CHAPTER 7

The Bøygen Model: The Hypothesis of Accumulated Disadvantage

Øystein Gullvåg Holter
University of Oslo

Lotta Snickare
University of Oslo

Knut Liestøl
University of Oslo

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.

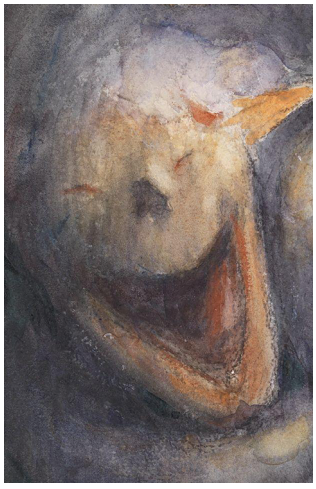

Image 7.1. Bøygen, from Erik Werenskiold's painting *Per Gynt og Bøygen* (*Per Gynt and Bøygen*), 1893. Photo: Nasjonalmuseet/Ivarsøy, Dag Andre.

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).