perceived and done, and to see what happens in the organization. It is difficult and demanding, bringing "deeply ingrained" things into the open, to become aware of previously automatic behaviours. Aksel says that he "has trouble seeing his own bias". He does not question that he "does gender", for instance by treating and judging women and men differently. But he finds it hard to define how this happens, what he does specifically. This matches Stein's description in scene 1, and his statement that the equality issue "isn't that easy to understand", while Wenche says that "without the skills you tend to resort to simple solutions".

Developing a Now

> I am very data-driven. I'm always on the lookout for underlying causes, how bad it is, what the facts are, what we know about the mechanisms here.
>
> (Interview with Aksel)

When talking about the workshops, the participants stress that they were based on knowledge. Asked what he appreciated the most, for instance, Kristian says, “That it was knowledge-based”. Wenche is even more specific, and says that having research and studies from other fields is not good enough, you need knowledge about your own particular organization, or even your own part of the organization, in order to get legitimacy, “because working for knowledge industries requires that you have knowledge about your own field. Even if you have loads of international studies, it’s still not enough, and you have to create legitimacy in your own field in order for it to work”.

A management team needs knowledge of the field where it wants to achieve change. In this instance, knowing where and how gender equality and inequality are done in their faculty. They need to know where and what needs to change for gender equality to increase, and how they should work to achieve it. During the workshops, this knowledge was developed in several ways: through lectures on gender theory and gender research; through the participants examining their own activities; and by sharing experiences and performing analyses together.

> But the seminars contributed to raising awareness, which I think was necessary in order to see what this is really about.
>
> (Interview with Silje)

Participants had opportunities to practice their ability to notice things in the organization that can have effects depending on gender. Observing what goes on at meetings improves the ability to notice things that are usually taken for granted: who talks; who listens to whom; how body language changes; who is included and excluded; who controls the agenda and formulates problems; who sits next to whom; who talks to whom during coffee breaks, etc. Observation is also one way of approaching problem formulation, in order to identify the actions and contexts that consolidate gender inequality.

Participants were asked to make observations individually prior to each workshop. At the workshops, they then reported on what they had done, what they had noticed, and their interpretation of what they had

seen and heard. Telling each other about their observations constituted the first analysis. The group then worked interactively in different constellations, sharing their experiences and thoughts, to explore patterns and variations.

> You get to hear the perspectives of your colleagues from departments with similar but not identical problems. And then you see that, "Well, we might have one or two challenges in common".
>
> (Interview with Olav)

Gender theory provided participants with tools to analyze their own activities. As described in the introduction to part three, an adaptation of Acker's model (Acker, 1990, 1994) was used consistently in this project. The model helped participants to systematize their observations, which, in turn, enabled them to discover patterns and structures in everyday operations within the organization. In addition to assisting them in this examination, models and concepts from gender theory also provided a vocabulary for the phenomena they identified.

Studies with a gender perspective, based on empirical data from both the participants' own organization and other fields and activities, were also used to offer a better understanding of the participants' own activities. By comparing, noting similarities and differences, they could bring "deeply ingrained" behaviour into the open. Descriptions of gender inequalities in other organizations offer approaches and methods that can be used to examine phenomena in your own organization.

Working with your own discoveries, combined with listening to and reflecting on the discoveries, observations or research made by other participants – and together analyzing and highlighting patters from different angles, is one way of guiding a knowledge process on gender issues in organizations. It is often hard to discern how actions help establish patterns or enable alternative approaches. The learning itself takes time, and the material needs to be processed in several stages. It is comparable to the "development stage" in analogue photography (Amundsdotter, 2009).

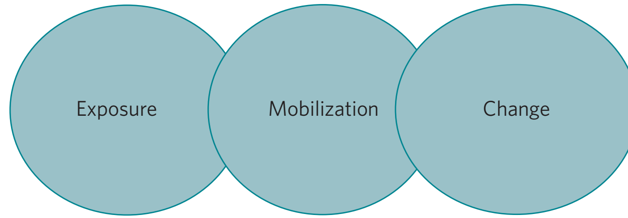

Figure 10.1. Model for change process, taken from Amundsdotter (2009).

In the first stage of the process towards change – development (Amundsdotter, 2009) – participants receive knowledge and generate new knowledge in group exercises. Knowledge that is provided in the form of gender theory, is used to analyze and systematize observations, producing new knowledge. Meanwhile, knowledge provided in the form of research articles, based on empirical studies within the organization and from other sources, together with the participants' own observations, is used to bring the "deeply ingrained" into the open.

Challenging ideologies and mindsets requires a collective effort. Hearing the examples and reflections of others enables participants to discover things in themselves or their everyday life that they may not otherwise have noticed. While a personal episode can seem like an exception, on hearing that several others have had the same experience we begin to see a pattern.

From Development to Mobilization

The development stage described above generated awareness of the organization's "current image", that is, the picture of the organization on which to base an analysis, and identify problems in relation to the desired result. This first stage is a period of learning and exploring how gender is done and given its meaning within the faculty. Development can take a long time or happen fast, but the "current image" that eventually emerges, the new picture of the organization, is the starting point for the next stage. Discoveries are summarized and compiled, and strategies for what needs to change are discussed and elaborated in stage two, mobilization (Amundsdotter, 2009).

> But I think the underlying mechanisms of why things don't happen automatically have become much clearer to me. Because we now have more facts and awareness of what actually is.
>
> (Interview with Kristian)

Several of the interviewees mention that not until they become aware of the underlying causes behind routines – why things are done in a certain way – can they see what needs to change, and also understand why change will encounter resistance. In the above quote, Kristian relates how the workshops have made him more aware of "the underlying mechanisms of why things don't happen automatically". Stein says that the workshops gave him "a clear and distinct picture of what the problem is". Olav agrees and says, "What we learned in these workshops is that we can't expect things to sort themselves out". Olav is describing an awareness that gender equality in the organization will not happen automatically. Something has to be done to achieve change.

On the final two workshop days, participants looked at these questions: What is the problem? In what contexts are undesirable situations reiterated? How can we understand what happens? What do we need to learn more about? It was important at this stage to allow time for deeper study and analysis, to achieve a clearer idea of how the change should be planned. Participants often want to move ahead to action and change directly, before studying and analyzing the matter properly, and to skip making a thorough analysis of "the underlying mechanisms". Several participants also described how hard it was to refrain from making action plans during the first two workshop sessions. Olav, for instance, says, "I felt we had discussions, and that we dealt with the themes, but what I wanted, I felt I always had the urge to try to do something, but I didn't feel that it was that action-oriented." He describes how the discussions triggered him to want to act after the workshops, that he wanted to do something. During the workshop, participants were told not to plan or discuss "action". Instead, they should start analyzing and describing the current situation in the defined problem areas, and to present examples of contexts where undesirable situations and gender inequalities are reproduced. The workshop concluded with a discussion of the problem

that had been defined together, and suggestions of what needed to be looked into more thoroughly.

After the first discussions, participants decided to focus in the first stage on four problem areas or themes: research strategy, recruitment, career guidance and leadership development. In the next stage, making plans for concrete change, the Acker model described above was used. Participants discussed what actions would lead to a new current situation. Should the change be achieved with: new procedures, a new culture, new patterns for interaction, or more awareness?

Based on the group's new awareness and observations, they embarked on both analyzing the areas that had been revealed in the process, and planning for concrete measures to achieve change. This was accomplished partly through reflecting on the questions above in order to find actions that could change the current situation. The last two days were different compared with the first workshops. Participants now focused on concrete issues related to their own organization. This was widely appreciated.

Plans for concrete measures were based on the knowledge and awareness gained during the previous two workshops. This includes knowledge of how gender is done and the effects it has on an organization, and how to examine the organization from a gender perspective. It also means how to continue creating new knowledge and awareness, but also knowledge on how changing the culture means doing things in new ways, and that this does not happen automatically, and always encounters resistance. Therefore, it must be implemented by management.

Leadership in Sustainable Work on Gender Equality

Sensegiving

The management team has agreed that its role in the faculty's gender equality work is important. This task includes being the *figurehead* for the process, according to Silje. If management demonstrates that "gender equality is important, then it will be taken seriously," says Svein. Legitimizing the work for gender equality is thus a key part of management tasks,

demonstrating that this is something that will actually be implemented. Organizations are fast-paced, and assignments come from many different levels, meaning that middle management feel that they do not always have time for everything that ends up on their plate. One key managerial skill, therefore, involves being able to prioritize tasks. Priorities are partly determined by who initiates the task, and whether the area it involves is a key issue in the organization (Kallifatides, 2002). Silje's description of leaders as figureheads for gender equality, and Svein's statement that equality is taken seriously if management establishes its importance, can be interpreted as them noticing that some issues and areas in the organization can be overlooked without incurring any major penalty. One task for management is to ensure that gender equality is not seen as one of these issues.

When the management team describes its approach to gender equality, they say that it is "on the agenda", or that they "own the perspective, the overall problem". They refer to gender equality as part of, or a perspective on, other issues. Olav, for instance, says that he thought that they would "just talk about gender and gender equality" at the workshops, but instead they discussed the faculty's strategic issues. Participants describe how they were given methods and tools in the course of the workshops to identify gender inequality. They have focused on some particular areas and now know how inequalities arise, whereas other areas remain unexamined. But these methods and tools make them feel confident about how to move on and start working on new areas.

A large share of an organization's equality work consists in demonstrating that equality is yet to be achieved (Ahmed, 2017). Denying that the organization is unequal can be one way of actively resisting gender equality. If the organization is already gender equal, no gender equality work is needed. Other issues can be prioritized instead. Resistance can also be passive, simply by accepting that the organization's unequal processes and structures are the normal, usual way of doing things. This makes inequality invisible. By stating that they believe gender equality should be "on the agenda" and that they should "own the perspective", management could be said to take responsibility for demonstrating that gender equality is a legitimate part of the organization's work. They

support the description of the organization as being not yet gender equal, and they show concrete examples of how and where inequalities exist.

Identifying processes and situations where inequalities exist, that is, demonstrating with concrete examples that gender equality strategies are necessary and important since gender equality is yet to be achieved, is one way for management to take responsibility for gender equality work. The *doing gender* perspective on organizations that has infused the FRONT project, however, entails that the organization's structure and processes are identified as being gendered. Gender is not something that is added but an integral part of everything that happens within the organization (Acker, 1990; West & Zimmerman, 1987). This process-oriented perspective on organizations – that gender is done continuously – means that organizations are regarded as constantly evolving, and that change is the normal state. This, in turn, means that the process of change has to be propagated and implemented at every level in the organization. If gender is *done* in everyday actions in the organization's processes, everyone involved must behave in a new way for change to be achieved. It is not sufficient that management changes its behaviour. In order for change to be successful in an organization that is constantly changing, the employees must consider it to be interesting and desirable. They have to be committed to working for change.

Therefore, a key role for management here is *sensegiving*, meaning influencing employees' *sensemaking*, their attitude to, and understanding of, the change (cf. Weick & Quinn, 1999). Individuals must experience change as meaningful, or at least not so threatening that it causes resistance and ambivalence. Sensemaking is linked to power in organizations, and critical sensemaking theory therefore also entails criticism of this power (cf. Mills et al., 2010). There are many ways of interpreting or "making sense" of one's role in an organization, but these are not presented neutrally by the organization. Some forms of sensemaking are promoted in the organization, and others are ignored or rejected. Even in fairly horizontal and democratic organizations, there is conflict over which sensemaking should prevail.

The management team describes their work with sensegiving in two ways. The first is to ensure that gender equality is a priority in the

organization; that it is not optional. The other is to acknowledge the picture of the organization as being unequal, both by having equality "on the agenda" and by "owning the perspective", that is, demonstrating how the equality perspective can be included in other issues. By clarifying their view of the organization, that gender is done and is integral to everything that takes place in the organization, and that it does not consider the organization to be gender equal, management gives legitimacy to the equality strategy.

Generating New Knowledge and Awareness

The management team is fast to take action, it wants to get things done. Participants can feel frustrated by seminars that focus on describing problems in depth and generating new knowledge and awareness, instead of planning and setting goals to act on. Olav, for instance, says he was disappointed with the first workshops because they weren't action-oriented. He had "the urge to try to do something". Taking the time to explore and understand how gender inequalities arise, however, is something that the management team later considered to be crucial to achieving sustainable change. "Without these skills, you tend to resort to simple solutions", says Wenche. Olav emphasizes that he needs to understand the "underlying causes", in order to initiate change. The management team, for instance, starts the work on the recruitment process by comparing experiences, reading up on research and ordering the organization to examine factors that they need to know more about. Not until then are they ready to decide on how to proceed. Several participants describe how their attitude to equality strategies has changed in the course of the project. When they came to the first workshop, they thought equality work was hard, since they didn't know how to approach it in practice. Aksel expresses this clearly, "I don't know what to do."

By examining, in the course of the project, how inequality is done in practice in the organization's processes, it becomes clear what needs to change and what the management team can do to achieve sustainable change. Change implemented without knowledge usually only leads to

cosmetic results and can even exacerbate gender inequalities (Benschop & Verloo, 2006; Regnö, 2013). Wahl et al. (2001, 2018) have an expression for the attitude behind equality strategies that lack an understanding of how inequality is done in organizations: "It will sort itself out". Setting goals, starting projects and making changes in only parts of a process can lead to temporary improvements in the organization's gender balance, for instance, according to Wahl et al. If the organization lacks awareness of what is to be achieved and how to get there, it will seek to return to what was previously considered to be the normal state of affairs. When the goal is no longer in focus and the project ends, "it will sort itself out".

But it is not sufficient that management knows how inequality is done in the organization. The process-oriented approach to organizations that doing gender entails means that change has to be implemented at every level. Knowledge of where and how gender inequality is done in the organization, and what needs to change in order to achieve gender equality, must permeate the entire organization.

The management team increased its knowledge and awareness of how gender inequality is done by applying gender theory as a tool. This included an adaptation of the Acker model (Acker, 1990, 1994) to support systematic observation in order to identify patterns and structures. Also, studies with a gender perspective, such as descriptions of how inequality is done in other organizations, were used to examine and interpret what happens within their own. Examining the routine activities of your organization, along with thinking about and listening to the observations or research of other participants, and then looking at patterns together, is one way of increasing knowledge and awareness.

The management team opted to apply a uniform type of knowledge process throughout the organization. As described in the introduction to part three, the doing gender perspective and an adaptation of the Acker model (1990, 1994) was used consistently in this project to examine how gender is done in organizations. This is not the only, or perhaps even the best, way of looking at gender. However, by choosing a perspective and a method that are relatively easy to understand and implement, and can be communicated and applied in the process by the staff in their faculty,

the management team has provided a coherent platform to work from. Gender equality is an issue that affects everyone in the organization on a personal level, an issue everyone has some kind of experience of and thus usually an opinion about. This makes it hard to build consensus around a common knowledge base for further work. When management contributes to the knowledge base, through training that teaches a gender perspective and a method that all employees can implement in their day-to-day activities, this enables change on all levels.

Sharing Responsibility

As explained above, applying sensegiving and communicating a method for identifying where and how inequality is done in the organization means that management takes an active part in the equality strategy. Gender equality is often perceived as a difficult problem by management. This is a new field for many, and equality issues often encounter resistance. Addressing gender inequality in an organization means working with complex processes of change (Amundsdotter et al., 2015; Benschop & Verloo, 2006; Regnö, 2013). Bringing inequality out into the open challenges the organization's structure and culture, and therefore provokes resistance (Andersson et al., 2012; Wahl et al., 2015). How can the management team state clearly both that the organization is not gender equal and that equality strategies are important?

Several participants use the word team-building to describe the effects of the workshops. Their answers vary when asked who they consider to be in charge of the management team's gender equality strategy. The participants also give examples of how the process is promoted in different areas in addition to this gender equality project: in management team meetings; in budgeting; in staffing; in the departments; in research; and in working with teaching and student recruitment. More than half of the participants are identified by others as promoting the process in various ways.

Our results indicate that if management feels that responsibility for the equality strategy is shared, then they take a more active and managerial role. The group can share the responsibility because they have increased their knowledge and awareness of gender equality and strategies together.

It is our view that management needs team-building in order to take charge of their gender equality strategies.

Gender Equality: A Strategic Issue

Many of the participants report that their attitude to gender equality work has changed during the workshops. Equality is no longer a separate and difficult issue but a starting point for other issues. This will be a starting point that adds to strategic issues, which means discovering new ways to achieve goals, new solutions. All interviewees describe this as being positive. Their expectation was that they would simply discuss gender equality, a field that most of them were uncomfortable with, but discussions instead encompassed the faculty's strategic issues, the issues they never have time to talk properly about, from a new perspective.

Our results indicate that discovering that gender equality is integral to, or an element of, the faculty's *strategic issues* is reassuring to the participants. The management team is used to handling such issues. Knowing that these are the areas where they can and should address gender equality makes equality work both concrete and easy to understand.

Conclusion

The management team's task in gender equality work can be described by the term sensegiving, as influencing employees' *sensemaking*, meaning their attitude to and understanding of gender equality work (cf. Weick & Quinn, 1999). Since gender equality and inequality are done through everyday actions in the organization's processes, the entire organization needs to be engaged in any changes. The management team can approach sensegiving by prioritizing gender equality work, by legitimizing the perception of the organization as not being gender equal, and by demonstrating how a gender equality perspective can be integrated in the organization's processes. They can also contribute to the organization's knowledge, awareness, and readiness to take action by choosing a perspective on, and a method for, gender equality work that all employees can implement in their regular activities.

Driving gender equality work in this way requires the management team to develop actions together as a team, and clearly recognize that the responsibility is shared by all. This also requires knowledge and awareness, knowing that they are qualified to deal with the issue. The methods and tools they acquired in the workshop series have not only given them knowledge about areas they have already addressed, but also the confidence to determine how to proceed in new areas. Awareness that gender equality is an integral part of our perspective on the faculty's strategic issues further reinforces their work.

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CHAPTER 11

From Resistance to Change: Processes for Change Within an Organization?

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Abstract: Management is often identified as the key to success when changing an organization. In chapter ten, the role of the management team in gender equality work is analysed, as well as what the team needs in order to address these issues. But has the faculty management team's commitment to gender equality work had any effects on the organization? Has the discourse changed? Are things done differently? This chapter analyzes the effects of the management team's efforts by studying a seminar series for PhD supervisors. The series consists of two parts: five seminars before the management team embarked on gender equality work, and seven seminars after. The data show that when the management team clearly stated that gender-related challenges remained within the faculty and offered a theoretical approach and method for the organization's gender equality work, the seminar discussions moved from resistance, denial and ambivalence, to an interest in understanding one's own role and potential for improving gender equality. When the management team contributed to the knowledge base through education in gender perspectives and offered a method for the organizational work that all employees could apply in their everyday activities, this opened opportunities for change at all levels in the organization.

Keywords: gender equality, resistance, supervising, organizational change, academia

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This chapter explores whether, and if so how, a management team's work on gender equality impacts the organization. In the previous chapter, we discussed how the management team at the Faculty of Mathematics and Natural Sciences in Oslo University approached the issue of gender equality. Was anything achieved? Has the resistance to gender equality increased or decreased in the organization? Was anything changed in the implementation of other parts of the FRONT project?

Our analysis is based on material from a workshop series for doctoral student supervisors, where the aim was to encourage research management on all levels to engage in gender equality work. The 5-hour workshops were held on twelve occasions for groups of 25–30 participants. Supervision of doctoral students is a common point of reference, and is something that researchers undertake throughout their career. A workshop on gender equality for those supervising doctoral students was therefore considered to be a good starting point in the efforts to change the faculty's culture.

The chapter is structured as follows: We begin with a short summary of research on resistance to gender equality work. Next, we describe how the workshops for doctoral student supervisors were carried out, and how the data we analyze was gathered. The main part of the chapter focuses on describing the change that took place in the groups, using two scenes: one from one of the first and one from one of the last workshops respectively. Finally, we analyze and discuss our results in light of other research.

Gender Equality Work: Resistance and Change

Gender equality work can be described as a complex development process aimed at changing an organization's structure and culture, thereby influencing the scope of action and power relationships of individuals and groups (e.g., Andersson et al., 2012; Cockburn, 1991; Lindholm, 2011; Pincus, 1997; Spets, 2012; Wahl et al., 2001/2018). This process often encounters resistance (Amundsdotter et al., 2015; Lindholm, 2011; Spets, 2012; Wahl et al., 2001/2018). Some of this resistance can resemble the scepticism that may affect social innovation in general, regardless of whether it relates to gender or other issues. Innovation challenges habitual

approaches and expertise, and organizations often suffer from inertia, even when it comes to constructive innovation and reform (Holter, 2007; Puchert et al., 2005). Feminist research, however, shows that gender equality work also encounters other forms of resistance, since the process challenges the organization's existing power structures (Ahmed, 2012), and how individuals perceive themselves and their identity as women or men (Acker, 1994, 1999; Hård, 2004; Jutterdal, 2008). Women's identity construction contains strategies of dealing with belonging to a socially subordinated group (Ethelberg, 1985), whereas men's strategies consequently involve belonging to a superior group. Women often opt to handle subordination using one of four strategies: denial, acceptance, exploitation or change. The first three can thus be seen as expressions of resistance to gender equality work (Wahl, 1992).

Resistance to gender equality is defined as resistance to change towards greater equality and wanting to maintain the status quo, as opposed to, say, resistance to a dominant social order, where resistance strives to effect change (Lombardo & Mergaert, 2013). This resistance can be described as actions to prevent gender equality work (Cockburn, 1991; Pincus, 1997; Spets, 2012; Wahl et al., 2001/2018). Pincus (2002) defines acts of resistance as passive or active, where passive resistance is most common. Passive resistance can be expressed as lack of interest, withholding of resources and "silence", for instance by forgetting gender equality work or silencing gender equality issues.[1] Passive resistance can become active if change intensifies. Active forms of resistance include openly questioning the process or the legitimacy of its representatives.

Lombardo and Mergaert (2013) describe how resistance can be expressed by prioritizing certain tasks within the organization. Gender equality work is highlighted as important, but is put on the back burner for the sake of more important tasks, such as core activities. In Norwegian research, this is described as the duty to yield (Skjeie & Teigen, 2003) – meaning when different perspectives or priorities are compared, gender equality is sacrificed (Skjeie in Haugsvær, 2003; see also NOU, 2011:13, 2012:15).

Different ideas on what gender equality work should achieve, and how it should be carried out in an organization, can be seen as another form

of resistance (Bacchi & Eveline, 2010; Magnusson et al., 2008). An ambition to achieve gender equality is expressed without initiating a concerted and focused project, which leads to nothing being accomplished within the organization (Lombardo et al., 2009). Change can only be achieved if there is an understanding of where and how gender inequality arises in the organization, and what the problem is (Rönnblom, 2011; Tollin, 2011). Different, and sometimes unclear, perceptions of why gender equality work is needed may result in the focus of the project being deflected from the desired change to the methods and tools to be used (Amundsdotter et al., 2015). This focus on methods and tools can be interpreted as yet another expression of resistance (Fraser, 2011).

Lack of knowledge is often considered an obstacle to gender equality, and projects therefore frequently include training aimed at enhancing awareness of inequality within the organization (e.g., Ahmed, 2017; Amundsdotter et al., 2015; Höök, 2001). Studies show, however, that increased awareness does not automatically lead to increased gender equality (Nilsson & Trollvik, 2011). On the contrary, awareness can lead to more qualified resistance to the organization's gender equality work (SOU, 2003:16). Rönnblom (2011) furthermore claims that a focus on raising awareness of gender inequality can be seen as a resistance strategy in itself, since the lack of awareness, rather than gender inequality per se, is identified as the problem that needs solving.

Amundsdotter et al. (2015) describe resistance to gender equality as a counter-influence to the influence exerted by the gender equality work, defining three forms of power techniques, or relationships between power and resistance: repressive, pastoral and regulating (see also Linghag et al., 2016). Repressive forms are distinct and direct. They consist, for instance, in openly questioning the gender equality process, or ridiculing or belittling the person in charge of the gender equality work. Pastoral resistance is more subtle. The gender equality worker is expected to understand that the organization knows that gender equality is important, but that other priorities must be made at present. Regulating resistance entails, for instance, claiming that the mandate to implement the gender equality initiative lies elsewhere, beyond the individual, group or organization where it is currently taking place.

Different types of transformation processes provoke different types of resistance. In other words, resistance adapts to the process of change (Benschop & Verloo, 2006; Kirton & Greene, 2000,2016; Lombardo & Mergaert, 2013; Pincus, 2002). But the transformation process is also influenced by the resistance. In a study of how gender equality workers respond to resistance, the gender equality workers discovered that they themselves were influenced by the resistance they encountered. Repressive resistance, for instance, was often met with repressive strategies (Amundsdotter et al., 2015).

As described earlier, gender equality work often meets with resistance. Although management commitment is pointed out as being crucial for gender equality work to be successful (e.g., Acker, 2000; Franzén et al., 2010; Lombardo & Mergaert, 2013; NOU, 2012:15; Pincus, 1997; SOU, 2003:16; Åberg, 2012), few studies have been dedicated to finding out if – and how – the efforts of management teams affect resistance in the organization. The question we will examine and discuss in this chapter is whether the gender equality work of the faculty's management team has had any effect within the organization. We have chosen to do this by analyzing how resistance within groups participating in another part of the FRONT project, a workshop for doctoral student supervisors, changed.

Workshops, Empirical Data and Method

The purpose of the workshops was both to increase the participants' awareness of gender inequality in the organization, and to provide an opportunity for them to share their experiences and thoughts. Reflecting on one's own experiences and those of others, in combination with research-based knowledge, is one way of developing an understanding of how gender is done,[2] in one's own organization and in academia in general. The workshops alternated between group discussions and short lectures in the research field of gender and organization. The purpose of the group discussions was to offer participants opportunities to scrutinize their own experiences as supervisors, relating to research on gender equality in academia.

Each workshop had 25 to 30 participants, divided into groups of five. The smaller groups mixed participants from different departments, to elevate the discussion from a specific research team to the faculty level. All supervising doctoral students were invited to the 12 workshops.

Workshop activities were inspired by the action research methodology described in detail in the introduction to Part 3 of this book. They were planned and carried out by the FRONT research team. One of the researchers participated in all workshops, while others participated in parts of the series. The researcher who participated in all the workshops has been employed by the same organization as the participants, but in a different capacity, and can thus be described as an *outsider within* (Herr & Andersson, 2005). Other researchers in the group can be described either as *insiders*, that is employed by the same organization and in the same capacity as the participants; or as *outsiders*, if they were only partially involved in the series and were not employed by the organization (Herr & Andersson, 2005).[3] The qualitative material was gathered through participant observation and is documented in the form of a field diary. In the workshops, researchers took notes by hand. These notes were reviewed directly after each workshop and entered into the field diary.

Analysis began with repeated examination of the material, to identify recurring themes in terms of similarities and differences. This inductive approach to the material had the informants' own descriptions and terms as the starting point. In the next phase, the material was compiled into two scenes. The first is based on one of the earliest workshops, and the second is from one of the workshops that took place after 18 months. The scenes are written according to a method used in action research. It is based on analyses and discussions in the research team rather than exclusively representing the individual researcher, but the subjectivity is intentional and is comparable to field notes, a practice report, or a page from a diary, in which the researcher's encounter with the field is essential. The method includes a phenomenological analysis and is not an attempt to "objectively" describe what takes place overall. The descriptions are limited to certain specific cases, as they were actually perceived, without any form of analysis or filter. The scenes thus illustrate different aspects of the

organizational change. The workshop participants are diverse and react differently. Some are sceptical to the FRONT project, while others are more positive. Looking at this from an action and innovation perspective, the first scene is “before” and the second “after” the management team’s somewhat new way of acting after the management development described in Chapter 10.

In the analysis, we will focus on whether the gender equality work within the faculty’s management team has had any effect within the organization. We do this by analyzing whether resistance against gender equality has increased or decreased during the workshops for doctoral student supervisors.

Two Workshops

So, what does resistance to gender equality work in the organization look like? We describe it through two workshops for PhD supervisors, one early and the other late in the project.

Scene One: A Failed Workshop?

It is 11:00 a.m. and time to start the workshop. There should be 24 men and six women in the room, but several places around the six tables are still empty. I am annoyed. It is impossible to divide participants into groups with so many absent. For instance, the women were supposed to be in twos in the groups, but I now see that two of them are alone at their tables. Also, one table has only three people, and another only two. So, they have to be moved in order to make the discussion groups large enough. Why did so many people enrol and then just not turn up?

The workshop starts with asking the participants to evaluate statements about women and men doctoral students, individually, before discussing them with their group. The group discussions are subdued and lethargic, except at one table, where one of the men draws a Gaussian curve, while explaining with gusto that average intelligence is the same in male and female groups. However, there are more men than women at

either end of the Gaussian curve – those with really high and low intelligence. Since universities want to recruit the most intelligent candidates, and men are more highly represented in that category, this gives rise to a natural gender imbalance. I consider interrupting the discussion. What does he actually mean? He is implying that the women in his group are less intelligent than he and the other men are. Moreover, he dismisses the entire purpose of the workshop by claiming that gender imbalance is not due to inequality. But I choose to stay out of the discussion, and make a note to myself to address the subject when all the participants gather for a plenary discussion. However, to summarize this plenary discussion, only a few participants can see any major gender differences in how doctoral students are evaluated and treated. One group says that female doctoral students are perhaps a bit more focused on taking responsibility for social relations in the research team than their male colleagues. Neither the man who drew the Gaussian curve nor any other participants in his group mention differences in intelligence as a possible cause of gender imbalance.

A few minutes into my lecture on research on gender in academic organizations, a man raises his hand and asks if all the studies I will cite were carried out in the USA. When I reply that many of the studies are based on empirical data from the USA, but that I will also include studies from Norway and Sweden, he says that studies from the USA cannot tell us anything about what it is like at a university in such a gender equal country as Norway. The man sitting beside him agrees, and points out that the studies are also old. He has noticed years such as 2009 and 2012 in the references. After proceeding with my lecture, I get another question about the quality of the studies I cite. A male participant asks if there are any quantitative studies within gender research? Most of my references are interview studies, and interviews only show what individuals think about things, he adds. When I explain my views on qualitative research, and try to get the group to discuss a few of the results I have described by asking if this feels familiar to any of the participants, a compact silence fills the room. Finally, a male participant breaks the silence by asking if there is no recent material from Oslo University. In that case, it might be interesting to discuss it.

The lecture is followed by a coffee break. At the sink in the ladies' restroom, I am approached by a woman participant. I was looking for you, she says. I just want you to know that it is not as gender equal in our department as it may seem when we talk. I recognize practically everything you described in your lecture. When I ask her why she did not say anything about that in her group, she is quiet. Then she says that she could not face the discussion this would provoke.

I have prepared a case study for the participants to discuss in groups after coffee. They can choose from four cases and talk about as many of them as they have time for, and in any order. The case studies are:

A. A supervisor who is planning to attend a conference with a doctoral student of the opposite sex. When colleagues find out, they ask if the relationship is purely professional.
B. Choosing between a woman and a man for a doctoral student position, with suggestions that the woman is likely to become pregnant, in a project that is already running late.
C. An assistant supervisor finds out from the woman doctoral student that the main supervisor (in charge of the research project where the assistant supervisor is working) makes negative remarks about women researchers.
D. What consideration a supervisor should give to a doctoral student's personal situation when distributing tasks.

I go round the tables and listen, answer questions and occasionally comment. At one table, one of the men asks a woman participant in his group for her opinion. Has she ever seen or experienced any gender inequality at Oslo University? She answers evasively that she does not feel discriminated against, but has heard from colleagues at foreign universities that it is hard combining family life with a research career. Everyone at the table nods and says that this is probably the case. They agree that a research career and family life are hard to combine for both women and men, even in equal opportunity Norway. But in view of the competition for international jobs, publication and research funding, that cannot be changed. At another table, one of the men asks if the others agree that there are

definite differences between how female and male managers work. In his experience, women managers are less strategic than men, and often get stuck on details. Before the other group members have time to respond, he adds that this is his personal experience, and may come down to the specific female and male managers as individuals. No discussion ensues in the group. Someone comments that it sounds familiar to him, but that his experience is also just personal, and the others remain silent.

When we gather to discuss the case studies, it turns out no groups chose case A. When I ask why, they answer that the situation is too far-fetched. That sort of thing would never happen at Oslo University. Case B is also dismissed, with the comment that if a project has no room for a doctoral student to take parental leave for a year, then the planning is wrong. As for case C, the groups that chose it describe the formal channels available for a doctoral student to lodge a complaint and possibly change supervisor. This is not a matter for the assistant supervisor, and thus this is another wrongly-constructed case study. Most groups chose case D. They agree unanimously that a supervisor should not meddle in the doctoral students' private life. All doctoral students should have equal opportunities, such as being invited to participate in conferences, and deciding for themselves whether or not they can attend.

The workshop concludes with one of the deans explaining why the faculty wants to address gender equality. Participants have no questions and the workshop ends. As I go round the room tidying up papers and coffee cups, the woman, who was asked in her group whether there was any gender inequality in her faculty, comes up to me and says she has something to tell me. Her research team was recruiting a doctoral student and there were many qualified applicants. A few days ago, when they were interviewing, she noticed that women and men were judged according to different standards. That study you described in your lecture, that is just what it is like here too, she says. We referred to the men as competent, and the women as ambitious and hard-working, and even if the comment was immediately followed by an apology, it was also mentioned that it was very likely that the women would take parental leave for a year or so. When I ask why she did not speak up at the workshop, she replies that when she had mentioned it in the recruitment committee, everyone

had just brushed it off and said it was not true. Now she was reluctant to revisit that discussion.

A few days after the workshop, I receive an e-mail from a woman participant, requesting a meeting. When we meet, she says the workshop was unsettling. She felt that as a woman she was expected to be able to describe in which ways the faculty was gender unequal and what should be done to make it more equal. That her role in the group was to prove to the men that gender inequality existed.

Scene Two: Will the Discussion Never End?

The workshop is about to begin, and I am nervous. Nearly 18 months have passed since the last time, and so much has happened in the project. My introduction will be entirely different, and I wonder how the participants will react to it. Will they all get up and leave when I tell them that the management team claims that gender imbalance in the faculty is at least partly due to gender inequality? After all, I do not have any results yet from studies carried out in the faculty.

I welcome everyone and talk about the gender equality project that this workshop is part of. I also say that this is the first workshop after an interval of more than a year. I then go on to explain that the faculty's management team, during five workshops days, have been working on gender equality in the same way that they will be working today. The management team, like them, were aware of a gender imbalance in the faculty. Some departments, for instance, have few women professors, even though most of the students have been women for a long time, while others have research teams that are predominantly female or male. Based on research on academia from the perspective of gender equality, the management team came to the conclusion that this imbalance was at least partially caused by gender inequality in the organization. They decided to proceed according to the research perspective of "doing gender" and a method based on Joan Acker's research,[4] to examine where and how inequality is done at the faculty. The results from these studies are not available yet, but will be reported as soon as possible. When I finish off by asking if anyone has any questions or comments regarding what I just

said, everyone is quiet. But most participants look interested, and no one seems to want to leave.

The workshop continues along the same lines as before. Participants are asked to comment on and discuss a number of statements about doctoral students, they listen to lectures on gender equality in academic organizations, and they discuss case studies. No matter what part of the programme it is, discussions become lively as soon as participants are divided into smaller groups. Not everyone takes part, but more than half of the participants at each table seem to get very involved. As I move around the room, I hear them sharing personal experiences with each other. For instance, one says that he feels it is much easier to talk about things while going for a walk. The discussion is much more focused than at a meeting in the office. But he does not know how to do this with his women doctoral students. Can he go for a walk with them outside the university campus? Another says that he wants to go away for a weekend to write with his doctoral students. But he feels that would be difficult in a mixed-gender group. A third asks the others for advice, explaining that he had had knee surgery and could not get to work and had invited a woman doctoral student to his place so they could work together. He goes on to say that even though they sat in his study all the time, and did not talk about anything personal or private, he would nevertheless not have dared do that if his wife had not been home the whole time.

The discussion moves back and forth. Some say that all supervision should take place at the university. Neither female nor male doctoral students should be exposed to situations that could be perceived as informal, and consequently uncomfortable. Others say that even if you skip writing weekends and walks, academic life unavoidably includes informal situations. Not inviting your doctoral students along to the pub after a conference dinner would be the same as not sharing your network with them. One supervisor says he never thinks about gender. He has never experienced any awkwardness with regard to inviting both female and male doctoral students to his informal networks. Another describes how he tells his women doctoral students that it is okay if they do not want to join him for dinner after the conference.

He wants them to know that they do not have to be good company over dinner in order to get good supervision or a great start to their academic career.

The women participants are in the minority, as usual. They do not participate as actively as some of the men in the discussion, and they often describe a more formal approach to supervision. They might possibly have coffee in the university cafeteria with a doctoral student. But this would be an exception, since 99 per cent of supervision takes place in the office. Someone adds that drinking beer at conferences as a way of building networks is overrated. The important thing is to make contact during the sessions themselves, when research is actually being discussed. Another describes her experiences as a doctoral student, how she, as the only woman in a group of men, often felt uncomfortable in informal situations.

When it is time for a coffee break, I am happy and relieved. This workshop is going so much better than the ones a year and a half earlier. I am alone in the classroom, making a few adjustments to the course material, when one of the women participants enters and approaches me. She says she wants my advice. She was recently appointed head of division, and discovered that teaching duties are unevenly distributed. A few of the older male professors teach hardly any classes, even though this is included in their job description. When she mentioned this at a group meeting and presented a fairer proposal, the men who would have had to teach more protested. Especially one, who was very rude to me, she says. But nobody spoke up against him. They let him battle it out with me. I know exactly what you should do, I tell her. I was planning to let you all work on case studies after the break. But forget about the case studies in your group and discuss this instead! You will get lots of useful tips from the others in your group. No, I cannot do that, she says. That is too personal. When the other participants return to the room, she takes her seat.

After a lively discussion about the case studies, it is time for the dean to round off. The participants continue to be talkative. For instance, someone asks a question about how to give career advice to doctoral students and receives a concrete answer.

From Resistance to Communication

We have chosen to interpret the above scenes as development phases – before and after an intervention. This is a useful starting point, we feel, but are aware that a process of change naturally has both intermediary phases and different trajectories for groups and individuals. In effect, one and the same scene includes various understandings and behaviours in relation to gender, represented by different participants. We can discern clear tendencies in the scenes – while the material also contains wide variations.

Expressions of Resistance

The first of the two scenes above is characterized by various forms of passive and active resistance (Pincus, 2002). The importance of gender equality work is not openly challenged. Most of the resistance is passive and is expressed mainly by remaining silent and not participating in workshop discussions. Enrolling for the workshop but not turning up could be interpreted as another form of passive resistance. There were also several forms of active or repressive resistance (Amundsdotter et al., 2015; Pincus, 2002). These were revealed primarily through explicit scepticism to the workshop contents and its leader. Resistance is frequently presented as if it were a case of purely objective or subject-related protests. The nature of these protests is often twofold: that gender equality is important but the workshop is not good enough; that the lecture theme is interesting but the lecturer lacks knowledge; or that it is interesting to discuss supervision from a gender perspective but the case studies are irrelevant. At the core is a mixed message, in which counter-arguments are converted into factual issues rather than presented straightforwardly. Gender equality is described as being important, but it is inferred that the workshop leader has not prepared properly. The research is considered too American, too old or based on the wrong methods. It is relevant to question whether the results of empirical studies in other academic environments can be used to understand the situation at one's own faculty. But when those who raise the question are unwilling to discuss the studies, they are,

in effect, questioning the lecture itself. Resistance is presented in the guise of a factual discussion.

These mixed messages can also be seen to indicate that resistance adapts to the process of change (Benschop & Verloo, 2006; Kirton & Greene, 2000, 2016; Lombardo & Mergaert, 2013; Pincus, 2002). It is clear that the participants are aware that it is wrong to be opposed to gender equality, and this influences how they formulate their counter-arguments. They do not, for instance, question the purpose of the workshop, only its execution. Resistance is not aimed at the faculty management and its decision to improve gender equality in the faculty. Instead, it targets a lower level in the organization, the gender equality project and its activities.

The discussion about how it is hard to combine a career in academia with family responsibilities reveals yet another form of resistance, what Amundsdotter et al. (2015) call regulating. Workshop participants claim they cannot do anything about the inequality that may arise because women take more responsibility for their families than men. This is a private choice that is made in the family, and the employer or supervisor neither should nor could get involved. Moreover, the overall issue, that an academic career is hard to consolidate with family responsibilities, is beyond their control. The university operates in international competition. The prerequisites for an academic career are determined internationally and consist of "objectively" founded stipulations that the faculty has to comply with and cannot influence. The concept of a systemic problem within one's own organization is redirected towards a discussion of other issues and other systems.

If we interpret scene one in relation to hegemonic masculinity (see Connell, 1995; Connell & Messersmith, 2005; Messersmith, 2015), a new hegemony clearly emerges. Some of the male participants openly defend the existing gender order, by devaluating both the workshop and the workshop leader. Their attempt to gain support from the other men is successful, in that none of them object.

Moreover, dismissing three out of the four case studies as unrealistic can also be seen as a form of resistance. Change requires a shared understanding of where and how gender inequality is created in the organization (Rönnblom, 2011; Tollin, 2011). The non-existent discussion of the

case studies showed that this shared understanding was prevented from developing. In the workshop described in scene two, the male supervisors said that they found it more problematic to supervise their female doctoral students. In the first workshop, the participants emphatically denied that this was a problem. Likewise, the participants in the first workshop avoided discussing problems relating to the doctoral students taking parental leave, or that their colleagues had made sexist statements. As all subjects were discussed energetically in the workshop in scene two, this dismissal can be interpreted more as resistance to the workshop and the gender equality work it is part of, than as a conviction that the problems did not exist.

Constructing Identity

Whereas the workshop in scene one is characterized by various forms of resistance, the resistance described in scene two is less pronounced. Both women and men participate in the often lively discussions and contribute many personal examples. Gender inequality is no longer seen as something that exists elsewhere or only concerns women. The issue has been moved to one's own organization, and is about relationships between women and men.

However, although major changes occurred from scene one to scene two, there are still differences in how the women and men participate. Whereas the men dare to share their personal experiences, the women more often choose to remain silent. A few of the men are very open and share deeply personal experiences, while most are active in the discussions but slightly more restrained with their own experiences. None of the women participate as actively in the discussions, and all are more hesitant in describing personal experiences. When the workshop leader asks a woman participant to tell the group about her leadership dilemma, the woman responds that it is too personal. The women also describe a more formal approach to doctoral students and supervision, compared to the men.

As individuals in an organization, we deal with sensemaking,[5] that is, understanding what is expected of us and what scope of action we have

(Weick, 1995; Weick et al., 2005). Critical sensemaking theory emphasizes the importance of acknowledging how surrounding structures influence the construction of identity that sensemaking entails (Mills et al., 2010). Individuals in an organization are expected to act in various ways, and this consequently limits the individual's prospects for identity construction, and also means that certain identity constructs are rewarded, while others are ignored or counteracted (Acker, 1999; Mills et al., 2010).

Gender equality work affects how individuals perceive themselves and their identity as women or men, by highlighting and examining how identity construction is done and influenced by surrounding structures (Acker, 1999; Hård, 2004; Jutterdal, 2008).

We have chosen to base the workshops and seminars in the FRONT project on a revised version of Acker's model[6] (1999), with four approaches to exploring how inequality is done in an organization: structure, culture, interaction and identity work. This means that part of the task has been to examine how the identity construct of *researcher* is affected by structures, culture and interaction. In effect, the participating researchers are expected to examine how the perception of them as women or men has impacted and continues to impact their place and latitude in the organization.

At the workshop described in scene one, it is obvious that several of the women participants are reluctant to discuss gender inequality, even though they see that the organization is unequal. Some, for instance, seek out the workshop leader during the break or after the workshop has ended, instead of sharing their experiences with the group. The women are quieter than the men even in the workshop in scene two, when it comes to talking about personal experiences, and again they contact the workshop leader during a break. The women's reluctance to describe their experiences of gender inequality can be interpreted as a fear of exploring the identity construct of a female researcher. They want to be seen as competent researchers. To describe their experience of gender inequality means defining themselves as women, and thus as members of a subordinate group, which is associated with feelings of shame (e.g., Ethelberg, 1985; Wahl, 1992). If the women do not perceive woman *and* competent researcher as a possible identity construct,

this makes it hard for them to share their experiences of gender inequality.

Part of men's identity construction consists in belonging to a superior group. In the second workshop, they describe, for instance, an imbalance of power in relation to their female doctoral students. A factor that is not mentioned, however, is that their superior position may have had positive effects for them as individuals, for instance by benefitting their career. A critical scrutiny of the identity construct of man *and* researcher would entail questioning their own competence.

Thus, sharing and reflecting on one's own experiences within a gender-unequal organization can be unfavourable to one's own identity construct. For women, seeing themselves as a subordinate group also means seeing themselves as part of a group that is not expected to achieve as well as the superior group, and therefore does not get equal career opportunities in the day-to-day activities of the organization. Conversely, for men, this entails seeing themselves as members of a superior group, who get more and better career opportunities than they deserve, since competence is regarded as an effect of their superiority. For both women and men, an identity construct that acknowledges gender inequality in the organizational structure is also an identity construct that is hard to consolidate with competence.

Management's Role in Gender Equality Work: Responsibility for Describing the Problem

There were major differences in participation and discussions in the workshops from scene one to scene two. The forms of resistance had weakened and changed, and the active resistance that was obvious in scene one was totally gone in scene two. More women shared their experiences of gender inequality, even though they were less forthcoming than the men.

The purpose of the workshops for doctoral student supervisors was to increase participants' awareness of gender inequality in the organization. In addition to lectures, the workshops included exercises that provided a framework for participants' discussions. The lectures offered a theoretical framework for how gender is done in organizations, which

participants were expected to utilize in the exercises to analyze and systematize their own experiences and observations, and thereby become more aware. The examples from empirical studies presented in the lectures were also intended to be useful to the participants when they examined their own organization. New knowledge and awareness, and above all hearing the examples and reflections of others, were expected to alert participants to elements of their everyday life that may otherwise have gone unnoticed. While a personal episode is often regarded as an exception, hearing that several others have had the same experience helps us see a pattern. Sharing experiences in a structured way in the workshop exercises should improve the participants' awareness of gender inequality in the organization.[7]

Why, then, is resistance so much stronger in the workshop in scene one than in scene two? The workshops had the same structure, mixing lectures and exercises. What had changed in the eighteen months that had passed? We will start by examining the underlying reasons for resistance in scene one.

The workshops provided exercises and models, but participants were expected to fill them with descriptions from their own lives. These could be everyday situations where they had been unfairly treated or judged, and where they, in turn had treated and judged others' gender unequally. To be in a position to share their experiences, gender inequality and the participants' various positions in relation to it, their identity constructions, needed to be made visible. This requires women to identify with a subordinate group, and men to identify with a superior group. Even if women and men as individuals relate to, and are influenced by, structures of gender inequality in different ways, sharing their experiences of inequality divides them into two groups, subordinate women and superior men.

According to critical power theory, a subordinate group is in a better position than the superior group to see both the mechanisms of subordination and the superior group's privileges.[9] Thus, the women participants in the workshop exercises should generally be in a better position than the men to give examples and clarifications of the effects of gender inequality. However, although the women participants could be more aware of

gender inequalities than men, they are expected to say the opposite. The only explanation that does not challenge the existing power structures or identity constructions is that the organization is gender equal (Ahmed, 2012; Hård, 2004; Jutterdal, 2008). This, therefore, is the only version that is comfortable for the organization and its members (Wahl, 1992). As members of the subordinate group, women can free the organization from demands for change by affirming that gender equality has already been achieved (Wahl, 1992).

The discussions in the first workshop scene can be interpreted as resistance to being divided into a superior and subordinate group respectively, and to change in general. When one woman is asked about her experiences of gender inequality, she answers that she has no such experiences, that is, that no change is necessary.

In the 18 months that passed between scenes one and two, the management team had worked with sensegiving[10] (see Gioia & Chittipeddi, 1991) in relation to gender equality, by describing the organization as gender unequal and defining this inequality as a problem. The faculty is characterized by gender imbalance, and management has intervened to ensure that this is acknowledged as a gender equality issue. In other words, management has *challenged* the prevailing order, and *balanced* the staff's contributions, so that those who experience the problem of gender inequality are no longer the ones who have to point it out.

When management acknowledges the lack of gender equality as a serious problem, it is no longer up to the individual to decide whether the organization is gender equal or not, or whether or not this is a problem. Since defining the organization as unequal, and stating that something needs to change, is to challenge the prevailing order, both in terms of the existing power structures and identity constructions, those who continue to argue that nothing needs to change often win. This reveals the organization's inertia (see, for instance, Lombardo & Mergaert, 2013; Pincus, 2002; Holter et al., 2005). When management argues for change, this alters the power balance in the discussion in favour of those who, like management, perceive the gender inequality and want to change it.

As described above, the workshop in scene two begins with a summary of management's views on, and measures to promote, gender

equality. When management decisively takes responsibility for describing the organization as gender unequal – and pro-change – this should impact the framework for discussions in the participant groups. For instance, it reduces the pressure on women participants to free the organization from the need to change, under the pretext that equality has already been achieved. Likewise, the burden of proof is transferred from those who claim that the organization is gender unequal, to those who deny gender inequality. We do not interpret the change that took place between scenes one and two as exclusively, or maybe not even predominantly, the effect of the gender equality work pursued in the organization by the faculty management. The two occasions had different participants, and one or more strong personalities can set the tone for an entire group discussion.[11] In the 18 months between the workshops, social debate also changed, and this may have contributed to the group atmosphere. Other possible causes could be that the workshop leaders had also developed, and thereby contributed to the change in the discussions. However, our empirical studies show that management's involvement may have led to the participants becoming freer in their interpretation of events and situations, and thereby seeing things in new ways. The new group atmosphere could be linked to the management describing gender inequality as a systemic problem, *challenging* the notion that the numerical gender imbalance in certain positions is not a problem or simply the effect of women and men making different choices and priorities with regard to family and career.

Management has not only addressed sensegiving by clearly stating that gender inequality is a problem. They have also utilized tools for analyzing the organization. As described in the introduction to chapter three, a processual approach to gender, meaning seeing gender as an integral part of everything that goes on in an organization (e.g., Acker, 1990; Butler, 2006, 1990; West & Zimmerman, 1987), underpinned the project. This approach is often referred to as "doing gender". An elaborated version of Acker's model (Acker, 1990, 1994) was applied to all project activities. The model helped participants to systematize their observations, which, in turn, enabled them to discover patterns and structures in everyday operations within the organization. The chosen pedagogical method of letting

participants make their own discoveries, combined with listening to and reflecting on the discoveries, observations or research made by others, and together analyzing and highlighting patterns from different angles, can also be seen as a model.

The fact that management not only described inequality as a problem, but actively addressed the problem utilizing methods of working with change, is also likely to have influenced the atmosphere in the group. Management was able to show where and how inequality is done – not in every separate case, or in every research team, but through examples from their own organization. Since management's approach is based on a processual perspective on gender, and Acker's model for examining where and how gender inequality is done in the organization, both the approach and method are legitimized by the organization. The problem – gender inequality – is not dumped on the workshop participants with instructions to do something about it. Instead, they are provided with an approach in the form of a processual perspective on gender and tools to achieve change, in the form of Acker's model.

Conclusion

The FRONT project included workshops for doctoral student supervisors. Participants displayed strong resistance during the first workshops. In subsequent workshops, group discussions showed that a change had taken place. The forms of resistance had abated, and both women and men participated in the often lively discussions and contributed many personal examples. For both women and men, sharing and reflecting on experiences of gender inequality entails positioning themselves according to gender: as subordinate women and superior men. This is an identity construction that both men and women find hard to reconcile with their self-image as competent researchers, and it therefore awakens strong resistance. Moreover, gender equality work also challenges the organization's power structures, and generates resistance. If management changes the framework for sharing experiences by establishing that the organization is gender unequal, and provides an approach and tools for examining how gender inequality is done, resistance weakens.

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Notes

1 Passive resistance, often in the form of avoidance and ambivalence among the participants in the organization, is discussed further in Chapters 7, 8 and 9 of this book.

2 See the introduction to Part 3 for a definition of "doing gender".

3 See the introduction to Part 3 for a more extensive discussion and definition of the various roles of the researcher.

4 A description of the doing gender perspective and Joan Acker's model is found in the introduction to Part 3 of this book.
5 For a more detailed description of the term "sensemaking", see Chapter 10.
6 The model is described more extensively in the introduction to Part 3 of this book.
7 The perspective on knowledge and how knowledge is developed is the same as for the work with the management team described in Chapter 10. The premises for the workshop are different, however. The participants were not acquainted beforehand, which leads to lack of trust in in the group, and the format is limited to a half-day instead of five full days.
8 Critical theory on power is discussed more extensively in Chapter 8.
9 For a more extensive description of the term "sensegiving", see Chapter 10.
10 See, for instance, research on decision-making and setting the agenda.

CHAPTER 12

From Exception to Norm: The Development of Resilience in a Network

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Abstract: Combining gender theory with research on resilience, this chapter analyzes the effects of an action research project aimed at increasing the number of women in senior research positions at the Faculty of Mathematics and Natural Sciences at Oslo University. As a part of the project, the faculty management nominated fifteen women professors and associate professors to attend a programme to improve their skills in writing articles and research applications. Individual interviews with all participants prior to the programme revealed that they would prefer to build a network where they could share experiences and discuss various topics. The two-year programme was therefore structured as a forum where we as action researchers offered theoretical input on topics chosen by the participants and worked with dialogue tools, focusing on these topics, in a structured and time-efficient exchange of experiences. The analysis shows that resilience is an essential skill in organizations characterized by critical scrutiny and competition. In the chapter, we describe how the network participants become more resilient by reflecting themselves in, and sharing experiences with, each other. Being in a context with other recognized top researchers without being the odd one out – the woman who has to prove herself – improves the ability to cope with adversity.

Keywords: gender equality, resilience, network, academia, female managers

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Introduction

Being a researcher means constant exposure to critical scrutiny in an organization characterized by tough competition for jobs, research funding, and publishing. In the first part of this book, summarized by the Bøygen model in chapter seven, we show that women in academic organizations experience more obstacles and problems than men throughout their careers. On the whole, academia is characterized by critical logic, in which researchers – especially women researchers – need to cope with setbacks and stress. Against this background, the FRONT project decided to design a measure for women senior researchers. The purpose of this sub-project was to attain the goal of more women in leading research positions, among others in management positions in the Faculty of Mathematics and Natural Sciences in the University of Oslo, but especially as leaders of larger research groups.

In this chapter, we take a closer look at the measure for women senior researchers. We describe the design of the measure and examine how it was perceived by the participants.

The subsequent part of this chapter is structured as follows. It begins with a short summary of the background for the measure, followed by a detailed description of its structure. Then we move on to data gathering and methodology of the study, as well as its theoretical foundation. We then describe the results and analyze developments within the participant group in light of other research.

Background: Career, Networks and Resilience

Networks and collaboration are essential to both career development and research productivity (Pourciau, 2006; Van Balen et al., 2012; Zeng et al., 2016). Researchers find that supportive relationships, such as mentoring programmes, contribute directly to scholarly success (e.g., Van Balen et al., 2012). Moreover, researchers found that women receive less academic support and mentoring than men, and that women have fewer supportive relationships (Fuchs et al., 2001). Minor differences between

women and men, in terms of access and opportunities for building networks in the early stages of their academic career, the so-called rush hour, accrue over time and can eventually become substantial. This, in turn, can affect opportunities for research collaborations, funding and publishing (Fuchs et al., 2001; Hunter & Leahey, 2010; Husu, 2001; Wennerås & Wold, 2000).

Competition for positions, research funding and publication is fierce within academic organizations. As a researcher, you are constantly exposed to critical scrutiny. Peer review requires that applications for jobs or funding and articles submitted for publication or conference participation are examined for flaws and weaknesses by colleagues. A very large number of submitted applications and articles will never be approved or published. Altogether, this means that academia is characterized by a critical logic, where researchers need to cope with adversity (e.g., Sewerin & Jonnergård, 2014).

Recent Nordic studies show that tough competition in an organization can reveal and reinforce masculine hegemonic tendencies (Dockweiler et al., 2018; Snickare & Holter, 2018). In Chapter 5, we illustrate how women experience more obstacles and resistance in their academic careers than men, and that this is not specific to the faculty we studied, but has also been demonstrated in international research. Altogether, this would indicate that women researchers are in greater need than men of coping skills for handling adversity and rejection.

Resilience is the process of adapting in the face of adversity and stress. It involves maintaining flexibility and balance in life, as we deal with stressful circumstances and feel questioned by ourselves or other people. Many studies show that decisive factors for resilience are social support and interpersonal relationships (e.g., Jackson et al., 2007; Kossek & Perrigino, 2016; Powley, 2009).

In this study, we use action research to explore the relationship between the lack of support systems for women researchers and their academic success. By combining gender theory with research on resilience, we analyze how resilience can be created on the individual level in an academic organization.

Network, Empirical Data and Method

As a part of the FRONT project, department heads at the Faculty of Mathematics and Natural Sciences in Oslo University nominated eighteen female professors and associate professors to take part in a programme for female researchers. The nominees must have the ability to lead major research projects, to be top researchers. The FRONT research team began by conducting individual interviews with all nominees. The interviews revealed that the nominees explicitly wanted access to a qualified network where they could share experiences with other women researchers.

A general challenge for all programmes, training schemes and measures is how to apply skills and learning to the participants' everyday life and reality. In a comprehensive meta-analysis focusing on identifying the most effective kind of leadership training, Lacrenza et al. (2017) found that the most effective programmes: were structured according to the target group's self-defined needs; offered training sessions; gave continuous feedback; and used a variety of methods. The best results were achieved when there was a clear link between theoretical input and experience-based training related to the everyday challenges that participants face. The transfer from the learning situation to reality is achieved by practising new skills to get feedback in and from the everyday context (Lacrenza et al., 2017). Another meta-analysis focusing on team-based training and effectiveness showed that theoretical knowledge can produce background understanding that increases interest and relevance. But hands-on practice is needed to integrate new knowledge and result in changed behaviour over time (McEwan et al., 2017).

Based on this want of a network for sharing experiences, and on the research described above, the 2-year programme was designed as a forum where we, as action researchers, offered theoretical input on themes chosen by the participants. The themes suggested by the participants were essential to understanding and managing day-to-day activities in the participants' various tasks and roles. With these themes as our point of departure, dialogue tools were applied to enable structured and time-efficient exchanges of experience. To create a safe space for sharing

experiences, the process-oriented workshops were designed with a familiar structure, described below:

Check-in: Participants were paired up and had a few minutes to discuss three questions relating to their expectations for today's theme, and how they wanted to contribute. The goal was to give the participants an opportunity to connect with each other and the theme, and to clearly shift from "outside" to "inside".

Theoretical introduction: Research-based lectures on a theme chosen by the participants including: self-compassion, time management, goal formulation, effective teams, and academic leadership. The purpose of these lectures was to give participants a theoretical basis for understanding the challenges they face daily.

Trio-coaching: A model for peer guidance with the roles: focus person, coach, and observer. In the first conversation, the focus person describes a concrete challenge related to the workshop theme to the coach. The coach listens and asks follow-up questions, and the observer remains silent. In the next conversation the coach addresses the observer, and together they reflect on the focus person's story, linking it to their own experiences and thoughts. During this conversation, the focus person remains silent. In the third and final conversation, the coach again talks to the focus person, and the observer listens. In this conversation, the focus person has the opportunity to reflect on what the others have said about their own experiences, and the coach can ask Socratic questions and give advice if requested. Then, the participants change roles and a new sequence begins. The purpose of trio-coaching is to provide a clear format that enables active listening and dialogue, where the focus person can practise looking at a concrete challenge or problem from several perspectives.

Collective reflections on the day's theme and exercises: In this session, the group had the opportunity to hear everyone's experiences and thoughts, contributing to increased systemic understanding and further learning.

Check-out: Each participant has the opportunity to briefly reflect on their current situation in relation to the day's theme and activities (this can be through a word, a feeling or a thought).

The two researchers who followed the project have had somewhat different roles. One has been engaged full-time in the FRONT project,

meeting with participants in other FRONT activities. This researcher also conducted the individual interviews and organized programme activities. The other researcher was involved exclusively in carrying out the programme workshops. In terms borrowed from Herr and Andersson (2005), the researchers can be described as *outsider within* and *outsider*, meaning one person was an employee in the project, and thus in the same organization, but in a different role than the participants, and one was only involved in planning and implementing the workshops.

This chapter is based on individual interviews and a group interview, and the researchers' notes and observations from programme activities. Immediately after each completed workshop day, the researchers examined their own individual notes and wrote a joint field diary. Flipchart sheets and other material produced by the group were also gathered and documented in the field diary.

Analysis began using an inductive approach, where all the material was studied several times, to identify recurring themes, similarities and differences. In effect, the coding was based on the participants' own descriptions. In the subsequent phase, the material was interpreted according to the theory of resilience and self-compassion described in the following section.

Resilience and Self-Compassion

Within organizational research, resilience is defined either as a trait, a capacity, or a dynamic process (Rook et al., 2018). A more general definition emphasizes a resilient individual's ability to handle change in a positive way, and to recover quickly from setbacks and adversity (Tugade et al., 2004). Thus, resilience includes both *adapting* to adversity, and *recovering* from it, thereby effectively getting past adversity. Applying a cross-disciplinary approach, Rook et al. (2018) review various aspects of resilience to understand why certain individuals adapt and recover from adversity more optimally than others. The researchers describe resilience as a dynamic process resting on four pillars that together can give an optimum functional adaptivity. These pillars consist of individual tolerance built on previous experiences, mental coping, physiological recovery

and physical functionality. Rook et al. (2018) claim that all these factors can be influenced and improved so as to increase both individual and organizational resilience.

Thus, resilience is built by interaction between individual traits, acquired abilities and environmental factors. The work environment, for example, is central to most people throughout their working life. Here, resilience is about responding positively to work-related adversity by, for instance, creating beneficial and nurturing professional relationships, responding to feedback as an opportunity to learn rather than as negative criticism, and coping and calming down when encountering setbacks. Tugade and Fredrickson (2004) suggest that everyone has the potential to be resilient, but the level is determined by individual experiences, qualities, the environment and by each person's balance of risk and protective factors. Protective factors help individuals to achieve a positive outcome regardless of the risk (Tugade & Fredrickson, 2004). After reviewing literature on resilience as a strategy for responding to workplace adversity, and identifying strategies to enhance personal resilience in nurses, the researchers conclude that an individual's capacity to develop and improve resilience relies on developing strategies to reduce vulnerability, and strengthening the individual's influence on factors that are obstacles in the workplace (Jackson et al., 2007).

Self-compassion is a concept used in both clinical and non-clinical contexts. From a non-clinical perspective, Neff (2003) describes self-compassion as an approach characterized by being supportive and sympathetic to ourselves when faced with our own imperfections and failings, instead of being judgmental and critical. According to Neff, there are three elements of self-compassion, comprising attitudes, skills and abilities:

1. Self-kindness – being understanding and caring towards ourselves instead of being critical when we fail or experience difficulties.
2. Common humanity – the awareness that all humans suffer, fail and are imperfect.
3. Mindfulness – the ability to observe our own pain without being caught up and swept away by our feelings.

Self-compassion can, in other words, be described as a skill that contributes to the individual's resilience and ability to cope with being criticized and questioned in the working environment. People with a high degree of self-compassion are better equipped to recover after failure and stress. They brood less, are less afraid of failure, have a lower tendency to blame others for their failures and react more appropriately to feedback, than individuals with low self-compassion (for more details, see Neff & Germer, 2017).

Several studies show that even short-term exercises in self-compassion can have major effects. A common intervention in clinical studies is to ask clients to write kind and considerate letters to themselves when they feel self-critical, "as if they were writing to their best friend". Shapira and Mongrain (2010) found, for instance, that seven days of letter writing led to significantly lower depression levels in a group of depressed individuals.

There is very little research on self-compassion from a gender perspective. A meta-analysis by Yarnell et al. from 2015 showed that women have a slightly lower degree of self-compassion than men, which is also consistent with previous research showing that women are more self-critical than men, and that women are often more compassionate towards others (DeVore, 2013). The authors stress, however, that the gender differences are minor and should not be overestimated.

From these perspectives, we conclude that mental resilience and self-compassion are essential skills in organizations characterized by critical scrutiny and competition. Environmental factors such as workplace culture and relationships are vital to building resilience and self-compassion, but both these skills can also be improved with practice.

A Network for Women Senior Researchers

Different Experiences Mean Different Needs

As mentioned previously, the department heads had been asked to nominate candidates for this programme. Nominees should be researchers with the potential to build and lead large research teams. No criteria were specified for the nominee's career stage, except that they should have a

permanent position as a professor or associate professor. Consequently, some participants were relatively newly-appointed associate professors, while others were established professors heading large research teams. The network created in this programme thus filled different needs of the participants.

Hedda, for instance, told us that she had participated in a similar network earlier in her career. Being nominated for that programme was the first time she felt that she was acknowledged as a qualified researcher, someone with a future in academia. She says, "And I think that's the first time in my career anyone told me, 'You know, you're going to make it, if not here then somewhere else, so don't give up!'". She adds, "When you reach a make-or-break point, being acknowledged can make all the difference". Today, she is an established researcher, and being nominated, being acknowledged by the department head as a researcher with the potential to lead large research teams, is not as important. She already knows she has that potential.

For Kari, on the other hand, the nomination changed her perception of herself as a researcher. Until then, she had seen herself as a teacher, primarily, but being nominated made her see that the department head had confidence in her as a researcher. She says, "I saw myself as a teacher. I thought that was what they wanted … what they had ordered. I didn't perceive myself as a leader of a research team". Participating in the network gave her more agency. She adds, "After the first meeting … that boosted my self-confidence … and I realized it would actually be possible to write an application. Now, I've applied for research funding … and got it".

Several participants accepted the offer to take part in the programme even though they, like Hedda, felt they had passed the stage in their career where they needed it. Anna said yes because she likes sharing her experience with younger researchers. She says, "But I also appreciate being able to share knowledge. We've all had our problems, and I can see that when someone else describes it now, I've experienced the same thing. And I think the group discussions are good and honest".

Sigrid also chose to participate although she was unsure of the benefit to her personally. "I thought, well, the head of the department chose me, I was asked to do this, so I'll try to get something out of it that's good for me."

Taking On a New Role

> I can tell you a bit about what it was like before I became an associate professor. So, I've published frequently, and been very active in the international community, and I started to get a lot of invitations. Then I transferred to the university, and there I was … in the past, I was the one doing everything. I was a post-doc or a researcher doing the research. But now I need to delegate instead, I'm learning how to make others do the work, and yeah, I'm changing a little bit.
>
> (Marthe, associate professor)

An associate professor is expected to take an active part in building a research team. Even if the associate professor has had several previous, temporary post-doctoral or research positions and applied for various kinds of research funding or jobs, the associate professor position involves new demands. One must apply for other kinds of research funding, and the role of leader of a research group is more pronounced. Marthe, recently appointed associate professor when the network began, describes the change in the above quote. She was a successful and well-published researcher with a large international network when she started as an associate professor. Her new position meant not only that she had to stop experimenting in the laboratory herself in order to build and lead a team of doctoral candidates and post-docs, but also that she would lead the process of building a laboratory in practice, involving everything from ventilation to equipment, as well as developing new courses and teaching students on graduate and master levels. When she cannot focus on research, the number of papers she publishes per year decreases, which she finds frustrating.

One thing an associate professor needs to know, and which several participants mentioned, is how to handle rejected applications for funding. For Marthe, the new role involved applying for new kinds of funding, and she often received rejections. She says,

> The last two years, let's just say I've been failing a lot. But also winning a lot. Learning from the failures, I got better and better, and I did get some funding. So, I mean, that's how it is. It was heartening to hear all of you and other people. It helped me with this sense of failure. And now I just say to myself, "Okay, so I failed, like everybody else".

Marthe was not used to having her research funding applications turned down, so it felt like failure. By sharing experiences in the network and mirroring herself in other researchers who had advanced further in their careers, she realized that a rejection does not mean that she is a bad researcher, or that her idea was poor, or her CV was not up to par. Most applications are turned down. The reason Marthe no longer sees a rejection as proof that she is a bad researcher is the discussions in the network. Other members, whom she regards as very skilled researchers, have also had their applications for funding turned down. For Marthe, that no longer contradicts her being a top researcher. Bente describes a similar experience: “I think the network, and listening to other people’s stories … I’ve had a few years of failure, but it’s good to know that others have failed as well”.

For Thea, the group has changed her perspective on herself as a researcher and what funding she should apply for. “It’s true that during the process, and by listening to the rest of the group, and especially the meetings we had with the others who had applied for big projects, encouraged me to think even bigger and especially not to be afraid to fail.” Thea says that the group encouraged her to “think big”. She is now planning to build a larger research team and is not afraid of having her application for funding turned down. Maren has had a similar experience of being in the network, and was encouraged to apply for new kinds of funding. “At least, I think this group has given me a bit more momentum than I had before. Yeah, pushed me to apply, and other stuff.”

The Problem Is Real

Few associate professor positions are advertised, and competition is often fierce. Several network members describe how they, as relatively new associate professors, feel pressured to prove their worth, that they are qualified researchers and will contribute to the milieu to which they were recruited with top research, realized through publishing and research funding. Bente relates, for instance, that she finds it hard to say no to assignments. “If I always say yes, then everyone will see that I’m qualified. So, I say yes.” She also describes how the breadth of the network,

with people from different departments and at different stages in their careers, has helped her see her own situation from new angles, helping her to know when to say yes or no to assignments. She adds, "There aren't that many in the department I can talk to about this, who share my experience. So, meeting others who know what it's about … and talking to them so I understand more, that's really nice".

Agnes has almost the same experience. She feels that teaching takes so much of her time that she has little left over for writing applications and articles to the extent expected of her. But to admit that she has more teaching hours than she can cope with would be the same as saying they had recruited the wrong person. She adds, "Being able to discuss with others who are, or have been, in the same situation has been incredibly helpful in this relatively demanding start-up phase of my academic career".

Talking to others in the network, and sharing experiences, has meant that personal feelings of inadequacy or failure can be identified as actual problems, things that need to change. Agnes continues, "I was really, really fed up with everything, and this trio coaching, where I managed to put into words what I really feel, helped me to see that this is actually a big problem … It was good to realize that, okay, this is a problem, so I have to do something … it was really an eye-opener". When Agnes identifies the problem as being outside herself, she also becomes more able to take action. She can do something to change her situation. Discussions in the network also helped Kathrine see her situation from new perspectives. She emphasizes the importance of having an exclusively female network:

> So, first of all, being part of this group helped me a lot, because I'm in an environment where all my colleagues are male, and I have never had the opportunity to discuss things more deeply with a female researcher on my level or higher. … So, for me, it's very encouraging, and very positive to share things in the group. … Compared to a year ago, it has helped me a lot having a network, to understand what steps I can take to improve my career profile. I have people to ask too, that's very important. And women, also. Which, for me, it's completely new, it's like paradise.

It Is Like a Safe Zone

The network has helped young researchers handle the fiercely competitive academic culture, critical scrutiny and frequent rejections of various kinds of applications. Sharing experiences has also made them see their individual problems as something outside themselves, which they should address. But what has the network meant to more experienced researchers? Those who were unsure of whether they had anything to gain from participating.

Silje says that academia is so individualistic that the network gave her something she needed, "a sense of community". Ella agrees. She says she lacks opportunities for informal contact with colleagues. There are very few women in her workplace, and her male colleagues socialize in ways that make it hard for her to join in. For instance, they jog and enter marathons together. She says,

> When we meet with female colleagues we go and have coffee, things like that. And then we talk shop and such, and create a group. The same happens for men, because in reality we're all the same. But they do it in a separate context. And since they are the majority, they think everybody knows, but of course that's not the case, because we weren't there. And that doesn't even occur to them.

Ella says that informal groups of only one gender can be a problem, especially in workplaces like hers. The information exchanged in the group does not reach those outside the group. The network gives Ella information about the faculty that is not available elsewhere to her as a woman. Had she been a man, she would have been able to get the information when she was out running with her colleagues. Younger researchers also describe how, through the network, they obtained information, which they would not have been able to obtain otherwise. Kathrine says,

> Thanks to this network, I'm also more aware of things happening in the faculty. … I have more contacts, and it helps me understand a bit better what I need to do. … And the network helped me quite a lot, I feel I'm in a safe environment, and if there's something I don't know, I can just ask. This is good. This is exactly what I needed, a group or human resource, a source of information, and awareness.

Nora refers to another dimension of the network, describing how it feels to be acknowledged. She says,

> I feel I've been seen. And that's important. In another way perhaps than how I'm acknowledged in the workplace. … Being able to discuss kids and stuff, that it's a problem not getting home on time, that sort of thing. That there are things we find … challenging for family life. It may sound strange, but little things like that.

Nora says that she can't talk about all aspects of her life with her male colleagues. They see her as a skilled researcher. But to maintain that image, she can't mention her kids, or the demands on her as a mother. That would mean emphasizing gender differences, that she is the only woman in a male group.

Maria says that the network fills a need by not including her close colleagues. "Yes, I felt that this was a forum I needed, people who are neither friends nor colleagues." She feels that she can talk about things in the network that are hard to mention to friends and close colleagues. Friends work in other sectors and do not share the same experiences or know how an academic environment works, and colleagues are competitors. The network provided this opportunity. "Talking more about general things and experiences, without it getting too personal, which it does with colleagues, when everyone knows everyone. It can be hard. … I felt it was very useful. And when we had coaching, that was very good. It forced me to dig deeper. There were things that had been painful, and I felt it was really good to have the chance to debrief."

Since network participants were in different phases of their careers, from all the faculty departments, this was a place where Maria could talk to people who understood her problems without being in a competitive situation. She adds,

> But it was also about being in the same situation, without being too close. I didn't need to worry about tactics or positioning, or that she knows him, or that they've worked together, so I had to … I felt it was like taking a break from it all, like a safe zone. I have colleagues I can talk to as well, but it often feels like I've said too much. I realized how much I needed this.

Maria says that talking about problems at work also leaves her feeling vulnerable. To discuss problems, she has to reveal sides of herself other than the perfect researcher without failings or weaknesses. Thea agrees. She says, that in order to build relationships you need to open up, which makes you vulnerable. "When you share something personal, you open up. You make yourself vulnerable, but you also get something back. And then you really start to discover things and can start building connections." The only way to get something back is to be personal, and vulnerable, according to Thea.

Networks to Enhance Resilience

Not Having to Be a Woman Researcher

The programme was designed as a qualified network, because the nominated women researchers were very clear about wanting to build a network where they could share experiences and discuss various subjects. They also describe in the interviews how important it is for them to meet other women through a network. Even if their contact with male colleagues is good, and they have many female friends, they miss having a place where they can meet and talk to other women researchers. Marthe's description of this opportunity to talk to other women researchers is, "It's like paradise".

Men are in the majority on the professorial level in all faculty departments except one. On the student and recruiting levels, males have a majority in five departments, while two are more or less gender balanced, and women dominate two.[1] That means that nearly all network participants come from departments where men are in a clear majority on their level, and most come from departments with male dominance on both student and professorial levels. However, even those from departments where there are more female than male professors, emphasize the value of women-only networks.

Being a minority entails working under special conditions (Halford et al., 1997; Kanter, 1977; Snickare, 2012; Wahl, 1992, 2003; Wahl et al., 2018). In eight of the nine participating departments, women are a minority

in leading research positions, and therefore stand out more than men. However positive this may be, it also entails more pressure to perform and do the right thing (Wahl, 1992, 2003). What the majority has in common is also manifested in the minority. Only when a woman joins the research team does it become conspicuous that it was previously all male. The minority members are not considered as individuals, but as representatives of their category, that is, as women researchers, rather than as researchers with a variety of capabilities and characteristics. In effect, women in leading research positions are treated and judged according to generalized notions about women and men, whereas men are treated as individuals (cf. Kanter, 1977; Snickare, 2012; Wahl et al., 2018).

Understandably, a network for women researchers would be welcome in departments where women are in the minority, but why do women in departments with a majority of women researchers also feel this is important? As described in the introduction to part three of this book, the FRONT project is based on a processual approach to gender, that is, seeing gender as an integral part of everything that goes on in an organization. Gender is something that is *done* in the organization (cf. Acker, 1990; Butler, 1990, 2006; West & Zimmerman, 1987). That means that femininity and masculinity are regarded as social constructs – concepts constructed in relation to one another, where the contents of one cannot be the contents of the other. *Gender coding* is a term used to describe how a profession or position is associated with a particular gender (cf. Andersson, 2003; Baude, 1992; Sundin, 1998; Wahl et al., 2018; Westberg, 2001; Westberg-Wohlgemuth, 1996). Gender coding is characterized by the notion that genders are very different, almost like competing "classes". Wahl, for instance, shows how leadership is linked to the construction of masculinity. "Leadership becomes an instrument for creating an ideal male image. An ideal image in this context signifies an opposite to 'the other', that is, femininity. In practice, leadership becomes a way of expressing and confirming this ideal image" (Wahl, 1996, p. 18, translated from the Swedish). In a study on investment banking, Snickare and Holter (2018) demonstrate how work is constructed as an ideal of masculinity, making it impossible for the men interviewed in the study to leave their jobs despite strong dissatisfaction with working conditions.

Lund (2012) borrows Acker's term of the *ideal worker* (see Acker, 1990) in an examination of how the ideal image of an academic career and worker are constructed. She describes the ideal academic worker as a "superhero", someone who works around the clock, writing research funding applications and articles. They always prioritize work and have no interests or obligations beyond that. The ideal image is created by those with the prerogative of interpretation within the organization (e.g., Wahl, 1996). Since men still hold the majority of leading positions in academia, the image of the ideal academic worker is constructed by men as ideal masculinity, like the image of the ideal leader and investment banker, an individual who, unlike female academics, is not responsible for the care of others. Even in departments where the majority of professors are women, the descriptive norm for senior researchers remains male. This means that men in academia are acknowledged both as researchers and as men, since the concept of man and ideal academic worker are mutually enhancing.

Even in departments where the majority of professors are women, the descriptive norm for top researchers remains male. For female academics, this means having to deal with being women in a profession, a role, constructed by and for men – in addition to being severely underrepresented in their department, as most of the network participants are (cf. Snickare, 2012; Thun, 2018; Wahl, 1992, 2003). This is not about managing work-related demands, but is rather about being a woman in a role created for a man. Women in male-coded professions are expected to balance male and female styles in clothing, language and behaviour by not dressing, expressing themselves or behaving in ways that emphasize femininity. However they must also avoid anything that suggests they are trying to be men (Husu, 2005; Wahl, 1996). Informal workplace activities that are normally gender-segregated, such as sports, are especially hard to handle, since they emphasize gender differences (Wahl, 1996).

In a study based on the interviews with the participants prior to the start of the network, Thun shows that the responsibility for handling "awkward" situations is individualized, and that women handle these matters themselves (Thun, 2018, p. 131).[2] Being mistaken for a student when you are a professor, not being notified when the conference starts

because the organizer did not think you were participating, getting comments on your appearance and clothing from students in their course feedback – these are just a few examples of "awkward" situations that the interviewees handled in their everyday working life. Always being a little bit wrong, not fulfilling expectations of what a professor or conference participant should look like (i.e., male), means forever having to prove your qualifications. Being treated as a woman rather than as a lecturer, in comments on clothing and appearance, has the same effect: the role of lecturer has to be conquered.

Edmondson (2014) defines psychological safety as "a shared belief that the group is safe from interpersonal risk taking". It feels safe to be yourself and show others who you are without running the risk of rejection by the group. This term is used in a variety of contexts to denote organizational structures, work structures, and team interaction. In this context, it also describes the mental and physical space that participants call a safe zone, a free space. In the safe zone, it is possible to be whole, in the sense of being *both* a woman and a successful researcher. Here, women are not gender-labelled and do not need to negotiate the academic, critical, judgemental eye. It is permissible to talk about kids and partners, along with professional victories and setbacks. The structured format for network meetings kept all discussions within the framework of academic positions, but experiencing the forum as psychologically safe seems to have entailed that the academic position was renegotiated to include their *entire* life situation. In the safe zone, no one is a *woman* researcher but a *researcher*, with a life within and beyond academia.

Seeing the Potential to Act

Something that is stressed in all the interviews is the importance of sharing experiences with other women researchers in similar situations. Being able to hear the experiences of others and comparing them with their own not only helps participants see that rejected funding applications are a matter of course for research leaders, but can also increase their own scope of action. Several participants say the network discussions

encouraged them to see themselves in new roles, higher up on the career ladder, and to take active steps to improve their chances of achieving that position. This indicates that identifying, through sharing experiences with others, "who are like me", that is women and top researchers, increases the individual's perception of her scope of action.

All participants also agree that sharing experiences meant that they gained new perspectives on their own situations, and saw new possibilities for what they could do to solve problems, etc. When seen in relation to other people's stories, personal experiences that were previously perceived as one-off events or personal failures start to form patterns and structures. When the individual problem is seen as part of a structure, this opens up new possibilities to act. If, for instance, an individual sees the problem of delivering excellent results in both teaching and publishing as a personal shortcoming, the ability to find a solution is different than if expectations for one's work efforts are considered unreasonable. Likewise, demands and evaluations from students can be handled differently if they are regarded as part of a structure with different expectations for female and male researchers, rather than as personal shortcomings.

Shifting the perception of a problem from personal shortcoming to something outside the individual entails seeing it as "a real problem", something that can and should be dealt with. When personal experiences are aggregated with the experiences of others, patterns and structures become visible. Recognizing these patterns happened gradually, however, and interactively with the other participants. For example, the group strongly resisted the gender theory framework for the project when it was presented at the first network meeting.

The theories encountered strong resistance in the participant group. The dichotomy of structural explanation models and individual agency became very clear. References to gendered structures were perceived as irrelevant and obsolete, positioning women as the passive victims of a male dominated structure. The participants saw structural explanation models as a way of avoiding personal responsibility, and treating women as less aware and in need of targeted support. Alma describes the group's reactions. "We kind of agreed that we weren't interested in this gender

thing." As the project proceeded and the participants were able to share their experiences in trio coaching and discussions, their attitudes towards structural explanation models changed from negative to positive. In the concluding group interview, Alma says,

> I think we became more aware of the facts, and also recognized that there were these domination techniques. So, I think this is more important than I perhaps would like to admit.

Maya agrees with Alma and adds:

> Yes. Maybe we are afraid, or I'm afraid, of receiving negative judgment, or whatever. But if you read situations without judgement, like you read a text, and you see the cold facts, that's the whole point. I admit I am biased. And that's not a man's fault, that's society, how it is. So, to realize this also made me relax. It's like, I know I can work on it, and I see it. Like now, I'm recruiting for a PhD position, and I just see the qualities of the candidate, not their gender or where they come from.

When the participants, through sharing their experiences, gradually discovered how individual episodic stories were part of a structure, their attitudes to gender theory changed and they saw it as a useful tool in the process of change. Understanding how academia is systematically constructed, in some respects, on traditionally male values and concepts that can impede women, was no longer a theoretical model but something based on their own experiences.

The common elements in their stories gave them a sense of being part of a possible process of change that grew into something greater than an individual striving to write better applications, no longer being devastated by rejected funding applications, or blaming themselves for not being able to set boundaries. From at first perceiving their ability to take action and responsibility for their individual situations being limited by an understanding of structures, they later on became more empowered through understanding the structural framework. A structural model of how gender organizes academia created more space to manoeuvre, instead of creating the feeling of being a victim.

Conclusion

As described previously, resilience is an individual's ability to handle change in a positive way, and to recover quickly from setbacks and adversity (Tugade et al., 2004). Resilience can be improved with practice (Rook et al., 2018). It is built through interaction between the environment and the individual's characteristics and skills. For most adults up to retirement, the workplace is the most important environmental factor (Rook et al., 2018).

In the paragraphs above, we show how participants in a network for women researchers become more resilient, mirroring themselves in and sharing experiences with each other. Being in a context with other recognized top researchers without being the odd one out, the woman who has to prove herself to be included, is energizing. In the safe zone, they are not *female* researchers but *researchers* – with permission to talk about and share experiences from their entire life within and beyond academia.

Sharing experiences enhances the ability to cope with adversity and handle problems by changing one's situation. Realizing that even the most prominent researchers have their funding applications rejected, for instance, means that fear of failure need not limit one's actions. Similarly, identifying obstacles as "real problems" rather than individual shortcomings also increases one's ability to act. Sharing experiences and examples also changed the perception of gender theory and models, from limitations to individual freedom of action, to useful tools for navigating an organization. Once the theories were linked to their own reality through concrete examples, participants were able to use them to reveal structural gender inequality.

Participants stressed that it was the genuine exchange of experiences that formed the core of the network. As described earlier, the purpose of the process-oriented network meetings was to provide a safe zone, with a clear, recurring structure, where participants could share their experiences. The idea behind checking in and checking out was to give the workshop a clearly defined framework. By checking in, participants could connect with each other and mentally transfer their attention from their hectic work-life to the workshop theme. Similarly, gathering for a concluding session including reflection and check-out was intended to

give participants a chance to round off the workshop theme and the discussions with each other. The theoretical injections of themes raised by the participants were aimed at adding perspectives on and introductions to trio coaching. Trio coaching is a method in which participants with different experiences, from different academic positions, can share their experiences and coach each other on an equal footing. In our opinion, this is where resilience has developed, while other workshop activities have facilitated the effects of trio coaching.

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Notes

1 Gender balance is described and discussed in greater depth in Chapters 1 and 2.

2 See Chapter 7 for more on internalizing disadvantages and setbacks.

Author Biographies

Eva Amundsdotter is a senior lecturer in pedagogy at Stockholm University, particularly interested in organization and leadership. Her primary research area is processes of change in organizations, focusing on gender, power and norms. Other research and development projects focus on action-oriented gender research, where she, together with leaders and managers, including those in academia, have developed a gender-aware leadership. Eva participated in the FRONT project's work with leadership development and in the action research carried out in connection with this.

Ylva Elvin-Nowak holds a PhD in psychology and is a licensed psychotherapist. She is the assistant operations manager at Academic Primary Health Care Centre in the Stockholm region. She is currently involved in research on health services' responsibility for disclosing and handling domestic violence. Ylva has written several books from a gender-psychological perspective, such as *I sällskap med skulden. Om den moderna mammas vardag* (2001) (*Accompanied by Guilt. Modern Motherhood the Swedish Way*) about the modern mother's everyday life. Ylva was involved in the FRONT project as a process leader for the women researcher network and in the action research carried out in connection with this.

Greta Gober is an assistant professor at the Faculty of Journalism, Information and Book Studies at the University of Warsaw. Her research is oriented towards organizational culture, communication, and gendered power relations and identities, especially in the media sector. She is the principal investigator for the "Diversity management as innovation in Journalism" project (2021–2023), funded by the Norway Grants – Basic Research Programme, vice-president of the International Association of Women in Radio and Television (IAWRT) and vice-chair of the ECREA

Gender, Sexuality & Communication section. Greta participated in the FRONT project as a researcher.

Øystein Gullvåg Holter is a professor emeritus at the Centre for Gender Research (STK), University of Oslo. His research focuses on gender, masculinity, and social inequality. He has participated in Norwegian, Nordic, and European projects, and has written a number of books, among which are: *Sjekking: kjærlighet og kjønnsmarked* (1981) (*Mate Selection: Love and the Gender Market*); *Menns livssammenheng* (with Helene Aarseth, 1993) (*Men's Life Context*); *Gender, Patriarchy and Capitalism: A Social Forms Analysis* (Dr. philos. dissertation, 1997); *Can Men Do It: The Nordic Experience* (2003); *Gender Equality and Quality of Life* (2009). Additionally, he has published a number of articles and report contributions, such as *Politikk for likestilling* (NOU 2012: 15) (*Policy for Equality*, Official Norwegian Report), and the EU report *The Role of Men in Gender Equality* (2013). In 1989, he started a network for studies of men, later extended to Nordic and international networks contributing to research, for example *Man i rørelse* (*Men in Movement*) 2007. In the FRONT project, Øystein participated as a researcher with particular responsibility for quantitative research, and also worked extensively with the theory development in part two of this book.

Knut Liestøl is a professor emeritus at the Department of Informatics, University of Oslo (UiO). He has been head of department and vice dean for research at UiO, and chair of the board for the Division of Basic Research and Strategic Research in the Research Council of Norway. Experiences from these roles contributed greatly to his interest in gender equality. Knut has been particularly interested in how excellence initiatives and informal professional prestige hierarchies affect women's and men's opportunities to reach top academic positions. He has been chair of the board for the Research Council of Norway's BALANSE programme since it was initiated in 2013.

Lotta Snickare is a researcher at the Royal Institute of Technology in Stockholm, Sweden, and the Centre for Gender Research at the University

of Oslo, Norway. Her research interests are organizations and leadership from a gender perspective. Lotta's current research focuses on gender and power in academic organizations, and she participates in both national and international research projects in this area. Lotta has previously published the books *Det finnes et eget sted i helvete for kvinner som ikke hjelper hverandre* (2005) (*There Is a Special Place in Hell for Women Who Don't Help Each Other*) together with author Liza Marklund and *Makt utan magi* (2012) (*Power Without Magic*). Lotta was the coordinator for the FRONT project, which is described in this book. She was responsible for developing and conducting the project's measures and initiatives as well as the qualitative research, with a special focus on the development of the action research described in part three of this book.

Appendix: Method

We here describe the three parts of the data material in the FRONT project at the Faculty of Mathematics and Natural Sciences in the University of Oslo: the questionnaire surveys, the action research and the interviews.

Quantitative Studies: The Questionnaire Surveys

The FRONT project was originally planned as an exploration of initiatives with a limited emphasis on research. It soon became clear, however, that more research on conditions at the faculty was needed. Consequently, the research part of the project was expanded to include two questionnaire surveys. The two surveys consisted of a detailed questionnaire (18 pages, 190 variables, N = 843) sent to all employees of the faculty (including PhD students), and a shorter questionnaire sent to a sample of master students (N = 213), making a total of 1056 respondents. The project was thus based on a broad combination of methods, including both quantitative and qualitative types of data, as described below. This expansion not only provided a better basis for knowledge, it also became important for the initiatives, since the results were reported back and discussed among employees and management at the faculty in the latter part of the project period, which resulted in greater interest and involvement.

The *employee survey* included questions on career development, experiences from the PhD period, support from supervisors, collaboration with colleagues, ambitions and motivation, publishing, promotion, bullying/harassment, unwanted sexual and racist attention, and evaluation of the culture in the department/unit. It also contained questions on one's interest in the natural sciences from a young age, and on the households of married and cohabiting couples, including which of the

partners' careers had priority. It was designed to delineate the employees' experiences and challenges throughout their careers.

The questionnaire form was developed based on a combination of recent international studies of gender differences in academia (particularly the European Asset and Integer studies: Aldercotte et al., 2016; Drew, 2013), and recent research on gender and equality in Norway (Holter et al., 2009), in Europe (Scambor et al., 2013, 2014) including Poland (Warat et al., 2017), and internationally (Barker et al., 2011). The questions on career, work environment and culture were gender neutral. We were thus able to map the effect of various types of social inequality (background variables), including ethnicity and social class (see Chapter 6).

The *student survey* included questions on the students' attitudes to gender equality, and their experiences of gender balance in their learning environment. The survey was based partly on a previous UiO study of students' learning outcomes (Thun & Holter, 2013), and also included questions on the culture of "gender marking" disciplines (whether programmes or subjects are perceived to be "feminine" or "masculine"). Given that the situation is different for students and employees, the questions in the two surveys differ.

Altogether, the two surveys provide greater breadth and depth of detail in the data material than what has prevailed in studies of academic careers. For example, questions regarding gender balance are connected with work environment, academic culture, gender equality, and other dimensions of social inequality. The surveys cover a total of 269 variables (190 in the employee survey, and 79 in the student survey). This breadth enabled cross-sectional analyses, as well as providing greater detail and depth in many areas, resulting in new information and findings not previously known.

Questions were formulated through collaboration in the FRONT team, the project's resource group, and with the faculty leadership. We wish to emphasize that a shared, open and curious approach characterized this collaboration. The attitude has been to put all facts on the table regardless of whether the problems were big or small. In other words, the researchers on the team were not inhibited because of critical questions and analyses.

The market research firm Ipsos conducted the employee survey in collaboration with FRONT from March to May 2018. The questionnaire, developed and delivered by FRONT, was designed as an online survey to which employees were encouraged to respond through faculty emails, among other things. The survey was sent to academic employees from the PhD level upwards (both temporary and permanent employees), as well as to administrative/technical employees. FRONT also conducted a limited study of former employees at the faculty by sending out the employee survey to 100 persons who completed their PhD at the faculty between 2010 and 2016, but were no longer employed there in 2018. The online version of the form was filtered according to position category, so that the academic employees answered the entire form, including academic career development, whereas the administrative employees answered only part of the form.[1]

The student questionnaire was distributed in paper format to master's students in randomly selected lectures and reading halls in late autumn 2017. The students were studying computer science, biology or physics. Computer science made up the largest group. The response rate among the students was approximately 95 per cent (N = 213). Women constituted 44 per cent of the sample, men 55 per cent, and others 1 per cent. The majority were between 22 and 25 years old. Those with Norwegian nationality made up 73 per cent, whereas 27 per cent had a different nationality.

Both the student and the employee surveys motivated many respondents to make comments, which was an option at the end of the form. The comments consist of both praise and criticism of the working and learning environment. There is some skepticism to the surveys, mostly from men, but this is sporadic, and not common in the comments.

The employee questionnaire was answered by 843 people (485 men and 358 women), of whom 705 are currently employed, and 138 are former faculty employees. The latter group consisted primarily of former PhD fellows, in addition to some who had recently retired. It is difficult to state the exact response rate for each position category, as we do not know how many actually received the questionnaire form, and many, particularly on the recruitment level, changed positions around the time when the form was distributed. However, we can obtain a relatively realistic picture

by looking at the number of responses in various position categories and comparing them with data on employees from the Database for Statistics on Higher Education (DBH). As expected, PhD fellows had the lowest response rate, with just over 30 per cent. With little experience in academia, it can be difficult to answer, and in addition, turnover in this group is high. Among the other groups of full-time employees, the response rate was relatively even, from just over 40 per cent for postdoctoral fellows and associate professors, to roughly 45 per cent for full professors, and up to almost 50 per cent for researchers and technical/administrative employees. Given that the questionnaire was extensive, this represents, as far as we are able to judge, a satisfactory response rate compared to similar surveys. The form was formulated only in English (not Norwegian), which may have slightly reduced the response rate. As mentioned, the response rate among students was very high (95 per cent), but this survey was smaller (fewer questions and a smaller sample, 213 students). Moreover, the sample was somewhat random and consisted only of students who had shown up for classes in three essential natural science disciplines (computer technology, biology and physics), or were present in reading halls during the period when the survey was carried out.

As mentioned, the surveys include 1056 respondents in total. An analysis of dropout from the employee survey shows that men responded slightly less often than women (roughly in line with other similar surveys), and that the PhD fellows responded less often than the rest – but apart from this, the survey is relatively representative of the faculty. Typical reasons for not answering were "too little time", "the form was too long" and the like. One can also imagine that "association to employer" (Ipsos distributed the form, but the faculty leadership sent out a reminder) and "aversion to issues concerning gender and gender equality" also contributed to a lower response rate. However, we do not find any clear indications of this. Nor do we see any clear signs of skewed selection (dropout or skewed distribution) on questions relating to gender equality. The response rate is slightly higher among women than men, which is common for this type of survey.

Data analysis was carried out by the FRONT team (primarily Holter), partly in collaboration with Åsmund Ukkelberg from Ipsos, in order to identify the material's main patterns. The collaborative method included

a combination of paired and multivariable analysis techniques. The analyses were mainly explorative, focusing on mapping statistical associations, rather than hypothesis testing.[2] However, the data allow sketches and models of possible causal factors, intermediate, and effect factors. This is described in more detail in Chapter 4 on publishing and Chapter 6 on intersectionality. Analyses also included more detailed techniques, such as cross-tabulations and partial correlations.

A chief goal of this work was to produce "robust" results across techniques, in other words associations that are clear and consistently statistically significant. The FRONT team led by Holter used mainly SPSS for the data analyses, in combination with Excel, Open Office Draw, and other programmes.

The next step was to remove spurious or self-evident associations, and test what we were left with, considering the impact of background variables, and other essential variables as they gradually emerged more clearly in the analyses – for example, experiencing academic devaluation and unwanted sexual attention.

The analyses showed a considerably larger gender gap in experiences than the early interviews in the FRONT project showed. "Statistics see what you do not see," Arnoldo Frigessi claims (in Vogt, 2019). This rule struck a chord in our material. The faculty took part in a sort of X-ray examination in relation to gender balance and gender equality. The surveys provided a new and more critical picture than what we had expected from the first round of interviews. The results were more interesting than we, as researchers, had anticipated.

Figures from the questionnaire surveys in this book represent primarily only statistically significant gender differences with a few exceptions, in which the absence of gender difference is essential. This is commented on in the text, for instance in the figures in Chapter 5, in which variables that do *not* have a significant gender difference are included, because this is an important point in relation to the gender gap. The gap varies and includes only some of the variables. The fact that we find significant gender differences for roughly half to two-thirds of the environmental and cultural variables (depending somewhat on the measurement method) is nevertheless an important finding that applies to the material as a whole.

One methodological objection discussed in several chapters, based on discussions at the faculty, is that women are more critical than men in evaluating the work environment and academic culture, and that this affects our results. It should be emphasized here that nearly all the variables relating to work environment and culture were formulated in a gender-neutral manner. Although dropout may be somewhat conditioned by an interest in gender and gender equality questions, we see a relatively even response rate among different groups. It is also unclear why this should play a significant role in specifically gender-neutral questions about one's work situation. Moreover, we have clear indications that women are *not* more critical than men, for instance in relation to supervisors. This also applies to areas where, based on the objective situation, they could respond more critically than men (satisfaction with salary level). Our interview results indicate the same thing.

With all this in mind, we consider the hypothesis that "particularly critical women" have answered the employee survey to be unlikely, as well as the possibility that "particularly critical men" have dropped out. However, the project did not include a dropout study, with an analysis of those who chose not to answer the questionnaire.

There are important research challenges related to what our results tell us, and what they do not tell us. They say *something* about selection and dropout upwards in academia. Moreover the structural map (in part two of the book), and the development of initiatives (part three) are new. However we have only, to a small degree, included experiences from all the people who drop out from the career ladder. What have they experienced, why did they quit? This is a weakness that may be corrected by better dropout analyses (on different levels) in further research. "The losers" experience things that "the winners" do not see.

It is also clear that both the questionnaire surveys and the interviews may be improved – as is always the case in retrospect. Some variables clearly point to significant differential treatment, such as academic devaluation, unwanted sexual attention, and problems following care leave. These deserve more elaboration and more detailed investigation, in addition to more questions on gender equality. We have reason to believe that the inclusion of more such critical questions and a larger sample,

including dropouts, would sharpen – not dampen – the critical picture that our data provide.

We asked about place, but not time, in relation to important work environment issues, such as harassment. This is a weak point. We do not know for certain, then, how much reporting is characterized by experiences here and now (for example, on the current position level), compared with older or long-term experiences (current and previous position levels).[3] The surveys included many questions, and the questionnaire forms would have been far too long if we were to include sub-questions for each. A clearer follow-up of the most important ones, more "in-depth" both in details and as a process over time, therefore stands out as a topic for further research.

Method Development in the Chapters

The chapters in the book's first part are based primarily on the questionnaire surveys in combination with the interview material. Here, we discuss the main results, topic by topic, in relation to gender balance and gender equality. Methodological remarks are included in each chapter. The statistics are mainly bi- and trivariate analyses. The chapters in the latter half of the book's first part include more multivariable methods and controls for other dimensions of social inequality.

In Chapter 4 "Who is Publishing What? How Gender Influences Publication", we apply a multivariable analysis. If gender is included along with other variables in the analysis, particularly position level and the number of working hours spent on research, a separate gender factor becomes hardly visible. These are self-reported data, but as far as we can see, they are fairly realistically reported. Statistics indicate that the idea of women publishing less "because they are women" does not hold true.

Chapter 6 "Ethnicity, Racism and Intersectionality", presents the most important ethnicity-related problems in the material, and compares these with issues related to gender and class. Here, we apply multivariable techniques in order to uncover *intersectionality*, defined as co-variation between different grounds of discrimination.[4] We analyze co-variation between gender, ethnicity and class. The analyses are based on statistical regression analysis and other techniques, as described in the chapter.

The chapters in part two of the book are focused primarily on model construction. The FRONT study's main results are summarized, discussed in relation to other research, and developed into models. Each model utilizes a somewhat dramatic metaphor, which may help their being remembered, and used, by researchers to understand the specific organization and academic culture.

Chapter 7 "The Bøygen Model: The Hypothesis of Accumulated Disadvantage", elaborates on the empirical data presented in Chapter 5 "Experiences in Academia: A New Survey Study". The hypothesis that obstacles and inner doubt are connected is verified and presented in a model.

Chapter 8 "The Janus Model: Why Women Experience Disadvantage", distinguishes between legitimate gender differentiation and illegitimate gender stratification. Stratification takes over from differentiation, as a main tendency upwards on the career ladder. We also discuss more complex connections between these two elements. That gender stratification comes into play is shown empirically, for instance, in Chapter 3 "Sexual Harassment: Not an Isolated Problem", and in Chapter 5 "Experiences in Academia: A New Survey Study".

Chapter 9 "The Triview Model: Three Views of a Problem", presents a model largely based on qualitative empirical evidence from the project (and supported by the surveys), particularly in terms of culture and informal communication.

The quantitative material from the questionnaire survey and the analyses uncovering gender-related patterns enlarged the picture significantly, in relation to early interviews and the qualitative material in the project. It provided an opportunity to develop the models described in the book's second part.

Qualitative Studies: Action Research and interviews

As already mentioned, the FRONT project consisted of various measures to promote gender equality at the faculty, in addition to research. FRONT's strategy has been to combine the implementation

of measures with research, that is, to create initiatives that could be applied in practice, and at the same time generate new knowledge. The research following the initiatives was based on methodological elements from action research. In the introduction to part three of this book, we discuss action research in relation to the initiatives. In addition to methodological elements from action research (such as field diaries from 23 workshops), the research following the measures is based on interviews. Among a total of 93 interviews conducted by the project, 43 were carried out as part of action research. The remaining 50 interviews were conducted with various purposes and somewhat different methods.

In the next section, we start by describing the research following the measures before describing the rest of the interviews.

All the interviewees are anonymized. When quoting Aksel, Wenche, Tobias, etc. in the various chapters of the book, we use fictitious names.

The Research Following the Measures

Chapter 10 "From Biology to Strategy: The Development of a Management Team"

The initiative analyzed in this chapter was five seminar days for the faculty's management team, on the topic of gender equality. The management team, a total of 14 people, consisted of the dean's office and heads of the departments. The initiative started with a two-day seminar. Three months later, the group met again for one seminar day, and a further three months later, the initiative concluded with a two-day seminar.

The analysis in the chapter is based on qualitative material in the form of notes from the five seminar days, and ten individual interviews. During the seminars, the researchers took notes by hand, and when the day was over they reviewed their individual notes and wrote a joint field diary. Flip-over sheets and other material produced by the participants were collected and documented in the field diary.

One year after the seminar series ended, individual interviews with the ten participants who had been present at all seminars were conducted. The

semi-structured interviews lasted one to two hours and were recorded and transcribed.

The two researchers who followed the project played somewhat different roles. One of the researchers met, as the project's coordinator, the participants in connection with other project related activities. This researcher conducted the individual interviews and planned the initiative's activities. The other researcher was only involved in the actual implementation of the seminars.

The analysis itself began with an inductive approach to the material. All the material was reviewed several times to see whether it was possible to identify recurring themes and potential similarities and differences. The coding was based on the informants' own descriptions and concepts. In the next phase, the material was interpreted based on theory of sensemaking.[5] In the analysis, the management team's role was investigated. What can a management team do specifically in order to develop sustainable equality work in the organization, and how should the team develop to be able to do this?

Chapter 11 "From Resistance to Change? Processes for Change Within an Organization"

The initiative analyzed in Chapter 11 is a seminar series for PhD supervisors. The purpose of the five-hour long seminars was to increase the participants' knowledge of gender imbalance in the organization, and to provide them with the opportunity to share experiences and reflections. Each seminar group consisted of 25–30 participants from some of the faculty's nine departments. All the seminars were arranged in the same way: check-in, theoretical input, case discussions in small groups, and a conclusion by the faculty leadership. All employees at the faculty with supervision responsibilities on master or PhD levels were invited to attend the twelve seminars.

The analysis in the chapter is primarily based on qualitative material in the form of notes from the twelve seminars. The qualitative material was collected through participant observation and is documented as a field diary. During the seminars, the researchers took notes by hand, and when the day was over, they reviewed their individual notes and wrote

a joint field diary. The FRONT project's coordinator contributed to all the seminars, and a research assistant was also involved in conducting several seminars.

In this chapter, two of the seminars are described as two scenes. The first scene is based on one of the first seminars, whereas the second scene is based on a seminar held 18 months later. The scenes are written according to a method (used in action research, among other things) which is intentionally subjective, even if it is based on analyses and discussions in the research group, and therefore does not represent the individual researcher alone. It is comparable to notes from fieldwork, a practice memo, or a diary entry. The researcher's encounter with the field is central. The method includes phenomenological analysis and is not an attempt to say anything "objectively" about what is occurring generally. It is limited to a few specific cases, as they were actually experienced without any kind of advance filter. The scenes thus illustrate various aspects of the change work. The participants are different and react differently. Some are skeptical to the FRONT initiatives, whereas others are more positive.

Here the analysis also began with an inductive approach to the material, where notes were reviewed several times to see if it was possible to identify recurring themes as well as potential similarities and differences. In the next phase, the material was interpreted based on a theory of resistance and change.[6]

Chapter 12 "From Exception to Norm: The Development of Resilience in a Network"

The initiative analyzed in this chapter is an organized network of 18 female associate professors and full professors. The two-year long initiative was structured as a forum, in which the two researchers offered theoretical input on various topics chosen by the participants. Dialogue tools were used to shed light on the topics through a structured and effective exchange of experiences. In total, the network participants met on eight occasions. The initiative began with a two-day seminar followed by two all-day seminars and five half-day seminars. The project's coordinator participated in all the seminars, and designed and organized the

initiative. The other researcher contributed to the design and implementation of six of the seminars. During the seminars, the researchers took notes by hand, and when the day was over they reviewed their individual notes and wrote a joint field diary. However, the chapter is first and foremost based on interviews with the participants. All the participants were interviewed before commencement of the initiative. After one year, interviews were conducted with the 14 people who had actively participated in the programme's activities, and in connection with the last seminar a group interview was carried out. The first interview was conducted by the FRONT project's coordinator in collaboration with the project's postdoctoral fellow. The purpose of the semi-structured interviews was to investigate both the female researchers' situation at the faculty, and whether some common needs and wishes could be supported by means of organized measures from the faculty. The FRONT project's coordinator conducted the second interview. Here, the goal was to explore how the participants perceived the implemented initiative. The concluding group interview was conducted by the FRONT project's coordinator and the researcher who participated in the actual implementation of the seminars.

The analysis is characterized by an inductive approach to the material. All the material was reviewed several times to see if it was possible to identify recurring themes, and similarities as well as differences. The coding was based on the informants' own descriptions and concepts. In the next phase, the material was interpreted based on theories on organizations and gender, as well as resilience.[7]

Other Interviews in the Project

Ten Interviews Conducted as Expert Dialogues

As several of the project's initiatives were aimed at women from postdoctoral to professor levels, interviews with women on these position levels were also emphasized in the research following the initiatives. In mapping the situation at the faculty, we also conducted ten interviews with men in permanent academic positions, and with men and women on master and PhD levels. The interview method, which we referred to

as "expert dialogues", was developed by the project during the spring of 2017. The sample and method were exploratory. The informants were contacted as experts in their fields, based on their experience, and invited to a one-hour open dialogue. Holter designed the dialogue form based on his experience as a working life researcher. The conversations began with a question about what they emphasized and experienced in their everyday working life – what is fine, what is not so fine. Then the question of what they think (and do) in relation to gender and gender balance was adressed. The conversations were conducted using a method largely allowing the interviewees to govern the dialogue based on what they are interested in, while at the same time addressing the main issues in the interview guide.[8] All the conversations were recorded and later transcribed. Initially, the agreed time for the dialogues was one hour. Several conversations lasted considerably longer, up to two hours, as the informants had much they wished to convey.

Nineteen Interviews as Part of the GENERA Project

One part of the Horizon 2020 project GENERA involved an analysis of the organizational culture from a gender perspective in departments of physics in 18 European countries, through interviews with women and men in different position categories. The structured interviews were conducted based on an interview guide designed by GENERA's research group. We participated in GENERA by conducting 10 interviews based on this interview guide. We also carried out another nine interviews at the Department of Physics at UiO using another method, "The Biographical Narrative Interview Method", in order to obtain more material. All these interviews were carried out by a research assistant from the FRONT project. The interviews were conducted in English, recorded and transcribed.

Nine Interviews with Female Postdoctoral Fellows

The nine interviews with female postdoctoral fellows at the departments of physics, biosciences and informatics were conducted by the FRONT project's postdoctoral fellow. All the informants had participated in the FRONT project's ten-day career programme for female postdoctoral

fellows. The semi-structured interviews lasted between one and one and a half hours and were recorded and transcribed.

Twelve Interviews in Advance of the FRONT Initiatives

Prior to the implementation of the FRONT project's initiatives, we conducted interviews with the faculty's vice dean for research, two heads of departments, three postdoctoral fellows who had participated in a career development programme at the Department of Biosciences, and others who were working with research leader development at UiO in various ways. These interviews were conducted by the FRONT project's full-time employee and the project's postdoctoral fellow. The interviews were recorded, and some of them were transcribed. These interviews were not used for research purposes but were conducted to develop the implemented initiatives.

Material From FRONT2

The work of the FRONT project has continued in a new project called FRONT2 (Future Research and Organizational Development in Natural Sciences, Technology and Theology, 2019–2023). The material from FRONT2 is currently being collected and is not yet fully analyzed, but it is part of the picture in terms of our interpretations and discussions, for example of men and masculinities in this book. The material includes both individual interviews and focus groups.

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Notes

1 Ipsos developed the database and guaranteed anonymity in the material, which was submitted to FRONT (in the student survey, the questionnaire form was anonymous). The research team in FRONT worked with an anonymized version of the database delivered by Ipsos.

2 Mainly multivariable analyses with one "response variable" (statistics) or "dependent variable" (sociology). In sociology, the term "multivariate" is often used for multivariable analysis. See also Chapter 6.

3 New studies can, for example, provide better detailing of "long-term experience" compared to "fairly isolated experiences", in the most important problem areas.

4 Meaning different types of social stratification, which *may* provide grounds of discrimination. We distinguish between legal discrimination and social stratification in the book and discuss this distinction in Chapter 6.

5 Sensemaking theory is described in Chapter 10.

6 Theory of resistance and change is described in Chapter 11.

7 For a description of the theories see Chapter 12.

8 For an early example of the development of interview methods in relation to men see Holter & Aarseth, 1993.