

NEW AND PERSISTENT GENDER EQUALITY
CHALLENGES IN ACADEMIA

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PhD Dissertation

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Preface and acknowledgements

This dissertation unfolds within the framework of the EU-FP7 financed project *Structural Transformation to Achieve Gender Equality in Science* (henceforth STAGES). STAGES is developed with the general aim to launch structural change strategies addressing the issue of gender inequality in five European research organizations, including Aarhus University in Denmark. The project extends over four years (2011-2015) and adopts an integrated perspective, involving continuous collaboration with the human resources departments in each of the participating organizations. More specifically, the objective for the participating research organizations has been to develop self-tailored action plans geared at introducing gender aware management at all organizational levels, while at the same time obtaining knowledge on the organizational dynamics surrounding these structural change efforts.¹

As a complementary element to the action oriented research activities of the STAGES project, the main objective of this dissertation has been to identify and examine the complex interplay of organizational obstacles slowing down women's advancement at Aarhus University and keeping them from gaining the same academic status as their male colleagues.

I am grateful to all of the informants, who gave their time and shared their expertise and experiences in interviews. I also owe a debt of gratitude to Aarhus University's administration for continuously providing relevant data and information; without their help, this study could not have been realized. I would also like to thank my colleagues at the *Danish Centre for Studies in Research and Research Policy* (henceforth CFA), whose expertise and collegiate support have made the last three years both interesting and rewarding. My supervisor, Evanthia Kalpazidou Schmidt and co-supervisor, Ebbe K. Graversen, deserve special thanks. Your persistent support, guidance, advice, encouragement, and candid and critical comments have been indispensable. Moreover, I am greatly obliged to the Centre Director at CFA, Niels Mejlgaard, who encouraged me to pursue a research career at a critical point in my life. My gratitude also extends to my office-mate Tine Ravn, whose sociological imagination, thoughtful suggestions and continued engagement with my work has kept my spirits high.

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¹ Visit <http://www.projectstages.it/index.php/en/> for more information on STAGES.

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In 2014, I was fortunate to spend five months at the *Center for Gender in Organizations* at Simmons College in Boston, MA. I am grateful for their gracious invitation to let me be a part of their inspiring and dynamic research environment. I am also indebted to Lotte Bailyn, Robyn J. Ely, and Michelé Lamont for inspiring and beneficial discussions that helped me sharpen and clarify my research ideas and arguments during my stay in Boston. Particularly, I am grateful to Kathrin Zippel, whose insights and expertise in the field has not only been of great help in my research, but also guided me in terms of where to look and who to go to in the Bostonian academic landscape.

Likewise, I am grateful to the Centre for Feminist Social Studies at Örebro University, for providing the perfect environment for me to refine and streamline the final draft of my dissertation. Special thanks are owed to Liisa Husu for making my visit at Örebro possible and for contributing with insights and comments of vital importance during the final stage of my study.

Last but not least, a very special thanks to my family, Amalie, Ida, Lisbeth, Jes, Birthe, Marius and my partner Mina for your patience and support.

The revolving door

Every year, in the beginning of September, thousands of hopeful new students enter the main building of Aarhus University's faculty of Arts to pursue a career in humanities. As they go through the entrance, their eyes will meet a glass mural by the Danish artist, Niels Winkel, depicting the (until now) thirteen Danish (male) scientific Nobel laureates – and a silhouette of a naked woman. The enormous piece of art, presented under the title “Pro utilitate humani generis” not only pays homage to the most renowned scientific breakthroughs to come out of Denmark, it also stands out as a historical manifestation of a scientific profession dominated by men.

As the adage goes “a picture is worth a thousand words”, and while approximately 60% of the new students entering the corridors of Aarhus University are women, less than one third of the senior faculty offices will have a woman's name on the door. The revolving doors channeling students into (and out of) a potential future academic career are, in other words, gendered (Jacobs, 1989; cf. Smith-Doerr, 2004).

Over the course of the last three decades, Europe has experienced a significant increase in the number of women undertaking an academic education. According to the latest numbers, female university students outnumber their male fellows by almost 60% to 40% and, on average, achieve better grades as well. Their presence at the upper ranks of the research profession is, however, still scarce. Merely 20% of the European full professors and 37% of the associate professors are women (European Commission, 2011a; 2013a).

Historically, researchers subscribing to the so-called “supply-side approach” have interpreted the unequal gender distributions in the sciences² as a result of a time lag between women's access to higher education and the replacement of existing university faculty. The structural imbalances – so the argument goes – will eventually be equalized, when older male researchers retire and younger women take over their positions. Several empirical studies have, however, challenged this assumption (Fox, 2001; NAS, 2007; Sala &

² In this dissertation I use the terms “science” and “academia” synonymously. “Science” is here understood in its broadest sense covering also the social sciences and humanities.

Bosisio, 2007). Henningsen (2003), for instance, shows that while the Danish share of female university graduates increased from 28% to 45% between 1979 and 1996, women's representation among associate and full professors merely rose by four and two percentage points (respectively) during the same period of time. This lead her to conclude that if no political actions were taken, Denmark would have to wait 246 years for gender parity (Henningsen, 2002). As noted by Etzkowitz et al. (2000), the problem of the supply-side argument is that it fails to address the demand side of academic advancement (i.e. the research organization as a context for recruitment, promotion and retention), and thus overlooks how structural and cultural conditions influence the career progression of women and men differently.

Molehills and mountains

In 1968, Robert K. Merton coined the principle of the *cumulative advantage* to describe how eminent scientists³ that gain small advantages early in their careers are able to transform these advantages into disproportionately greater scientific credit and prominence (i.e. citations, grants, promotion) in the long run (Merton, 1968). Cole & Singer (1991) employ the reverse principle of the cumulative disadvantage to explain how issues of gender affect academic promotion and success. They point to a number of positive and negative “kicks” that will either boost or set back a researcher's career; and accordingly women are experiencing more negative kicks than their male colleagues. As Virginia Valian notes, “mountains are molehills, piled on top of each other” (Valian, 1999a p. 4-5). By this she means that the small negative kicks or set-backs that women experience will add up over time and become cumulative disadvantages.

This dissertation is about the complex myriad of “molehills” slowing down women's advancement and keeping them from gaining the same organizational status as their male colleagues. It is also about understanding and explaining how gender relations are reconstituted in a rapidly changing academic context characterized by increasing demands for international competitiveness, innovation, flexibility and accountability. A development of particular interest in this regard, is the increasing rhetorical emphasis at both university and national level on the importance of retaining and recruiting the very ‘best’ research talents. This policy focus raises fundamental ques-

³ The terms researchers, academics and scientists are used synonymously throughout the dissertation. Included in this group are PhD students and researchers at scientific levels equivalent to the postdoc, associate professor and full professor level.

tions about what a “research talent” is, how it is defined and identified, and to what extent the prevailing notions of such a talent intermingles with ideas about gender. Moreover, this study is about illuminating and understanding the characteristics of the Danish case of gender equality in academia in a comparative context of the other Scandinavian countries, which despite many similarities regarding culture, welfare systems, family-friendly policies and universal breadwinner models differ in substantial ways when it comes to public, political and academic approaches to and perceptions of gender equality.

The thesis employs a case study approach adopting a critical realist pluralist methodology moving from the concrete empirical phenomenon of the unequal gender distributions at Aarhus University in Denmark, towards the generative mechanisms producing this pattern. Since unequal outcomes in the career advancement of male and female academics is a complex and multifaceted phenomenon determined by numerous macro, meso and micro-level factors,⁴ it is crucial to employ an integrated, holistic approach addressing the problem from different viewpoints and angles. The main research questions, presented below, will be operationalized into four sub-questions in Chapter 2. Each of these addresses a pertinent aspect of the problem in focus.

1. How can we understand and explain women’s persistent underrepresentation at the upper levels of academia?
2. How are issues of gender equality reconstituted in a rapidly changing Danish academic landscape?

Outline of the dissertation

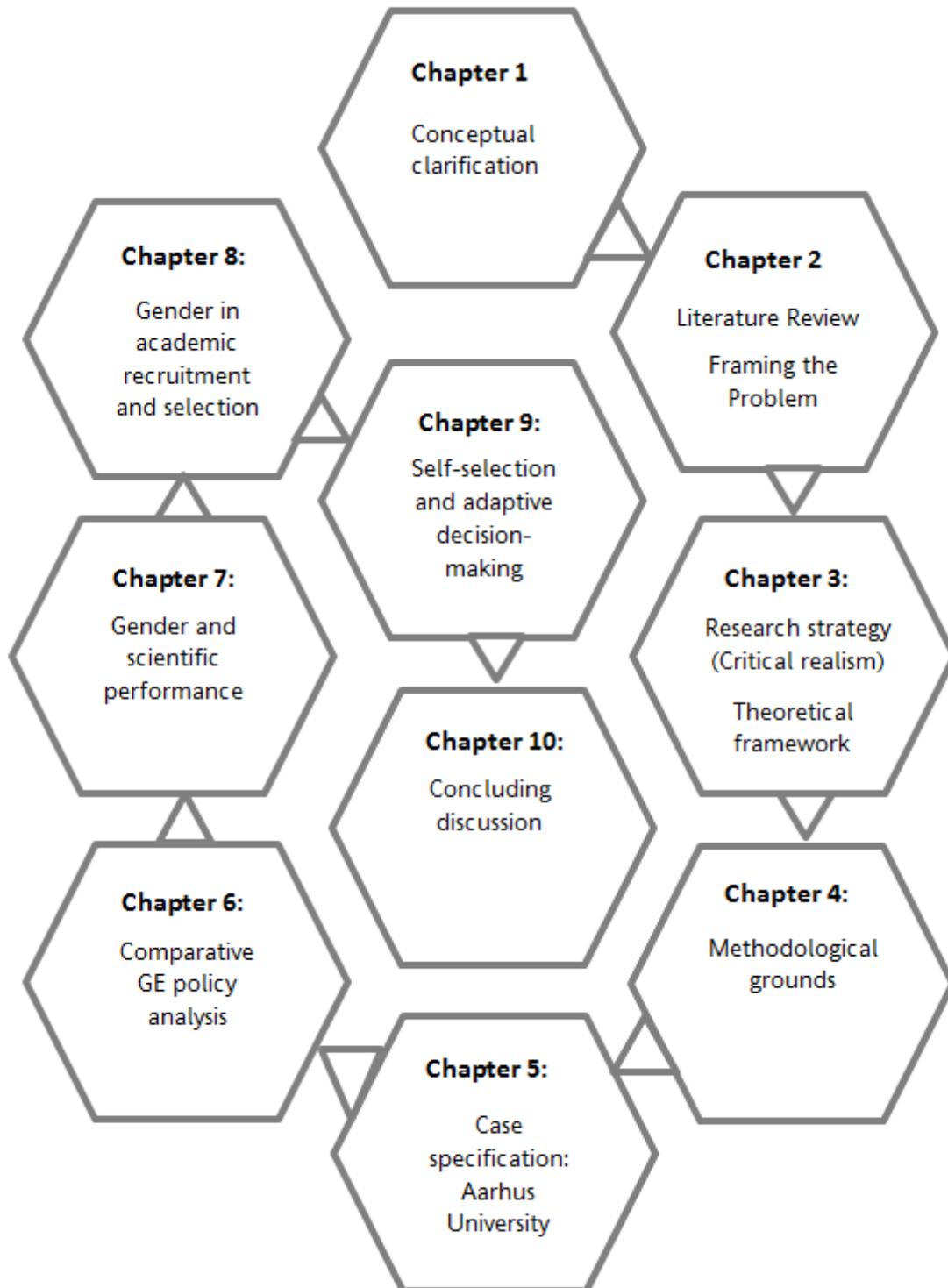
The dissertation is written in an integrated paper-format (also called a compilation thesis) consisting of altogether nine chapters and seven scholarly papers. In an attempt to ensure a thread of consistency, while also maintaining some of the qualities of the monograph dissertation form, the seven scholarly papers will be embedded in four empirical chapters each address-

⁴ The terms micro, meso and macro level refer to differentiated levels of analysis. In this study, the macro level accounts for the collective and large-scale features of social systems, the meso level refers to organizational processes and practices, while the micro level focuses attention on lived experience and the everyday lives of academics (more on this in Chapter 3).

ing one of the four sub-questions outlined in Chapter 2. Figure 1 visualizes the chronological structure of the dissertation.

Chapter 1 describes and discusses how the basic concepts of gender and gender equality are understood and employed throughout the dissertation, and reflects on the central arguments for promoting gender equality in academia. Chapter 2 provides an overview of the existing literature on gender inequality in research, and elaborates on the main research problem and its four sub-questions. Chapter 3 introduces the critical realist research strategy and accounts for the theoretical framework employed throughout the dissertation. Chapter 4 reflects on the study's pluralist methodology and multilevel analytical design and accounts for issues of case selection and data collection. Chapter 5 describes the central characteristics of the case (i.e. Aarhus University) and its context. Chapter 6 sets out to 'unpack' and contextualize the strategies for governing and promoting issues of gender equality at Aarhus University, by investigating these in a larger comparative policy framework of altogether six Scandinavian universities (two Danish, two Swedish and two Norwegian). Chapter 7 investigates the gendered implications of the expanding use of quantitative performance measures in the assessment of scientific outcomes in academia. Chapter 8 places particular emphasis on the unresolved question of how highly formal procedures related to recruitment and selection allow space for mobilizing liminal gender networking practices. Chapter 9 sheds light on the particular question of why a disproportionate share early career researchers are leaving Aarhus University without even applying for tenure. More specifically, this part of the dissertation sets out to investigate the complex ways in which correspondences between structural constraints and personal strivings circumscribe the career choices younger female academics. Finally, Chapter 10 concludes by drawing together the central findings and reflecting on the overall contribution of the dissertation. Furthermore, it reflects on emerging questions for future research and discusses the policy implications of the study.

Figure 1. Dissertation outline



Chapter 1.

Gender and gender equality in academia: conceptual clarifications

Both “gender” and “gender equality” can be viewed as essentially contested notions. They represent a diversity of meanings and are framed in a multiplicity of ways for context-dependent purposes and goals (Lombardo, Meier & Verloo, 2009, p. 7). A research focus on gender equality in academia therefore also requires some introductory reflections of what is actually meant by these terms and the way in which they are used. This chapter provides such a conceptual clarification. Moreover it offers a framework for understanding the prevailing arguments for promoting gender equality in research.

1.1. Notions of gender

“Gender” is a highly contested concept in the social sciences. It is accompanied by a wide range of different meanings and definitions dependent on matters of epistemological and ontological stance. It is a socio-cultural phenomenon, characterized by a variety of practices, languages and logics, perceived differently in varying contexts and periods of time (Alvesson & Billing, 1997, p. 9-10).

Since its first introduction in the 1970s as an effort to distinguish culturally and constructed forms of masculinity and femininity from the physiological and anatomical features of the biological sex (Schiebinger, 1999, p. 16), the interpretation, value and use of the gender notion have been the object of much debate. While third wave feminists, in the tradition of poststructuralist philosopher Judith Butler (1995), have suggested that we should deconstruct or even *undo* the existing connotations of gender in order to overcome the concept’s alliance with persisting forms of hegemonic heteronormativity, other scholars (see for instance Mitchell, 2004) claim that the shift in focus from “women” to “gender” entails a dangerous move towards a de-politization of women’s issues (Cf. Jalušič, 2009, p. 53).

Despite ongoing ontological and epistemological debates, the gender notion is at present still “a common denominator for the processes, mechanisms, and experiences that locate/fix us as gendered beings within certain norms, structures, discourses and pressures that we are exposed to as social beings” (Jalušič, 2009 p. 54). In line with Iris Marion Young (2005), one might

thus contend that “gender”, despite its inadequate capability to grasp the multifaceted layers of individual subjectivity, still constitutes an important conceptual tool enabling us to theorize about political and social structures of constraint through a “gender lens” (Cf. Jalušič, 2009, p. 54).

While Butlerian feminists have rightly exposed the fluid nature of gender categories and underlined the importance of overcoming tacitly presupposed reductionist and essentialist approaches to the topic (Davies & Thomas, 2002), their strong analytical emphasis on discursive processes and their adherence to the performative dimension of signification, at the same time risks losing sight of the material and institutional conditions and structures forming and perpetuating gender inequalities (Fraser, 1995; Gunnarsson, 2011). Put differently, deconstructivist and poststructuralist approaches have provided useful starting points for understanding how gender identities are constituted through formations of power and discourse, but they do not take us far in addressing the distributive inequalities of existing power formations and how to change them. Commenting on the persistent disagreements in the feminist literature, Nancy Fraser notes:

It follows that deconstructive critique that dereifies or unfreezes identity is the privileged mode of feminist theorizing, whereas normative, reconstructive critique is normalizing and oppressive. But this view is far too one-sided to meet the full needs of a liberatory politics. Feminists *do* need to make normative judgments and to offer emancipatory alternatives. We are not for ‘anything goes’. Moreover, it is arguable that the current proliferation of identity-dereifying, fungible, commodified images and significations constitutes as great threat to women’s liberation as do fixed, fundamentalist identities (...) Feminists need both deconstruction *and* reconstruction, destabilization of meaning *and* projection of utopian hope (Fraser, 1995, p. 71).

As illustrated in the quote, Fraser challenges what she considers to be the false antithesis between critical theory-driven approaches (e.g., Benhabib, 1995) and poststructuralist approaches to feminism (e.g., Butler, 1995) with the aim of preserving “the best elements of each paradigm, thereby helping to prepare the ground for their fruitful integration in feminist theorizing” (Fraser 1995, p. 61). More specifically, she calls for an eclectic spirit in feminism under the rubric of “neopragmatism” allowing feminists to combine analysis of how cultural meanings of gender are produced with institutionally and structurally grounded investigations of inequalities. According to Fraser and Nicholson (1989), generalizing claims about “women” at the current stages of feminist theory are therefore also inescapable. However, such claims should always be subject to revisions through nonfoundational and fallibilis-

tic reasoning (Fraser, 1995). Marion Young also makes a case for maintaining some idea of “womanhood” in feminist theory. She states that “without some sense in which ‘woman’ is the name of a social collective, there is nothing specific about feminist politics” (1994, 714; Cf. Gunnarsson, 2011, p. 24). This view is further supported by the critical realist feminist Gunnarsson (2011, p. 29), who notes that: “whether one believes that a world without sex/gender is possible or not, it is still a fact that women and men exist as categories pervasively structuring the world”. With a clear ambition of challenging the post-structuralist feminist project’s dismissal of “women” as a collective category, she highlights the crucial importance of accounting for “the material relation between a woman’s life and her structural gender position” (Gunnarsson, 2011, p. 34). The central contribution in Gunnarsson’s work lies in her theoretical ambition to overcome essentialist and homogenizing gender categorizations, while still maintaining some concept of women at a higher level of abstraction. As she puts it:

If we acknowledge that abstract concepts, such as ‘women’, are qualitatively different from lived reality, we can seek to use them effectively without any expectation that they will correspond to this lived reality in any clear-cut sense (Gunnarsson 2011, p. 32).

This leads her to conclude that while the concept “women” does not account for all aspects of reality it serves as an important category for addressing the differentiated structural positions of women and men in the social world, which makes the male/female distinction a necessary dichotomy “if we are to make sense of – and effectively change – the world” (Gunnarsson 2011, p. 30).

Inspired by these arguments, I intend to maintain the concept of “women” in my investigations of gender inequality in academia. By doing so, I do not imply that the world should be understood in terms of “an authentic female subjectivity, fixed and unified” (Davies & Thomas, 2002, p. 392). Yet, following Davies and Thomas (2002), it is my view, that in a university system “where gender difference and asymmetrical power relations are material and often the basis for inequality” (2002, p. 392), it is necessary to maintain this conceptualization and interpret the world through a gender lens (more on this below).

1.1.1. Beyond conceptions of essentialism and anti-essentialism

As will be discussed in Chapter 3, this project is founded on a critical realist tradition of social science thinking, which apprehends both social structures (i.e. organizations, institutions, mechanisms etc.), and the meanings attributed by actors to their situations, as pivotal to the explanation of social events (Ackroyd & Fleetwood, 2000). But how does this approach position itself in relation to the aforementioned ontological contestations over the use and understanding of the notions of gender and women in social research, and what are the epistemological implications of a critical realist approach to the investigation of gender issues?

In line with Sayer (2000a), I regard some elements in the social world as having essences while others, such as gender and identity, do not. While some types of essentializing assumptions can be viewed as dangerous and extremely problematic, others constitute fundamental premises for a critical realist approach (Sayer, 2000a). According to Sayer:

... we need to get beyond the stark alternatives of essentialism and anti-essentialism and work with a richer ontology (...). (T)he 'all-out' kind of anti-essentialism is often justified by appealing to instances of the second kind of criticism; typically it is assumed that because, say gender and identity have no essence, nothing has an essence. While I agree with the premise of this argument, the conclusion does not follow from it. We could, for example, argue that gender has no essence but that minerals, species, contracts, bureaucracies or the game of football do (Sayer, 2000a, p. 82).

Sayer, therefore, agitates for a moderate type of essentialism based on the conviction that we as researchers should avoid insisting on a restrictive ontology which either refuses or accepts any kind of essentializing assumptions. Connell (1987), for instance, challenges the widespread doctrines of a "natural difference" underpinning a large share of the mainstream social scientific conclusions on issues of gender. According to her, there is a strong connection between societal practice (including gender) and biology. This, however, does not imply that the "biological make up of our bodies" (1987, p. 67) can be viewed as the essence of our gendered behavior. In other words, biological mechanisms should not be grasped as fundamental to the social mechanisms causing existing gender relations (cf. Danermark et al., 2002). Instead, social and biological mechanisms should be analyzed as complementary elements in the ongoing (re)production of social relations including issues of gender (Danermark et al., 2002).

From this we can imply that critical approaches aimed at challenging and revealing cases of “misplaced essentialism” (Sayer, 2000a), are quite compatible with the realist ontology. Against the backdrop of this discussion, the dissertation’s understanding of gender can now be further specified.

In line with Joan Acker (1992, p. 250), I see gender as:

... patterned, socially produced, distinctions between female and male, feminine and masculine. Gender is not something people are, in some inherent sense, although we may consciously think of ourselves in this way. Rather, for the individual and the collective it is a daily accomplishment (...) that occurs in the course of participation in work organizations as well as in many other locations and relations.

With clear reference to West and Zimmerman’s (1987) ethnomethodologically informed understanding of gender as something we “do” rather than something we “have”, Acker interprets gendered distinctions and patterns in organizations as expressions of socially acquired behaviours and attributes produced and reproduced in the everyday activities of organizational actors. To further quote West and Zimmerman (1987, p. 126), doing gender is an ongoing process involving “a complex of socially guided perceptual interactional, and micropolitical activities that cast particular pursuits as expressions of masculine and feminine ‘natures’”. In this regard it is relevant to note that such an assertion not necessarily implies that our biological makeup is without any importance whatsoever, but what follows is a shift in our attention from “matters internal to the individual” towards a “focus on interactional and, ultimately, institutional arenas” (West & Zimmerman, 1987, p. 126).

1.2. Political visions of gender equality

According to Walby (2005), the literature usually distinguishes between three different political visions of the gender equal society or organization. The first vision revolves around an ideal of “sameness”, which conceives gender equality as a matter of attaining equal opportunities and equal treatment. In a parallel typology, Judith Squires denotes this vision as a model of inclusion. According to her, those pursuing the “sameness strategy aspire to objectivity (whether cognitive or moral), conceive of people as autonomous, and espouse an equality politics (and are often labeled as liberal feminist)” (2005, p. 368). The vision of sameness (inclusion) is frequently criticized for its individualistic/elitist starting point and its inherent ambition of assimilating women to a pre-given set of masculinized norms and standards.

The second vision emphasizes “difference”. This, so called “reversal model”, which is often labeled as “radical feminist”, aspires to a practice of political recognition valuing women’s difference from the dominant male norm. As noted by Walby (2005, p. 326), “there are dilemmas in how to recognize difference, while avoiding the trap of essentialism”, and the vision of difference has also been criticized for promoting a fixed view of gender equality, which underestimates the many different ways of being a man and a woman (Walby 2005, p. 334; Jalušič, 2009). In order to overcome the weaknesses associated with the first two visions, a third vision – the transformative model of “displacement” – has been introduced. This vision employs a participatory strategy that aims to challenge and revise existing norms and standards gendering the social life by deconstructing structural as well as cultural conditions and questioning the gendered world itself (Squires, 2005; Jalušič, 2009).

As illustrated, gender equality, much like gender, is an essentially contested concept (Lombardo & Verloo 2009, p. 7). In this study, I have chosen a pragmatic and explorative “gender lens” approach relying on a conception of gender equality as a “three legged equality stool” (Booth & Bennett, 2002). I hereby acknowledge that the above-mentioned visions all work together to promote gender equality by: a) creating equal access to and opportunities of advancement in the research profession; b) recognizing the qualities and interests of both women and men; and c) revising and challenging the gendered norms and standards fostering unequal outcomes in terms of status and career advancement (Booth & Bennett, 2002).

The gender lens approach enriches the project by focusing attention on the differential impact of policies, practices and processes on the advancement of male and female academics. It questions the taken-for-granted assumptions underpinning organizational structures and cultures, and explores how (and why) certain styles and forms of academic work and certain ideas about the researcher become privileged in shaping the distribution of opportunities and rewards, while others do not (Meyerson & Kolb, 2007; Bailyn, 2011; Merrill-Sands et al., 1999).

When we, as scholars, engage in research on gender equality, we do not merely shed light on the complex and contradictory issues of gender. We also intervene in the negotiation of how the term is understood and hereby take part in the (re)constitution of gender relations in everyday workplace situations. The study at hand may, in this sense, have political implications, since it contributes to the on-going local, national and international discussions about how to shape and organize modern academic institutions (Alvesson & Billing, 1997, p. 4, pp. 9-12).

Different approaches to the topic of gender inequality self-evidently suggest different explanations on the persistence of the problem. By integrating different theories, concepts, ideas and vocabularies, I intend to broaden the interpretive repertoire when approaching the empirical phenomena. As returned to in Chapter 3, I hereby aim to produce a reflective and open-minded analytical approach emphasizing points and perspectives which also support other kinds of interpretations than the gender related ones (Alvesson & Billing, 1997).

1.3. Why gender equality in research matters

Scholars have for long pointed to various reasons for promoting gender equality in academia. Yet, the academic and public gender equality debate is still characterized by skeptical attitudes. In Denmark, for instance, it is still legitimate to question whether universities should work actively to promote the advancement of women academics or leave it to the “natural selection” of an allegedly “gender blind” meritocratic system to regulate the promotion and recruitment of academic staff (see Chapter 8, Paper 6).

In order to substantiate the fundamental premises underlying this thesis, I have chosen to highlight a number of central arguments for promoting gender equality in academia. The first argument draws on Nancy Fraser’s theoretical understanding of social justice. In a 2004 interview she states:

For me theory of justice cannot, and should not, provide a comprehensive account of the overall goodness or badness of society. Rather, it should allow us to evaluate social arrangements from the perspective of one limited, but extremely important angle: how fair or unfair are the terms of interaction that are institutionalized in the society? Does the society’s structural-institutional framework, which sets the ground rules for social interaction, permit all to participate as peers in social interaction? Or does it institutionalize patterns of advantage and disadvantage that systematically prevent some people from participating on terms of parity? (...) In my view, then, justice pertains by definition to social structures and institutional frameworks. It follows that individual problems become matters of justice if and when they cumulate into a pattern that can be traced to a systemic cause. When that happens, it becomes clear that what previously looked like the personal problems of isolated individuals are actually injustices rooted in structural features of society (Fraser as cited in Dahl, Stoltz & Willig 2004, p. 378).

In view of the existing literature on gender equality in science (introduced in Chapter 2), which illustrates a complex myriad of obstacles and cumulative disadvantages keeping women researchers from advancing at the same

rates as their male colleagues, gender inequality in the academy has often been interpreted as an issue of justice. Following Fraser's argument, the promotion of gender equality becomes a matter changing the injustices rooted in the structural features, which points to the question of cumulative and marginal kicks disadvantages mentioned in the introductory chapter.

Another prevalent argument concerns the democratic representation of women in public research and innovation. One part of this argument revolves around the idea that women's underrepresentation in science inevitably means that their views and opinions are less likely to be taken into account in the development of scientific knowledge with crucial implications for society in general. Reflecting on this particular issue, the American sociologist, Mary Frank Fox notes:

[S]cience is an institutional medium of power, with consequences for the present and future human condition (...). It defines what is 'taken for granted by literally billions of people (...), and to be in control of science is to be in control of the future (...)' (Fox 2001, p. 655).

In line with these sentiments, scholars have also raised concerns about the consequences of women's underrepresentation for the social processes through which scientific knowledge is shaped. High status (male) researchers usually take the lead in identifying, planning and developing new major research topics and questions, and this may implicate that societies – due to a lack of women in science – lose out on important knowledge production adhering to topics and questions falling outside the interests of a relatively homogeneous group of privileged white middle-aged men (Brouns, 2007).

This leads us to the third argument for promoting gender equality in university settings, which focuses on the gender dimension in how scientific research is planned, designed and conducted. The "Gendered Innovation Project", directed by Stanford Professor Londa Schiebinger, draws attention to the existing issues of gender bias characterizing a great deal of contemporary research within the academic fields of Natural Science and Health. As stated on the project's website, it seeks to "stimulate the creation of gender-responsible science and technology, thereby enhancing the quality of life for both women and men worldwide". In order to illustrate the ways in which an increased focus on sex and gender analysis affects the development of new knowledge and technologies, Schiebinger and her colleagues provide a number of illustrative empirical examples of "gendered innovations" (see for instance Schiebinger & Schraudner, 2011). One of the clearest and most famous examples concerns the medical condition cardiovascular disease, which is the leading cause of death for women in many countries across the

world. Surprisingly, the existing clinical standards and treatments of cardiovascular disease have been developed merely for men with crucial consequences for women's diagnosis and treatment. Schiebinger & Schraudner (2011, p. 162) note:

In the case of cardiovascular disease, myocardial infarction or 'heart attack' symptoms were modelled in men and the results generalized to the entire population. Symptoms, however, can differ between men and women. Men typically experience pain in the chest and left arm. Women often experience chest pain along with a series of less recognized symptoms, such as nausea and vomiting, pain in the right arm and back, fatigue, cold sweat, and dizziness. Because women's symptoms do not match 'standard' (male) symptoms of myocardial infarction, women are often misdiagnosed and improperly treated.

While there are no guarantees that an increased representation of women among research leaders will necessarily lead to more reflective and gender-responsible research, a number of studies lend to support to the argument by citing evidence of variations in the research interests and approaches of women and men (see, e.g. Rhoten & Pfirman, 2007; Schiebinger, 1999; Sonnert & Holton 1996; Van Rijnsoever & Hessels, 2011; Van der Weijden et al., 2014) (more on this in Chapter 7). As noted by Pollitzer (2011a, p. 37), "[b]etter understanding why, when and how differences between females and males really matter can open up fresh opportunities to create new markets for scientific knowledge" and as illustrated in the following, gender-responsible research has also become an important argument in the European Union's work to commit its member states to engage in actions promoting women's status in the sciences.

1.4. Gender equality in a European perspective

Over the last 60 years, the European Union has consistently emphasized gender equality as a core policy priority. Since its introduction in the ECC Rome treaty, signed in 1957, 13 gender equality-related directives have been adopted by the Commission, and in the wake of the 1999 Amsterdam treaty, the particular issue of women's representation in science and research has also gained prominence.

The ETAN-report published by the European Commission in 2000, was one of the very first cross-country analyses to raise concerns about the low representation of women at the higher levels of the European research profession. At that point women occupied merely 10% of full professor positions in most scientific fields, which led the ETAN-group to highlight the necessity

of moving beyond legal stipulations and introduce comprehensive “gender mainstreaming”⁵ measures into the science systems (European Commission, 2000). As noted by Pollitzer (2011b, p. 51), “[t]his strategy has [however] not produced the results hoped for. In particular, it has failed to convince science leadership of the value of the gender mainstreaming objectives.” The motivational basis underpinning the European Union’s early efforts to gender-mainstream science (i.e. a double-edged policy-focus emphasizing the societal and organizational benefits of utilizing the whole talent pool in a globalized and competitive R&I economy and promoting social justice and democratic rights to ensure and sustain the societal support for science and its institutions) (European Commission, 2010a; European Commission, 2011b), has, in other words, not provided sufficient motivations for European science leadership to take the necessary and sufficient steps to overcome gender inequality in universities and other research institutions.

However, recent transitions in the strategic approaches to the problem, as presented below, provide new arguments for a further commitment of national policy makers and research managers.

1.4.1. EU-level Action through Framework Programmes

As illustrated in Figure 2, the focus and scope of the European Union’s approaches to the promotion of gender equality has undergone several transitions since its first introduction as part of the 5th Framework Programme for Research in 1999. The prevailing approach during the early 2000’s, sought to support and increase women’s participation in the sciences by providing supplemental education and research training, extra research money, and mentoring networks for women to make them more competitive in a male-dominated world of science. As noted by Schiebinger and Klinge (2010), this approach, while critically important, has been criticized for its focus on “fixing the women”, while leaving issues related to the discriminative organizational features of scientific institutions more or less unattended.

During the course of the 6th and 7th Framework Programme, a shift was made towards the so-called “fixing the institutions” approach, which aims at transforming structural and cultural features of universities and research organizations to make them more inclusive and compatible with the particular needs of women researchers. This approach, while clearly increasing the ef-

⁵ As noted by Rees (2002, p. 6) “Gender mainstreaming is the systematic integration of gender equality into all policies and programmes, and into organizations and their cultures.”

ficacy and impact of gender mainstreaming as a means to remove the institutional barriers to women's advancement, fails to address the gender dimension in how scientific research is planned, designed and conducted. As noted by Schiebinger and Klinge (2010, p. 156-157), the fixing the institutions approach "focuses on restructuring institutions while assuming that what goes on inside institutions – research and knowledge production – is gender neutral. Restructuring institutions is important but must be supplemented by efforts to eliminate gender bias from research and design". During the course of the 7th Framework programme, this has led to the introduction of the aforementioned fixing the knowledge approach with an increased focus on how the gender dimension in research and innovation content can be promoted by integrating sex and gender analysis into research (European Commission, 2012b). Stanford University's "Gendered Innovation Project" and the influential EUFP7 project "genSET" have provided substantial empirical evidence supporting the "fixing the knowledge" approach, thus supplying European policymakers and science leadership with new motivations for engaging in the promotion of women in science. By supplementing the aforementioned human capital and social justice arguments with concerns regarding the underutilized innovation and market opportunities caused by the persistent gender disparities in the sciences, the overall strategy and motivation for promoting gender diversity in the European scientific systems, in this sense, has moved towards a "fixing the problems" approach. As outlined in the quote below from the European Commission's Horizon 2020 document, this is an approach which emphasizes the question of how the gender dimension can promote innovation and research quality.

The activities developed under Horizon 2020 should promote equality between women and men in research and innovation (...) by integrating the gender dimension into the research and innovation content (...) in order to improve the quality of research and to stimulate innovation (European Commission 2014, p. 7).

Figure 2. European Union-level action through framework programmes

FP5 → H2020

Fixing women	Fixing institutions	Fixing knowledge	Fixing problems
Interventions to help women fit in better into the existing world of science	How institutions improve their processes and practices to ensure men and women are treated equally	How research can improve science knowledge-making through integration of gender/sex analysis into the research process	How integration of the gender dimension can improve innovation and collective capability to achieve technological change and human wellbeing (Horizon, 2020)

Source: Based on Pollitzer, 2012.

1.4.2. From institutions to problems and back again

While the European Union’s focus on gender equality, as illustrated in Figure 2, is moving towards a fixing the problems approach with a clear ambition of illustrating how women’s representation in science can trigger technological change and contribute to the enhancement of human well-being, the fixing the institutions framework has not been rendered unnecessary; rather, the opposite appears to be the case. As I shall illustrate in this dissertation, a rapidly changing research sector characterized by comprehensive managerial reforms and increasing demands for international competitiveness, innovation, flexibility and accountability may produce new sentiments for universities and countries to engage in issues of gender equality in science. It may, however, simultaneously reconstitute prevailing gender relations in academic settings and produce new challenges to women’s advancement and status as academics (more on this in the following chapter). In this sense, it is of crucial importance that the current shift towards a focus on gender equality/diversity as a means to improve research quality and stimulate innovation (i.e. fixing the problems), is supplemented with a persistent ambition to investigate how the research system’s changing structural and cultural conditions influence the career progression of women and men differently (i.e. fixing the system). As noted in the preface of this dissertation, my work unfolds within the framework of (and is partly funded by) the EU-FP7 project STAGES and in this sense relates directly to the European Union’s abovementioned fixing the institutions approach.

1.5. Gender, race and ethnicity

Before proceeding to account for some of the most central findings and contributions of the existing literature on gender equality in higher education and research, it is important to highlight a central shortcoming of the European Union's current activities on the topic. As is the case in other areas of European gender equality policy-making, the framework for promoting gender equality in research has a tendency of representing 'women' as a relatively homogeneous social category with no clear references to intersecting⁶ social categories such as class, race and ethnicity (Lombardo & Meier, 2008). And while the commission, as outlined above, has made particular efforts to promote women's advancement in research, issues of race and ethnicity have been (and still are) left more or less unnoticed. In view of Europe's long tradition of colonialization (including Great Britain, Portugal, Spain, France, the Netherlands and Denmark) and the relatively diverse ethnic and racial composition of the EU member states, this seems rather surprising; especially given the fact that the European Union since the Treaty of Amsterdam in 1999 has expanded its legal responsibilities with regard to equality to cover other areas than gender (including race and ethnicity) (Treaty of Amsterdam, Article 13; cf. Vega, Lombardo & Augustin, 2008).

Researchers in the tradition(s) of intersectional feminism have for many years pointed to the crucial importance of accounting for "intragroup differences" such as race and ethnicity when addressing issues of gender equality and discrimination. In a renowned 1989 paper Kimberlé Williams Crenshaw notes:

Although racism and sexism readily intersect in the lives of real people, they seldom do in feminist and antiracist practices. And so, when the practices expound identity as woman or person of color as an either/or proposition, they relegate the identity of women of color to a location that resists telling (Crenshaw, 1989, p. 1242)

In line with Crenshaw, one may argue that the European Union, as a result of its persistent focus on a general and broad notion of "women", risks ignoring aspects of women's underrepresentation in the sciences, which cannot be captured solely through a gender lens.

⁶ By "intersecting", I here refer to the feminist literature on intersectionality, which addresses "relationships among multiple dimensions and modalities of social relations and subject formations" (McCall 2005, p. 1771).

While this dissertation, as a result of its anchoring in the EU FP7 project STAGES, does not directly address the question of how issues of gender intersect with other social categories in the perpetuation of inequalities, one must be aware of the potential pitfalls and limitations of the gender-centered approach. However, as I intend to illustrate in the following chapters, particular emphasis on gender may sometimes provide opportunities to uncover overriding social patterns and regularities that would have been difficult to address on the basis of more intersectionality-driven approaches. A practical argument for maintaining the gender-specific focus is that the relevant quantitative data sources used in the analyses of gender equality issues in academia rarely includes information on other modalities or social categories such as race, nationality, ethnicity, class background etc. In this regard, I also find it relevant to highlight Gunnarsson's (2011, p. 33) assertion that although intersectionalist theorists have rightly exposed that "women and men are more than women and men, they are still women and men". By this she means that individuals belonging to this group or category "are intrinsically tied to a common position in a materially (and discursively) constituted gender structure" (Ibid, p. 33).

1.6. Wrapping up

In Chapter 1 I have described and discussed my understanding and use of the central concepts of gender and gender equality. I have argued that the concept of gender, despite its theoretical inadequacies still constitutes an important conceptual tool for investigating social structures of constraint in academic settings. Furthermore, I have contended that in a scientific system defined by persistent gender-based inequalities, it seems necessary to maintain some generalized category of "women". I have also introduced the pragmatic approach to the concept of gender equality employed throughout the thesis and described the gender lens approach, which constitutes the analytical starting point for my empirical investigations. In addition, I have accounted for the dissertation's overall adherence to the European Union's fixing the institutions perspective and highlighted three central arguments for putting gender equality in research on the agenda. The following chapter outlines the main findings and ideas of the existing literature on gender inequality in research and specifies the research focus and objectives of the dissertation.

Chapter 2.

Framing the problem: literature review and specification of focus

In 1885, Denmark's first female university student, Nielsine Nielsen, received her final diploma of doctor of medicine. Her autobiography (Nielsen, 1941) provides a powerful insight into the life of a young determined woman facing infinite obstacles in a medical system that disregarded her academic potential and did its best to keep her from the inner circles of the profession. In 1985, exactly 100 years after Nielsen's final examination, Denmark employed its very first woman professor in medicine (Rosenbeck, 2014). At this point in time, it was no longer unusual to meet women students in the university corridors, but women were still the exception to the rule in the upper ranks of the academic hierarchy. Since then, much has transpired, and while gender biases may be less overt than they were 130 years ago, women academics are still facing challenges in reaching the upper ranks of the research profession. This chapter provides an introduction to the main findings and ideas of the existing literature on gender inequality in research and elaborates on how this project contributes to the field.

2.1. Gender and research: a review of the literature

A quite broadly accepted public explanation of the low representation of women academics at the highest position levels relies on the idea that women simply lack the qualifications and career-drive of their male colleagues (West and Lyon, 1995; Etzkowitz et al., 2000). A recent example of this (deficit) argument can be found in the former Harvard president Lawrence Summers's 2005 claim that, women's lower status in science is due to "issues of intrinsic aptitude, and particularly of the variability of aptitude, and that those considerations are reinforced by what are in fact lesser factors involving socialization and continuing discrimination" (Summers, 2005). As will be clear in the following pages, Summers' claim stands in clear contrast to most of the existing literature on the topic.

This section accounts for the main discussions of the literature with particular emphasis on the recent decades' advent of new organizational conditions and demands reinforcing the gendered power relations in academia.

Due to the dissertation's integrated paper format, I will also account for relevant aspects of the existing literature in each of the seven enclosed scholarly papers (Chapter 6, 7, 8, and 9). The following presentation should, in other words, not be seen as an attempt to fully cover the comprehensive body of literature on gender equality in higher education and research. Rather, the purpose is to provide an introduction to its different strands of research in order to illustrate the multiple perspectives on the topic. Existing overviews of studies on gender inequality in research, illustrate various ways of thematizing the literature (see, e.g. Caprile et al., 2012; NAS, 2007). This presentation will be structured as follows: First, I provide a brief introduction to the main barriers to women's academic advancement addressed in the existing international literature. Second, I draw attention to the Danish contributions on the topic, and third I discuss the emerging literature on how issues of gender equality are reconstituted in the wake of New Public Management-driven institutional university reforms. Finally, I reflect upon my own efforts to progress beyond the state of the art.

2.1.1. State of the art: an introduction to the literature

"Women in science: why so few?", Alice Rossi curiously queried in a conference presentation at the Massachusetts Institute of Technology in 1965 (Rossi, 1965; Etzkowitz et al., 2000). Today, 50 years later, her puzzling question is yet to be resolved. While the years since Rossi's – at the time – controversial question has yielded many important insights into our understanding of the gendering of academic careers (Van den Brink, 2010), it has at the same time become clear that the processes producing inequalities in the scientific system are both complex, multifactorial and context-dependent. In the following, I will account for the most common barriers to gender equality in science as described in the literature. The presentation will be divided into a number of subsections each accounting for particular aspects of the problem.

2.1.1.1. Feminist history and philosophy of science

Women have for long been part of the academic profession. However, as illustrated in the historical analyses of Rossiter (1982, 1995), in most cases with no scientific recognition, no rewards and no status to follow. Her recounts of early women scientists' careers in America convincingly illustrate the extraordinary obstacles facing this minority group in their struggles to contribute to the scientific development of their country. In 1993, Rossiter coined the term "the Matilda effect" to account for the systematic misrecog-

nition and denial of women's scientific contributions and breakthroughs. The term was developed as a corollary to Merton's "Matthew effect" describing the psychosocial processes through which "eminent scientists get disproportionately great credit for their contributions to science while relatively unknown scientists tend to get disproportionately little credit for comparable contributions" (Merton, 1968, p. 57). Rossiter (1993) provides several examples illustrating the parallel but reverse phenomenon of the Matilda effect. One of the most famous examples concerns:

... the crystallographer Rosalind Franklin, who died before her 'collaborators' (...) won the Nobel Prize in 1962, and whose essential contribution was then further minimized in the survivors' distorted autobiographical account of 'their' discovery (Rossiter, 1993, p. 329).

Schiebinger's (1999) historical analyzes of the interplay between science and gender add to the works of Rossiter by providing further illustrations of a scientific system permeated by implicit masculine norms. As she notes:

Unearthing assumptions surrounding gender in science helps unearth unspoken notions about who is a scientist and what science is all about and how these notions have historically clashed with expectations about women (Schiebinger, 1999, p. 69).

Feminist scientific pioneers such as Fausto-Sterling (2008), Keller (1995), and Harding (1986) have likewise made important contributions to our understanding of the subtle ways in which gendered norms influence and form research priorities, designs and interpretations of results in different scientific fields (Cf. Caprile et al., 2012). As McCall notes:

[These] feminist scholars (...) took their critique to a much deeper level. They began to question the very edifice of modern society—its founding philosophies, disciplines, categories, and concepts. All of the valued categories that fraternized on the male side of the modern male/female binary opposition became suspect for symbolizing and enacting the exclusion of women and femininity. In particular, the philosophical critique of modernity included a disciplinary critique of modern science and a methodological critique of the scientific method, its claims to objectivity and truth belied by the actual practice of science (McCall, 2005, p. 1776).

2.1.1.2. Gender schemas and double standards

Another influential strand of scholarship has focused attention on the subtle gender mechanisms influencing academic practices of evaluation. Drawing on experimental evidence from the social sciences, Valian (1999b), for instance, shows how implicit “gender schemas” (i.e. culturally imbedded ideas and assumptions about gender characteristics) operate to privilege men in academia by slightly undervaluing women’s qualifications and performance. Similarly, Foschi (2000) uses the term “double standards” to describe situations where “group members use status differences as the basis for double standards that disadvantage those in the devalued category” (Foschi, 2000, p. 25). As illustrated in her experimental work, a double standard is, for instance, activated along with the male/female dichotomy. Women are, in other words, held to a higher performance standard than their male counterparts.

Both Valian and Foschi’s contributions lend clear empirical support to Rossiter’s argument of the existence of a Matilda effect, and their theoretical assertions have been confirmed in several studies (see e.g. Moss-Racusin et al., 2012; Steinpreis et al., 1999). A renowned example concerns Wennerås and Wold’s (1997) investigation of the grant selection scheme of the Swedish Medical Research Council, showing that women needed 2.5 times more publications than their male colleagues to obtain grants. A similar study by Sonnert and Holton (1995), however, led to a different conclusion. They found that the average application of female applicants were evaluated more positively than that of their male counterparts, which as noted by Van den Brink (2010) illustrates that issues of gender bias in academic processes of evaluation are contingent on contextual factors such as type of grant, national context and scientific field. This point is further confirmed by the conflicting evidence of studies following in the wake of Wennerås and Wold’s groundbreaking work (see, e.g., Bornmann & Daniel, 2005; Ward & Donnelly, 1998; cf. Van den Brink, 2010).

2.1.1.3. Subtle and covert discrimination

A number of studies have also focused attention on the subtle and often unintended ways in which gender power relations are reproduced as “non-actionable discrimination” (Shapiro, 1982) in the everyday interactions of male and female researchers. On the basis of interviews and discussions with American university faculty Yenstch and Sinderman (1992) observe exclusion of women from informal networks; condescension in the form of “protection” of women from challenging scientific tasks; gender stereotyping (i.e. the

image of women as supportive, feminine in appearance and emotional); hostility and sexual innuendo, where women become objects of sexual rather than professional attention (Yenstch & Sinderman, 1992, p. 207-224; cf. Simińska & Zimmer, 2007).

Benokraitis and Feagin (1995) make a distinction between *blatant*, *subtle* and *covert* forms of employment discrimination. Blatant discrimination, following the authors' terminology, concerns "unequal and harmful treatment of women that is typically intentional, quite visible and easily documented" (Ibid, 1995, p. 39). Subtle forms of discrimination are less visible and obvious in their nature, and may in many cases not be considered discriminatory by those involved due to their entrenched status as a more or less acceptable and natural part of everyday social life (Husu, 2001, p. 57). Finally, covert discrimination refers to the "unequal and harmful treatment of women that is hidden, purposeful, and often maliciously motivated" (Benokraitis and Feagin, 1995, p. 42). As observed by Husu (2001), this form of discrimination is difficult to detect and tackle on the basis of legal means or bureaucratic rules because of its secretive nature.⁷

2.1.1.4. Socialization and Upbringing

A substantial body of research has also investigated how the aforementioned non-conscious assumptions about gender characteristics resulting from cultural socialization and upbringing operate to divert women away from (or towards) certain academic careers⁸ already from early childhood through the teenage years (see, e.g. Etzkowitz et al., 2000, p. 31-48; Sagebiel & Vázquez, 2010). Chambers (1983) "draw-a-scientist test" (DAST) constitutes an illustrative example of this. The test, which investigates children's perceptions of the scientist on the basis of drawings, has yielded substantial evidence indicating that gender stereotypical ideas about science arises from an early age (see also Finson, 2002; Fralick et al., 2008; Rahm & Charbonneau, 1997). As illustrated by Zwick & Renn (2000), guidance and advice from family and teachers clearly influence the educational choice of teenage boys and girls (cf. Caprile et al. 2012), and Jacobs & Eccles (1992) have shown that parents not only encourage and acknowledge sex-differences in behavior but also estimate their children's abilities differently (cf. Sagebiel & Vázquez, 2010). According to Jones and Wheatley (1990) mathematics and

⁷ For a more elaborate discussion on the relevance and applicability of Benokraitis and Feagin's (1995) three forms of discrimination in the context of higher education see Husu (2001, p. 56-64).

⁸ More on women's horizontal segregation across fields in Chapter 5.

science teachers more frequently encourage boys than girls to ask questions and give answers in their classes. This finding lends support to the assertion that subtle gender stereotypes may also operate in our elementary educational systems thus feeding into the career choices and academic interest of children and teenagers. Nosek et al. (2009), on the basis of an Implicit Association Tests completed by approximately 300,000 citizens of 34 countries, show that national differences in the prevalence of implicit gender stereotypes serve as an important factor in explaining math achievements of 8th grade boys and girls, thus illustrating the socially constructed and context-dependent nature of women's lower propensity for a career in the natural sciences. Similarly, a meta-study conducted by the National Academy of Sciences (NAS, 2007) finds no clear evidence of biologically determined cognitive differences between women and men regarding science and math performance, which further supports this argument. Likewise, Guiso et al. (2008), in a cross-national analysis of the PISA results from 2003, identify a statistical relationship between a country's overall performance on the World Economic Forum's Gender Gap Index (GGI), and the national gender gap in OECD PISA math scores. The gender gap in math performance in favour of boys, in other words, decreases when the national level of gender equality goes up (Guiso et al., 2008, p. 1164). Finally, Cook (2014), in a cross-national analysis of the 2012 PISA data, also challenges the idea of a universal gender gap in math scores by illustrating comprehensive variations across countries.

2.1.1.5. Family and Career

A comprehensive number of studies also focus attention on the institutional and extra-institutional constraints and obstacles facing many women over the course of their research career. A central theme in this strand of literature relates to the issue of family and career tensions. In an American study of approximately 8000 scientists' career trajectories, Shauman & Xie (1996) show that female parents tend to have lower career prospects and are less geographically mobile than their male colleagues with children, which leads them to conclude that "the careers of men benefit from marriage and parenthood, while the careers of women are impeded by family responsibilities" (Xie & Shauman, 2003, p. 152). Similarly, Mason and Goulden (2004, p. 141), on the basis of a longitudinal study investigating the career progression of more than 160,000 American PhD recipients across all disciplines, conclude that marriage and childbirth "accounts for the largest leaks of women in the academic pipeline" and that men with children early in their academ-

ic career are 38 percent more likely to achieve tenure than women in the same situation.

Several scholars have pointed to clashes between family responsibilities and the “gendered” structure of the academic career path, when explaining this overall trend (see, e.g., Knights & Richards, 2003; Probert, 2005). Bailyn (2003), for instance, asserts that the postdoctoral stage, which is epitomized by particularly high demands for scientific success, happens at an age where many researchers have children, which may especially disadvantage women due to high levels of family-career tensions. As noted in a report by the National Academy of Sciences (NAS, 2007, p. 4) 90% of the spouses of American “women science and engineering faculty are employed full-time; close to half the spouses of male faculty also work full time”.

This leads to another prevalent issue concerning scientific organizations’ lack of clear boundaries around time. Drawing on Coser’s (1974) concept of “greedy institutions”, Currie et al. (2000), describe an Australian academic work culture, where long work days are accepted as the norm, and successful researchers are expected to dedicate most of their lives to science. Similarly, Etzkowitz et al. (2000) depict a culture of presenteeism, where long-hour work days are positively interpreted, irrespective of how the working time is spent. This leads them to conclude that “male standards of behavior permeate scientific time and space, including a belief that a researcher is most productive when their time is devoted to investigation to the virtual exclusion of all other aspects of life” (2000, p. 26) (see also Bailyn, 2003; Davis, 2001). The job-insecurity characterizing the early stages of the academic career also appears to be crucial. As illustrated in an Australian study by Todd & Bird (2000, p. 7) “women academic’s employment is characterized by lower level appointments, greater incidence of insecure employment contracts and part-time work, and more career breaks”, with clear impact on their competitiveness in the academic system (see also Wolfinger et al., 2009). In this regard, it is however important to emphasize that the literature on family and academic career progression emerging from Anglo Saxon academic settings cannot necessarily be applied in a Scandinavian context, due to structural differences between the countries with respect to family friendly policies and variations in academic career progression systems (More on this in Chapter 7, Paper 5).

2.1.1.6. Networking and social capital

Another prevalent explanation to women’s slow advancement relates to issues of networking and informal systems of social and professional support.

As Bagilhole and Goode (2001, p. 170) note, “Academia values reputation above all, which is heavily dependent upon integration into formal and informal networks”. Networks, in other words, play a key role in academic career advancement. They constitute the basis for exchanging resources and learning; provide insights into potential opportunities of career advancement; and increase career performance (Etzkowitz et al., 2000). As Caprile et al. (2012, p. 107) note, academic practices of networking, in this sense, can be viewed as the “social relations in which power spreads in concentric circles”. In a renowned study of American women’s advancement in Science and Technology, Etzkowitz et al. (2000, p. 124) suggests that “formal positions are only a rough indicator of success, since individuals of the same rank differ widely in the strength of their networks and their access to scientists with relevant knowledge”. Furthermore, their study depicts an academic culture that fails to provide adequate direction and mentoring for female researchers. More specifically, they show that women’s network ties are smaller and less diverse than that of their male colleagues, and that they lack the necessary motivational support and reassurance from co-workers. Likewise, Ledin et al. (2007), in a survey study of applicants for a prestigious European research grant within Molecular Biology, illustrate that women tend to receive considerably less professional support than their male colleagues in terms of mentoring and back-up from their supervisors.

In a Norwegian study, Kyvik (1991) provides evidence indicating that women lack the collaborative research network of their male colleagues with negative impact on their scientific productivity, while Sonnert and Holton (1995) similarly conclude that American women senior researchers are less likely than their male colleagues to engage in scientific collaborations. Husu (2000), in a study of appointment procedures for professorships in Finland, shows that women may be at a disadvantage in academic recruitment due to male networks and informal support systems, while Vazquez-Cupeiro and Elston (2006), and Vazquez-Cupeiro and Fernandez (2007), in their studies of academic career advancement in Spain point to the gendered implications of male academics’ stronger formal and informal network ties.

2.1.1.7. Gender in academic recruitment and selection

A few studies have also addressed the issue of gender in academic processes of recruitment and selection. Menniti and Cappellaro (2000) employ survival analysis techniques to measure the different factors influencing Italian associate professors’ advancement to full professorships (N approx. 1000) and show women’s likelihood of being appointed for grade A positions to be

considerably lower than men's when factors such as promotion age, disciplinary field and number of publications are taken into account. According to the authors, gender is in fact the main explanatory variable (cf. Caprile et al., 2012). In a similar study, Sabatier et al. (2006) combines statistical survival analysis and CV data to investigate varying factors influencing the pace of French academic's career advancement (N 583). They show that gender influences academic promotion through the effects of factors such as ability to obtain funding and experiences with research management. Husu's (2000) aforementioned study of appointments for full professorships (N 179) illustrates that Finnish women are at a notable disadvantage when recruitments are based on personal invitations, which at the time of the study were a frequently used hiring practice in Finland. Vazquez and Elston's (2006) study provides qualitative evidence depicting a Spanish academic system characterized by practices of inbreeding and pre-selection. Finally, Van Den Brink's (2010) PhD dissertation provides a thorough and systematic analysis of the subtle gender practices underpinning procedures related to the appointment of full professors in the Netherlands. Her results show that more than half of the professorial recruitments at Dutch universities take place under closed procedures, which reduces accountability and transparency in the appointment process resulting in various gender effects. Moreover "gatekeepers deliberately lobby or construct new positions, framing the profile to suit a particular candidate and resisting or undermining the policy measures of administrative staff" (Ibid., p. 229).

2.1.1.8. Masculinities in academic settings

As noted by Hearn (2004), the existing literature on gender in research organizations has had a tendency of conflating "gender" and "women", leading him to call for more endeavors to investigate "the specific and different ways in which men exist as and in gendered power relations, including power relations with women (...) and each other" (Hearn 2004, p. 58). Among the few studies specifically addressing men's role in the production and reproduction of inequalities in the academy, we find Martin's (1996) work on the mobilization of masculinities and its marginalizing effects on women in US academic settings. She illustrates the various ways in which masculinities comes to operate in promotion processes, requests for paternalistic aid, as well as criticism and ganging up on female colleagues (cf. Hearn, 1999). The concept of "mobilizing masculinities" has also recently been unfolded by Van den Brink and Benschop (2014) in their study on network practices in academic recruitment and selection processes in the Netherlands. They show

how liminal enactments of masculinities influence who gets invited to apply for positions and whose reputations are promoted through recommendations and support from senior (male) colleagues. Roper (1996) sheds light on the homo-social masculine ethics operating in some academic environments, while Collier (1998) has catalogued a variety of masculine subjectivities among academics in American law schools. He illustrates a clear internal hierarchy, where traits associated with legal “professionalism” (i.e. rationality, ambition and competitiveness) are highly privileged, while characteristics such as empathy, care and compassion go unnoticed.

The abovementioned examples all illustrate the importance of accounting for the variety of ways in which men and prevailing forms of masculinity operate in academic organizations, when disentangling the structural and cultural barriers to women’s career advancement.

2.1.1.9. Women’s representation in management and leadership

A central issue in the discussion on gender and organizational structures also relates to women’s prevalence in university leadership and management (for an overview of women’s representation among rectors, vice-rectors and pro-rectors across Europe see [Göransson, 2011]). One of the main questions raised in this branch of literature is whether more women in senior academic leadership positions will facilitate institutional change for the benefit of female academics. As Bilén-Green et al. (2008, p. 4) note:

It is logical to presume that greater numbers of women in the administrative hierarchy can jump start an organization’s change process (...). Their personal experience with pragmatic work policy obstacles and inherent understanding of subterranean barriers faced by women provide insight which, combined with levers of authority (...) can be instrumental to improve recruitment, retention, and promotion of female faculty.

Their own study of 221 American doctoral-granting institutions, however, fails to clearly confirm this hypothesis. Women’s presence among tenured scholars is only slightly higher when universities hold female rectors and provosts, and while the representation of female deans is found to play a statistically significant role in predicting women’s advancement to tenure-track positions, the effect sizes are modest. In a comparison of two American universities’ developments in gender compositions and women’s representation among department heads, the authors, however, identify noteworthy differences indicating that women mid-level managers (i.e. department heads)

do in fact contribute to the furtherance of gender equality in academia (Bilen-Green et al., 2009)

A recent German research project based on eight qualitative case studies of public research organizations may contribute to explain why increasing levels of female academic managers is not necessarily a clear-cut case for organizational change. As Sagebiel (2014, p. 1) concludes, women, like their male colleagues, are:

expected to exhibit a strong performance- and outcome-orientation (...). Flexibility and self-responsibility reveal themselves to be prominent strategies for individuals in the natural sciences and engineering in academia. For this reason, it is unrealistic to expect women – in principle – to seek organizational changes to achieve a better reconciliation of work and family/private life (Sagebiel, 2014, p. 1).

On the basis of 46 interviews with top university managers in Spain and Turkey, Carvalho et al. (2012) explore perceptions and attitudes on gender equality in research. Interestingly, they find both male and female interviewees to emphasize culturally and socially conditioned obstacles outside the university as being the main explanations to women's persistent underrepresentation. This further illustrates the complexity of the above raised question, since merely having women in top position may not necessarily change much.

Peterson's (2014) study on women in senior management positions (i.e. rectors and pro-rectors) at 10 Swedish universities, however, provides some hope that women in leadership may actually make a difference. Her analysis illustrates how female senior academic managers become change agents challenging prevailing masculinist managerial norms by their mere presence while also adopting management styles and approaches to leadership.

In sum, what we can learn from these studies is that while women's prevalence in university leadership and management may potentially facilitate institutional change for the benefit of female academics, this "change potential" is contingent on factors such as the organizational contexts' susceptibility to change, and women's opportunities to break with prevailing management styles.

2.1.1.10. Gender equality planning

A comprehensive number of studies have also focused attention on the impact and use of gender equality action plans and mainstreaming strategies

across the European countries. While this strand of research has provided important conceptual clarifications and recommendations for concrete actions to promote gender equality, the actual efficacy of gender equality policies and measures in countering inequalities is quite underexposed (Caprile et al. 2012, p. 20). A European meta-study of the existing research on the topic from 1980 to 2008 shows that gender equality policies have proven to be highly beneficial to women at the individual level (i.e. fixing the women), while activities aiming to revise and transform organization structures and cultures (i.e. fixing the institutions) have remained relatively unaddressed at the policy level. As noted by the authors “career development for women scientist needs to be combined with a change in the culture of science at large and should not be modelled according to male-shaped job and life patterns” (Müller et al., 2011, p. 308). This topic will be discussed further in Chapter 6.

2.1.1.11. Gender and scientific performance

Publication in peer reviewed journals can be viewed as the most prevalent way of communicating and popularizing academic work in the scientific community and is considered a decisive indicator of scholarly potential (O'Brien & Hapgood, 2012). As pointed out by Bentley & Blackburn (1992, p. 698) “publications determine how reputations are earned, grants acquired (and) promotions awarded”. Many scholars have therefore also investigated how issues of gender influence scientific performance in terms of publication and citation-rates.

Most studies on publication-rates find women to publish considerably less scholarly papers than their male colleagues. While these differences, as illustrated in the works of Sax et al. (2002) and Xie and Shauman (2003), have decreased over time, a substantial amount of the most recent literature on the topic still provides evidence of a notable productivity bias, with female researchers publishing somewhere between 15% and 30% less than their male colleagues (for a more detailed review of the literature see Chapter 7, Paper 3).

Existing research provides a number of different and sometimes conflicting explanations to this so-called “productivity puzzle” (Cole & Zuckerman, 1984). An undocumented explanation adhering to the aforementioned deficit argument asserts that gender differences in productivity rates are a result of the different biological and psychological characteristics of women and men (Van Arensbergen et al., 2012). Others have argued that childbearing interrupts women’s career progression and lower their productivity rates dur-

ing the early career stages due to domestic responsibilities (for a discussion of this issue and a review of the literature see Chapter 6, Paper 4). A study by Xie and Shauman (1998) relates the gender gap to structural causes such as employment rank and access to resources, while others have emphasized explanatory factors such as marital status (Shauman & Xie, 1996), variations in degree of disciplinary specialization (Leahey, 2006), the prestige of the researcher's university/department (Allison & Long, 1990), differences in collaborative patterns (for a more detailed review of the literature on this point see Chapter 7, Paper 3), type of appointment (Bland et al., 2006), parents' level of education (Simińska, 2007b) and time dedicated to research and other tasks (Taylor et al., 2006).

The relatively limited literature on gender differences in citation rates is inconclusive at best. Some scholars have shown women to be slightly more cited than their male colleagues, others find no noteworthy differences, while a third group of studies identify a citation bias in favor of male researchers (for a detailed review of the literature see Chapter 7, Article 4). As I shall touch upon in Chapter 5, the inconsistency of the existing literature may be due to the fact that the relationship between gender and citation rates is contingent on factors such as scientific discipline, geographic location and even gender composition in the field.

2.1.1.12. Gender and Research Funding

On the basis of a systematic review of the literature on gender and research funding Meulders et al.'s (2010) conclude that: Women have lower application rates but in general not lower success rates than their male colleagues; women's share among applicants and grant receivers vary across disciplines; women do not obtain prestigious research awards to the same extent as their male colleagues; women have higher success rates when applying for small, as opposed to large, research grants; and the odds of obtaining funding decrease as women rise in the scientific ranks (Ibid., p. 108).

While women's chances of obtaining funding, as noted, does not tend to be lower than that of their male competitors, the existing funding model may still work to their disadvantage. In line with Merton's aforementioned theory of the Matthew effect, O'Brien & Hapgood (2012, p. 1000), argue that scientific activities operate "in a strong reinforcing feedback loop in which success is rewarded with further success: funding is required to perform research, and funding is awarded on the basis of track record, i.e. research success to date". Put differently, since women's publication productivity on average is

lower than men's, they may not experience the same long-term effects of the Matthew effect as many of their male colleagues.

A few scholars have also noted that women's success rates may be lowered by a scientific evaluation system slanted in favour of mainstream topics and methods. Allmendinger and Hinz (2002), for instance, analyze German sociologists' success rates in applications for research grants and illustrate that women are disadvantaged due to higher propensities for non-mainstream topics and methods (cf. Caprile et al., 2012; see also Lamont, 2009, p. 224).

Finally, a number of scholars have investigated the gender consequences of the tendency towards larger grant forms, such as "centers of excellence", as strategic means to redistribute resources on fewer projects with larger scientific and societal impact (Bloch & Sørensen, 2014). A recent Norwegian study (Henningsen & Liestøl, 2013), for instance, argues that such initiatives indirectly reinforce gender inequality by allocating most resources for fields, disciplines and sub-disciplines with low female representation (see also Henningsen, 2003). Sandström et al. (2010) similarly show how the establishment of a number of Swedish Centers of Excellence particularly in medicine, natural science and technology fields, has led to a situation, where a substantial part of the funding which was formerly directed at scientific entities with a high female representation is now re-allocated to excellent research entities with more modest female representations. Aksnes et al. (2012) focus attention on the overall trend in Denmark, Finland, Norway and Sweden and similarly identify noteworthy disparities in the share of male and female leaders of the national Centers of Excellence. Women's presence in such positions ranges from 7% in Denmark to 19% in Finland (see also, European Commission, 2009).

2.1.1.13. Gender and Scientific Excellence

In view of the recurring gender effects reflected in practices of recruitment and selection, scientific performance assessments and allocation of research funding, an increasing number of international scholars have, over the course of the last decade, started to raise serious concerns about how scientific excellence is defined and measured in the research system (see, e.g., Brouns, 2007; Deem, 2007; European Commission, 2009, 2012a; Husu, 2010; Knights & Richards, 2003; Morley, 2005; Rees, 2011; Van den Brink et al., 2006; Van den Brink, 2010). One of the first endeavors to disentangle the interplay between gender and excellence was made at a workshop initiated by the European Commission in Florence, Italy in 2003. The workshop proceedings later resulted in the widely influential report "Gender and Excel-

lence in the Making” addressing issues of crucial importance to our understanding of how prevailing scientific notions of excellence may be generated. These issues included: How scientific performance and quality is measured and assessed; how research agendas are defined and developed; how research evaluators (i.e. peer-reviewers and assessment committee members) are selected and committees composed; and how the scientific system privileges certain types of approaches and topics, while marginalizing others (Brouns & Addis, 2004). In line with Lamont’s (2009, p. 3) assertion that “academic excellence is produced and defined in a multitude of sites and by an array of actors”, one of the main conclusions of the workshop was “that excellence is not an ‘universal fact’ or a ‘natural given’, or a ‘supra-disciplinary’ fact. It is a social construction and, as such, it is open to many kinds of bias” (Brouns & Addis, 2004, p. 18). As will be made evident in Chapter 7, this dissertation owes a great deal to the contributors of this report, which have played a crucial role in forming my own approaches to and understandings of the gender equality challenges in a rapidly changing academic landscape.

Another important contribution worth mentioning in this regard is Van den Brink’s PhD dissertation, which offers a unique look “Behind the scenes of science”, into Dutch academia. Drawing on the sociological work of Bourdieu, she convincingly shows how various forms of capital such as individual capital (i.e. leadership style and personality) and social capital (i.e. network ties and connections) relate to the development of symbolic capital in the appointment of full professors (i.e. scientific excellence). At the same time, her study illustrates how male professorial candidate’s capital is considered to be more legitimate than that of their female competitors, thus resulting in a higher symbolic capital accumulation (Van den Brink, 2010, p. 175). Van den Brink’s study, in this sense, raises serious concerns about academia’s strong institutionalized belief in the meritocracy as “a social system in which merit or talent is the basis for sorting people into positions and distributing rewards” (Scully, 1997, p. 413) (More on this in Chapter 8).

2.2. Danish research on gender equality in academia

Like the international gender equality literature, the Danish literature is epitomized by a myriad of different approaches and perspectives. The scholarly interest in the topic peaked in the late 1990’s and early 2000’s as a result of a comprehensive interdisciplinary research project under the title “Gender in academic organizations”. This project was initiated as a joint research pro-

gram funded by several of the Danish research councils, with the purpose of obtaining a better understanding of women's persistent underrepresentation at the highest academic ranks. The project involved some of the most renowned Danish gender scholars and resulted in 14 different "working papers" (a number of these will be highlighted below) addressing gender equality related factors, such as the gendered aspects of the national research policy system, the emotional dimensions of academic work, gender stratifications across scientific ranks and fields, and perceptions of gender equality among academic staff and managers (cf. Roivas et al., 2010). However, since then, the scholarly attention paid to issues of gender in science has been relatively modest.

While reading through international anthologies on gender equality in academia (see, e.g. Fogelberg et al., 1999; Riegraf et al., 2010; Sagaria, 2007; Simienska & Zimmer, 2007b) and attending conferences on the topic, I have become increasingly aware of the relative absence of Danish perspectives and contributions. Denmark, in other words, tends to be lacking senior scholars at the core of the field. This may have something to do with the status and reception of this type of research in a national context, where gender studies have been in dire straits since the early 2000s. In a quite illustrative comparison of the role and conditions of contemporary gender studies in Norway and Denmark, Sjørup (2008, p. 89) notes:

We, as Danish gender scholars, with great envy observe how gender studies in Norway, over the course of the last decades, has been organized and institutionalized, whereas Danish gender studies, on the opposite, has been coopted by other scientific fields and subjects, thus making concessions on its distinctive knowledge building and political project. Consequently, while Danish gender studies still exists, it faces clear challenges with respect to empirical anchoring and research contributions applicable at the political level (...). (My translation)

As indicated in the last part of this quote, Sjørup is not only worried about the cooptation of gender studies in Denmark, she also raises clear concerns about some Danish gender scholars' tendency to over-theorize, reify and dislocate issues of gender on the basis of queer-driven and poststructuralist approaches abstruse to those not conversant with gender studies.

As I shall illustrate in the following, the landscape of queer-, poststructuralist- and new-materialist feminist research approaches have also played an important part in forming the Danish research agenda on women's underrepresentation in the academy. A wide number of theoretically driven and qualitative micro-level studies have contributed with more or less appli-

cable, but nevertheless important, insights on the subtle gender dynamics and power relations underpinning academic discourses and work cultures, whereas quantitative macro- and meso level studies addressing the larger structural patterns have been less prevalent. The outline of the Danish literature will be structured thus: First I provide an introduction to the existing macro- and meso level quantitative contributions and after this, I present and discuss studies of more qualitative and theoretical nature.

2.2.1. Patterns of inequality

One of the very first reports to bring gender equality in research to the Danish agenda was published by Borchorst et al. (1992). The report caused some stir by showing only modest shares of women at the highest scientific ranks (assistant professors: 23%; associate professors: 18%; and full professors: 5%). Ten years later, a study by Henningsen and Højgaard (2002) rekindled the discussion by focusing attention on the leaky pipeline in Danish academia and the various cultural and structural mechanisms operating to exclude women from research at different educational levels and scientific ranks.

Langberg (2006) later challenged the idea of the “leaky pipeline” in Danish academia, by pointing to the high turnover of researchers in the university system. More specifically, she showed that only one third of the researchers appointed for associate professorships in Denmark came from Danish universities, whereas the rest came from positions outside the university sector. A large share of these was not Danish citizens (26%), and others came from prior positions as postdocs abroad (19%). Since women’s share of external appointees was considerably lower than their representation among the internal appointees, early-career female researchers, in other words, suffered from the high turnover rates of an increasingly internationalized Danish research system.

Several studies have also investigated the role and impact of research funding in explaining the slow pace of women into associate and full professor positions. Nexø Jensen (2003) has found women to be considerably underrepresented among the public research councils’ grant receivers. The National Research Council for the Humanities, for instance, merely allocated 10% of its overall funding for female applicants in the period 1998-2002. According to the author, this gendered pattern should be interpreted in view of women’s higher propensity for inter-disciplinary and cooperative research approaches deviating from the prevailing notions of excellent science in the research councils (cf. Roivas, 2010).

Andersen and Henningsen (2009) investigate the gender compositions of grant receivers from the Danish Council of Independent Research in the period 2001-2006, and similarly show women to receive smaller grants and have lower success than their male competitors.

Finally, Verner (2008) explores the impact of family formation on the career advancement of women and men. Combining statistical employment information (rank, department and university) and register data (education, civil status, wage, income and children) on all academics employed at the Danish universities in the period 2000-2001, she finds that “marital status and partners’ occupation are major determinants for women’s ranking, but does not matter for the ranking of their male colleagues” (Ibid., p. 1). Furthermore, she shows that the average woman in an academic top position in Denmark has fewer children than their average male colleague, and that more female than male professors are also childless.

In conclusion, it seems reasonable to assert that existing macro- and meso level endeavors to explore the statistical patterns of the skewed gender compositions in Danish academic have been quite scarce. We now know that women tend to suffer from the high turnover rates at assistant professor level and are facing particular challenges in obtaining public research funding. Furthermore, we see that in Denmark, as is the case in the US, marital status and family formation appear to play a considerable role in explaining women’s underrepresentation at the highest scientific ranks.

2.2.2. Subtle gender dynamics and power relations in the Danish academy

As noted earlier, the majority of Danish studies on gender equality in academia have been qualitative in their approaches with a particular interest in investigating the subtle gender dynamics and power relations underpinning academic cultures.

In a doctoral thesis, Søndergaard (1996) investigates how gender discourses operate in the everyday interaction and influence the educational progression of Danish humanities and social science students. Her interviews depict an educational environment, where men are encouraged to pursue a research career, while women risk disapproval if signaling competitive behavior (cf. Rosenbeck, p. 2014).

In another study based on comprehensive ethnographic observations and interviews with 18 male and female academics from the humanities and social sciences, Søndergaard (2001) provides informative insights into the institutional boundary work, cultures and discourses forming Danish aca-

demics' understandings of gender inequality. A theoretically-informed follow up study reflects on women's "otherness" and marginalization in a "male-streamed" academic culture (Søndergaard, 2002).

Bloch (2007) adds to our knowledge on the subtle gender dynamics underpinning academic environments by addressing how gender relates to the emotional dimensions of academic work. On the basis of qualitative interviews with 54 Danish academics, she identifies noteworthy differences in how male and female academics manage and cope with feelings such as pride and anger. For instance, if women show feelings of anger, they will often be met with disapproval and resentment, while male academics displaying anger are often perceived as strong and confident. Furthermore, women are more cautious about displaying emotions of pride than their male colleagues.

In a similar vein of research, Gomard (2002) sheds light on Danish academics' interpersonal communication and interaction patterns. Her study depicts an individualized and competitive academic work culture limiting the space for consensual and collectivistic forms of communication, which has traditionally been ascribed as female traits. Reisby and Gomard (2001) observe gender differences in conduct and visibility of early-career (male and female) researchers. On the basis of ethnographic observations and in-depth interviews with PhD students and research leaders in chemistry and humanities departments, they find male PhD students to be more strategic, outgoing and better at bringing attention to their work than their female colleagues.

As illustrated in the above mentioned examples, one of the recurring ambitions underpinning the qualitative endeavors to investigate the interplay between gender and science has been to challenge the idea of science as a gender neutral "culture of no culture" (Traweek, 1988, p. 162). This perspective is maybe most clearly captured in the PhD dissertation of Cathrine Egeland (2000) illuminating how ideas and understandings of gender equality are constructed and represented among Danish academics. Drawing on theoretical concepts from feminist science studies, her work emphasizes the crucial importance of deconstructing and revising the prevailing ideas and understandings of science as a neutral and non-gendered phenomenon. This leads her to conclude that a political reliance on instruments such as affirmative action will not take us far in the promotion of gender equality in the sciences, since such instruments merely treats the symptoms while leaving the underlying causes and gender mechanisms unnoticed.

Finally, Hasse and Trentemøller (2011), in a qualitative study comparing the work life of academic physicist in Denmark, Estonia, Finland, Italy and Poland, identify:

... a connection between epistemic cultures and the values, norms and traditions of work place cultures, which again can be connected with the actual number of female scientists and the topics they consider relevant for the pursuit of scientific knowledge (...) (Hasse & Trentemøller, 2011, p. 21).

By shedding light on women physicists' particular preferences for research topics and their propensity for less competitive cultures, Hasse and Trentemøller's study gives new life to a pertinent question in feminist science studies of whether and how women practice science differently (see, e.g. Harding, 1986; Keller, 1995), and whether the prevailing epistemic cultures and scientific values, norms and traditions open space for such gender related variations to unfold (More on this in Chapter 7, Paper 3)

To conclude, the qualitative endeavors (of which only a selected number of publications have been discussed in this outline) clearly add important insights to our knowledge on the subtle and often unarticulated ways in which gender comes to influence and form the academic career trajectories. Moreover, these studies have addressed important concerns about an academic "culture of no culture", in which processes of gender stratification are often neglected or addressed in terms of a fixing the women approach. Whereas the exemplified studies, in this sense, illustrate the importance of questioning the very edifice of science (and society) as a starting point for understanding its gendered stratifications, one may in line with Sjørup (2008) argue that some of them, due to their poststructuralist and queer-feminist ambition, are better at dereifying and unfreezing prevailing notions of gender and science, than they are at providing suggestions for institutional change.

2.3. Gender equality and institutional change

As I elaborate on in Chapter 3, the past two decades have brought about enormous changes in the institutional environment for higher education with clear impacts on academic life and working conditions. This development has also been accompanied by an increasing scholarly interest in the gendered aspects of "New Managerialism",⁹ "the Audit University" and a rapidly

⁹ "New Managerialism" is the umbrella-term used to describe "the adoption by public sector organizations of organizational forms, technologies, management prac-

changing “Knowledge Economy” (more on this development in Chapter 3). The following pages provide a brief introduction to this branch of literature and discuss its theoretical limits and feasibility to inform and advance our understanding of the role of gender in organizations.

As will be evident in the following, the existing (mainly UK-based) literature on gender equality and New Managerialism in higher education provides ambiguous and inconclusive results. Some scholars have argued that New Public Management-driven managerial logics and university reforms constitute a pivotal threat to women’s status and advancement in the academy (see, e.g. Davies & Thomas, 2002). In opposition, others have contended that such institutional changes open up new opportunities for women to enter the university management levels while at the same time undermining some of the prevailing obstacles to women’s career progression in the academy (see, e.g., Carvalho & Machado, 2010; Deem, 2003; de Groot, 1997; Luke, 1997; Morley, 2005).

Thomas (1996) provides one of the earliest studies of the gendered implications of New Public Management-related individual performance indicators. On the basis of 19 semi-structured interviews with women academics, she illustrates how performance measures work to “normalize the academic role as a highly competitive, productive unit focused on identifiable, quantitative outputs” (Ibid., p. 143). According to her, women face particular challenges in reconciling this “macho working culture” with domestic responsibilities, career breaks and non-traditional career patterns.

Davies and Thomas (2002) similarly examine how the introduction of New Public Management (henceforth NPM) into UK universities has influenced professional identities and work activities. On the basis of 53 semi-structured interviews with women academics from three UK universities, they describe an academic profession increasingly structured around work activities related to research and funding, while teaching “is not viewed as the route to promotion” (Ibid., p. 190). In another study drawing on the same empirical material, Thomas and Davies (2002) argue that the NPM-driven managerial regime “comply with masculine discourses of competitiveness, instrumentality and individuality” while conflicting “with feminine discourses of empathy, supportiveness and nurturing” (Ibid., p. 390). By examining what they describe as the “new performance culture”, they also find that disciplinary technologies have intensified academic work activities in favor of the “young and ambitious, without families or domestic responsibilities” (Ibid., p.

tices and values more commonly found in the private business” (Deem, 1998, p. 47).

390). Several other studies have supported these findings by showing the subtle ways in which NPM-driven university models privilege what Thomas and Davis describes as the “dominant forms of masculinity, maleness and men” (Ibid., p. 390) (see, e.g., Prichard, 1996; Goode & Bagilhole, 1998; Kerfoot & Knights, 1999; Leonard, 1998).

In a recent cross-national comparative study, Teelken and Deem (2013) draw on 48 qualitative interviews with researchers, administrative officers and deans from universities in the Netherlands, Sweden and the UK, to investigate the impact of new management and governance regimes on organizational actors’ perceptions of GE issues. Their results show that the current approaches to management in universities, despite their formalized purpose of diminishing gender inequality “actually re-emphasise the existing status quo in various ways and enable more subtle forms of discrimination despite the existence of a veneer of equality” (p. 49). Moreover, the authors point to a clear gap between the universities’ gender equality action plans and the gendered outcomes of institutional selection and promotion practices.

Lafferty and Fleming (2000) investigate institutional changes in Australian academic work and similarly find that managerialism “has ushered in the implementation of market-deprived principles that contradict those of equity” (Ibid., p. 263). Furthermore they note that “the devolution of budgetary responsibility to departmental heads has also meant that that the career aspirations of many staff are dependent on the decisions of (predominantly male) departmental heads, with financial considerations playing a major part” (Ibid., p. 263) (see also Currie et al., 2000).

Fletcher et al. (2007), in a mixed methods study combining interviews with 60 female academics and survey data on 275 male and female academics at a UK university, explore the persistent inequalities in a research system characterized by new modes of knowledge production and corporate managerial logics. They argue that institutional changes have brought about lower degrees of transparency, increased competition, less collegiate work forms and a research culture based on homo-social networking which marginalizes women academics.

Berg (2010) addresses how recent restructurings of the Swedish university system have influenced women academics’ identities in relation to teaching, research and management. Her interviews indicate that women researchers face particular challenges in maintaining an identity as active researchers in a university system characterized by comprehensive competition for research funding, more bureaucracy and administrative work as well as increasing teaching workloads, with more students per lecturer.

Matthies & Matthäus (2010), address the question of whether and how women's prospects in science have been reconstituted as a result of a general process of restructuring science in Germany. On the basis of interviews with reviewers participating in research performance assessments, they conclude that the recent decades' restructuring of the research system with increased levels of formalization and standardization has not weeded out discriminatory structures and mechanisms. On the opposite, "plenty of space still exists for stereotypical gender images, and, in this connection, the contradiction between what is viewed as the feminine and what is considered a good scientist remains" (Ibid., p. 97).

The UK research system's relatively long tradition of major assessment exercises (i.e. the Research Assessment Exercise [RAE])¹⁰ has also attracted some scholarly attention. While a few authors have asserted that the transparency and standardization related to this type of performance measure may allow research active women to display their merits and claim their right to promotion (see, e.g. Morley, 2005; Luke, 1997), others have found the increasing emphasis on individual performance measures to be problematic. Knights and Richards (2003), describes the RAE thus:

It is a universal system that takes no account of differential academic life chances that are gendered or grounded in any other systematized inequality (e.g. ethnicity, sexual orientation). So when women are competing with men for scarce positions, promotions or salary increments, there is often not a level playing field. Many women have assumed domestic and child-rearing responsibilities that have restricted the time that, by comparison with their male counterparts, they could possibly devote to academic work and building their CVs (Knights and Richards, 2003, p. 220).

In a similar strand of criticism, Harding (2002) notes that the RAE system's underlying "idea that fair and objective judgments can be made and rewards

¹⁰ The RAE is a four, five or six-yearly survey of the British universities' research output. More specifically each research employee is required to supply up to four items published during the period of question (Knights & Richards, 2003). As noted by Mills and Berg (2010) "These exercises began in 1986, and amount to a massive system-wide peer-review exercise paid for by the government's funding council, where nominated disciplinary representatives spend up to six months confidentially reviewing and rating the work of their colleagues. At stake is not just status within the research 'league table', but also the proportion of funding available to departments for research and training activities, and so it is in the interests of universities to get the best possible rankings" (Ibid, p. 341). The RAE was replaced by the Research Excellence Framework in 2014.

solely allocated in proportion to worth, to individual merit, is at best naïve, and at worst, a deception” (Harding, 2002, p. 285). In line with Knights and Richards she also asserts that this system works to reinforce existing inequalities in the academic status of women and men.

Goode and Bagilhole (1998) argue that the RAE framework promotes an isolationist academic culture since “Each academic is entered as an individual (if at all), (...) therefore there is a lot of pressure to publish single, or at least first authored, articles in respectable refereed journals to establish claim to intellectual ideas rather than to share them with colleagues” (Bagilhole, 2002, p. 52).

Morley (2007), on the basis of 18 interviews with UK researchers and academic managers, investigates the influence of quality assurance on women’s progression and status in the sciences. Her interviews depict a clear tension in the gendered effects of the audit culture:

While audit is experienced as a form of violence by some women, it is perceived as a welcome antidote to individualism by others (...) Women’s enhanced visibility as quality managers appears as a gain. However, short-term opportunities for individuals could lead to long-term constraints for women collectively if quality continues to override equality concerns in the academy” (Morley, 2007, p. 426-427).

Harley (2003) reports the findings of a survey addressing the perceived impact of the RAE among approximately 800 British academics and do not find gender to be a statistically significant explanatory factor in accounting for differential perceptions of RAE framework. She, however, argues that the RAE’s “definition of an academic career in terms of the continuous production of refereed publications is likely to reinforce existing gender disadvantage within universities” (Harley, 2003, p. 389).

Luke (1997) examines the gender consequences of the Australian Quality Assurance system (QA) arguing that in an Australian “institutional context where open systems were lacking and women’s contributions invisible and undervalued” (Luke, 1997, p. 433), the QA system’s introduction of managerial tools rendering visible issues of research performance as well as gender distributions in the academic hierarchies has opened up new opportunities for women and other marginalized groups.

2.3.1. Conflations of masculinities and managerialism

As illustrated above, many of the existing endeavors to investigate and understand the gendered implications of NPM-driven managerial logics and

governance models have depicted a university system increasingly embedded in masculine approaches to management and research. Fisher (2007), for instance, notes that New Managerialism, with its emphasis upon productivity, efficiency and growth ensures that universities are “perceived essentially as arenas for masculine endeavour” (Fisher, 2007, p. 508). Grummell et al. (2009, p. 192) states that entrepreneurialism “has allowed old masculinities to remake themselves and maintain hegemonic male advantage”. Costas (2010, p. 117) describes the current university system as a “highly masculine form of organization” that privileges male constructed and ascribed values such as aggressiveness and competitiveness over cooperation. Thomas and Davies (Thomas and Davies 2002, p. 390), as mentioned earlier, depict a university system characterized by “masculine discourses of competitiveness, instrumentality and individuality” conflicting “with feminine discourses of empathy, supportiveness and nurturing”, while Harley (2003, p. 388) asserts “that the RAE with its public monitoring of individual achievement and resource allocation, institutionalises an especially strong version of ‘hegemonic masculinity’ in UK universities”.

In view of the social constructivist approaches underpinning much of this literature, it seems quite surprising that the identified “threats” prompted by NPM and New Managerialism (e.g. competitiveness, individualism, self-assertiveness and aggressiveness) are highlighted as being particularly “masculine” in their connotations and characteristics. These studies, in other words – despite clear ambitions of overcoming essentialist gender categories – tend to rely on a relatively fixed idea about which types of working styles and behavior to define as masculine and feminine in their traits. This is an approach to gender roles in organizations, which resonates well with Marshall’s (1989) idea of the male and female values – agency and communion. Agency (the male value) is here understood as a principle that works through independence, self-assertion, self-expansion and self-protection, while communion (the female value) is characterised by interdependence, openness and fusion (Marshall, 1989).

Furthermore, this branch of literature appears to rest on a quite static and gender-centered view of organizations and institutional change, where hegemonic masculinity tends to be the prevailing organisational logic structuring all academic work arrangements. As I shall illustrate in this dissertation, it seems reasonable to question whether such an approach succeeds in accounting for how gender dynamics – as is the case with other types of work behavior – are contingent on institutional conditions (Thornton and Ocasio, 1999).

My point here is best made, perhaps, by more critically examining a particular example. In this case, I have chosen Grummel et al.'s aforementioned assertion that entrepreneurialism has allowed for old masculinities to remake themselves and maintain a hegemonic advantage. This is an assertion which tends to rely on the interpretation that corporatist managerial logics are essentially masculine in their nature and that masculine discourses have a way of coopting broader societal changes to their advantage. But what does this and other similar interpretations imply if significant progress is to be made in countering inequalities?

In line with Sayer (2000b), it is my view, that such interpretive schemes leave only limited imaginative space for envisioning more gender inclusive academic organizational forms. Instead, I suggest that we address the NPM-driven institutional restructurings as change processes that will potentially deteriorate the working conditions of both women and men through the establishment of more individual, flexible, stressful and precarious work arrangements. Such change processes may of course, as illustrated in the literature and in the empirical chapters of this dissertation, be gendered in their effects – but only contingently so – as they serve to reinforce some cultural and structural factors hindering women's career advancement while eliminating others. Against the backdrop of this introductory overview of the literature, I will now describe and discuss how my own dissertation contributes to the field.

2.4. Contribution to the field and specification of focus

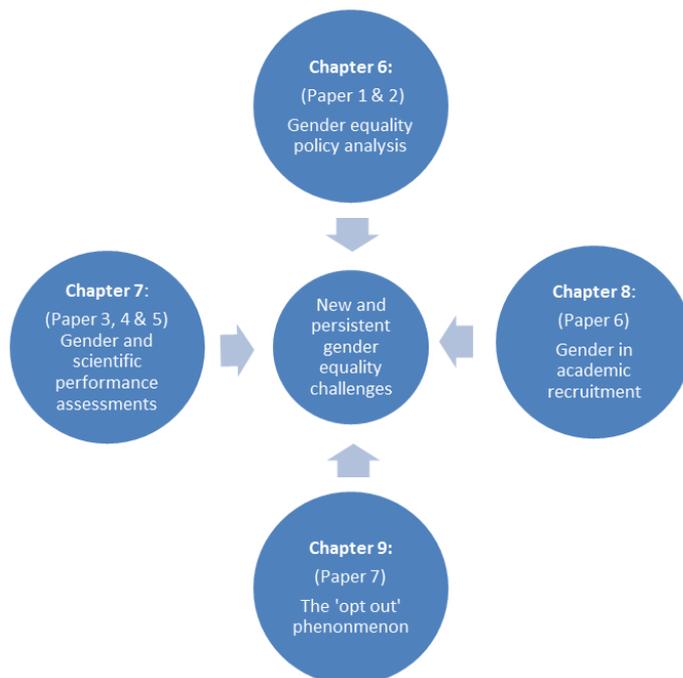
In view of the preceding sections' outline of the complex myriad of interacting and mutually constitutive factors and mechanisms contributing to produce and reproduce gender inequalities in the sciences, it seems reasonable to contend that an integrated and holistic research strategy is necessary if the problem under investigation is to be adequately addressed. As opposed to the existing literature, which in most cases revolves around a particular aspect of women's underrepresentation in the sciences, this dissertation asserts that the gender equality problem is most fruitfully explained on the basis of a common research framework with a capacity for operating across multiple levels of analysis.

As I elaborate further on in Chapter 3, I employ a critical realist mixed methodology moving from the concrete empirical phenomenon of the unequal gender distributions at Aarhus University towards the generative mech-

anisms producing this pattern. According to the critical realist approach, social researchers, in opposition to natural scientists, are dealing with open systems involving a potentially large number of interacting mechanisms (Danermark et al., 2002). This means that the empirical phenomenon of interest is most fruitfully explained by drawing attention to the multiplicity of social processes and structures producing it. Such an approach implies that the study is divided into a selected number of analytically distinct potential explanatory components bridging macro level (i.e. institutions and structures) and micro level (i.e. interaction and behavior) perspectives. As illustrated in the figure below, I have chosen to narrow down the focus and concentrate on four central research questions. Each of these draws attention to a potential number of interrelated factors and mechanisms which under certain circumstances can be expected to be instrumental to women's persistent underrepresentation at the highest scientific ranks. In the following, I will briefly account for each of these sub-questions, discuss how they arose, and relate them to the overall research objective, which is repeated below:

1. How can we understand and explain women's persistent underrepresentation at the upper levels of academia?
2. How are issues of gender equality reconstituted in a rapidly changing Danish academic landscape?

Figure 3. Overview of the four empirical chapters and the embedded scholarly papers



2.4.1. Framing the problem(s)

Whereas most PhD fellows when writing up their dissertations end up framing the overall research problem and main arguments in a retrospective manner leaving the reader with the impression that the “puzzle” was clear and well thought out right from start, I have chosen a different approach. As many social scientists recognize, the overall research question is often formulated during the course of the research process. In qualitative social research, for instance, definitions and ideas are in many cases developed and refined throughout the research in a recursive operation (Crescentini & Mainardi, 2009), and quantitative social science scholars may also sometimes be inclined to adjust and reformulate their basic hypothesis and arguments to fit the available data.

As a first year PhD fellow, I set out with the ambition to investigate the institutional and organizational factors (cultural and structural) contributing to explain the unequal outcomes of male and female researchers’ academic careers at Aarhus University. As noted earlier, my overall research topic (gender inequality in academia) and case (Aarhus University) had been defined beforehand as a result of the dissertation’s direct connection to the EU FP7 project STAGES. While familiarizing myself with the relevant literature, and comparing Aarhus University’s gender equality figures to the situation at similar national and international universities, it soon became clear that my own institution (Aarhus University) represented an informative case for a multi-level study combining macro-, meso- and micro level perspectives on the problem.

As a first step towards opening the black box of gender equality at Aarhus University, I decided to conduct a comparative macro-level analysis illuminating the distinct paths that Scandinavian countries and universities are embarking on to address gender equality issues in academia. As Elkins and Simeon (1979, p. 138) note, “cultural assumptions may be clear only in contrast to those of another culture”. Qualitative cross-national comparisons, in other words, offer a useful starting point for identifying taken-for-granted cultural differences across societies and organizations. They may serve as a lever for encoding the deep-seated “stocks of knowledge” and implicit “systems of belief” influencing how we comprehend and understand the world (Luckmann & Schutz, 1973, p. 7). As I shall illustrate in Chapter 6, the Scandinavian countries, despite many similarities regarding culture, welfare systems, family-friendly policies and universal breadwinner models, are characterized by noteworthy differences when it comes to public, academic and political perceptions of gender equality. My efforts to contrast and compare

six Scandinavian universities' (and three countries') frameworks and strategies for legitimating and promoting gender equality, in this sense, provide a macro level starting point for understanding the priority and value given to issues of gender equality at Aarhus University in view of broader culturally embedded discourses and understandings. Moreover, this part of the study also aims to provide a more sufficient understanding of how variations in the Scandinavian universities' policy engagement and governance of gender equality concerns contribute to account for differences in women's representation at the highest academic levels of the organizations. To accomplish these aims Chapter 6 is framed to answer the following question:

A) How do the Scandinavian countries and universities approach issues of gender equality in academia differently, and how can we understand the priority and value given to issues of GE at Aarhus University in context of such a comparison?

Caprile et al. (2012) in an extensive meta-study of the existing literature highlights the crucial need for more systematic and in-depth research on the efficacy of different types of policy measures for promoting gender equality. In this sense, Chapter 6 and the above mentioned research question contributes with new perspectives on an underexposed area in the international literature.

One of the central ideas derived from Chapter 6 relates to the Danish universities' particular framing of gender equality work as a means to realize the organization's full potential by utilizing the whole talent pool. This policy focus, which shares many similarities with the dominant EU discourses on gender equality in academia, raises fundamental concerns about what a research talent is, how it is defined and identified, to what extent its prevailing conceptions intermingles with issues of gender, and what talents – in addition to academic merits – are actually needed of a researcher to survive in the academic world?

In order to address the first three of these concerns in the best suitable way, I decided to progress my dissertation by investigating the criteria employed by gatekeepers (department heads and appointment committee members) in the assessments of individual researchers' scientific performance – through a gender lens. This second part of the study, which is unfolded in Chapter 7, employs a meso-level perspective combining qualitative interviews with department heads, document analysis of appointment reports and bibliometric analysis of the research activities of Danish academics to illuminate how the expanding use of individual performance measures

in academia influences women's status and career advancement. More specifically this chapter revolves around the following question:

B) How is scientific performance assessed in the recruitment and promotion of academic staff, and what are the potential gender consequences related to the expanding use of quantitative metrics and indicators in such assessments?

Caprile et al.'s (2012) aforementioned meta-study on the gender equality literature details a lack of research on the criteria and procedures for assessing excellence and merits in the sciences, thus lending support to the relevance of my endeavors on this front. Moreover, the existing knowledge on gender and NPM-driven audit regimes, is primarily limited to the UK and Australia, which further illustrates the contribution of such a study in a European context.

Whereas my endeavors in the second part of the dissertation resulted from an ambition to disentangle the prevailing notions of what a research talent is, and how such notions relate to issues of gender, my investigations in Chapters 8 and 9 have arisen from a basic interest in exploring what talents – in addition to scientific skills and qualifications – are needed to survive in the academic world. In continuation of Chapter 7's meso-level focus on scientific assessment criteria, Chapter 8 investigates the gendered outcomes of academic recruitment and selection practices. More specifically, this chapter addresses the following question:

C) What are the gendered consequences of the prevailing academic recruitment and selection practices at Aarhus University?

With a particular focus on the preliminary stages of the recruitment process, this chapter covers an underexposed aspect in the literature by addressing the unresolved question of how highly formal procedures related to recruitment and selection allow space for mobilizing liminal gender networking practices. Most practices of recruitment and selection are treated with a high degree of confidentiality and sensitivity, and social scientists therefore often face difficulties in gaining access to relevant qualitative and quantitative data on the topic (Husu, 2000; Van den Brink et al., 2006, 2011). Chapter 8's combination of interviews with department heads and recruitment statistics represents an exception to this rule. More specifically, my activities as part of the STAGES project have given me access to unique recruitment data derived from Aarhus University's human resources department, which in combination with qualitative interviews with the university's department heads provide unique insight into an otherwise closed realm of academic selection.

Furthermore, this part of the dissertation, like Chapter 7, also feeds into the dissertation's overall interest in understanding how issues of gender equality are reconstituted in a rapidly changing research sector. Department heads at Aarhus University, as observed by Degn (2014a, p. 3), are to an increasing extent "expected to accept responsibility for a range of new, and very classical managerial tasks, while at the same time upholding some form of academic status", and this development may, as illustrated in Chapter 8, open space for managerial decision-making based on personal connections and network ties, which in accordance with the existing literature sometimes work against women's career advancement.

Another central pattern identified in Chapter 8 is that a disproportionate number of the local female candidates for associate professorships at Aarhus University (8-16%, depending on year) are leaving the organization without even applying for the vacant research positions. This finding has guided the framing of the last empirical chapter (Chapter 9), which provides an integrated multi-level framework for understanding and explaining the apparent "opt out" phenomenon among young women academics. Drawing on survey data and qualitative interviews with former postdocs and department heads at Aarhus University, this Chapter aims to answer the following question:

D) How can we understand and explain the disproportionate share of early career female researchers choosing to leave Aarhus University?

The key contribution of this chapter lies in its multi-level ambition to illuminate the complex ways in which correspondences between structural constraints and personal strivings circumscribe young academic women's career choices. Moreover, this part of the dissertation can be seen as a nodal point connecting the macro and meso-level perspectives addressed in the preceding chapters to the experiences, lives and career trajectories of young female researchers.

In addition to the abovementioned endeavors, this dissertation also adds to our knowledge on the particular case of gender equality in Danish academia. As illustrated in the international literature, the gendered stratification of science tends to be contingent on context, which makes it crucial to connect the results of Chapters 6, 7, 8 and 9 to the historical background and central characteristics of women's position in the Danish research system. Such a description will be included as part of the case specification presented in Chapter 5, thus serving as a reference point for developing richer and more contextually embedded analysis throughout the dissertation.

2.5. Wrapping up

In this chapter, I have provided an introductory overview of the central barriers to GE identified in the existing Danish and international literature and elaborated on how my own work adds to the existing knowledge and approaches to the topic. Moreover, I have operationalized the central research problem into four sub-questions addressing pertinent, underexposed aspects of the new and persistent gender equality challenges in academia. In the following Chapter, I turn my attention to the critical realist research strategy and the theoretical framework employed throughout the dissertation.

Chapter 3.

Research strategy and theoretical framework

Chapter 3 provides an introduction to the critical realist research strategy and meta-theoretical framework. Moreover it describes and discusses the main theoretical concepts and perspectives employed throughout the dissertation.

3.1. Critical realism

As noted, this dissertation adopts a critical realist research strategy and meta-theoretical framework (i.e. the realist ontological and epistemological position). Critical realism recognizes the existence of an objective reality, and emphasizes the necessity of drawing attention to the “intransitive dimension” when doing social research (Danermark et al., 2002).

According to the prominent critical realist scholar, Roy Bhaskar, the dualisms underpinning ontological and epistemological debates,¹¹ can be overcome on the basis of a philosophy of science that perceives the world as a structured, stratified and differentiated reality (Bhaskar, 2008; House, 2010). More specifically, Bhaskar distinguishes between three ontological domains of reality: the real, the actual, and the empirical. In this terminology, “the real” can be referred to as the intransitive dimension. This domain consists of independent generative mechanisms (or structures) that function regardless of how we understand or approach them. As human beings, we can theorize about the real, but we will never be able to fully understand its mechanisms and structures. In a sociological perspective this implies an understanding of social phenomena (e.g. academic organizations) as being inhabited by certain pre-given structures and causal mechanisms. “The actual” refers to the events caused by the mechanisms of the real. As in the case of the real, this domain is independent of our perceptions and interpretations of it. Conversely, the empirical domain specifically refers to our experiences and understandings of the events taking place in the world, and following the logic

¹¹ These dualisms include the distinction between positivism and relativism, quantitative and qualitative methodologies, structure and agency. Critical realism rejects these oppositions and defends the possibility of combining elements of different positions in the scientific investigation of reality (Danermark et al., 2002)

of critical realism, our access to reality is limited to these empirical experiences (Bhaskar, 2008; House, 2010). In other words, when we as social researchers study reality, we are in fact only studying the empirical level of this ontologically stratified world.

In this sense, critical realism rejects the positivist ideal of attaining an absolute truth (Bhaskar, 2008). In order to move beyond the merely empirical experience of reality and come closer to an understanding of its underlying structures¹² and mechanisms, critical realism points to the development of a scientific approach that combines theory-guided conceptualizations and methodological pluralism (more on methodology in Chapter 4). In the words of Archer et al. (1998, p. 6), the approach “claims to be able to combine and reconcile ontological realism, epistemological relativism and judgmental rationality”. In the following pages, I will discuss the implications of this approach with respect to scientific explanation and the analytical strategy of the dissertation.

3.1.1. Causation and interpretation

In critical realism, social structures of reality are seen as internally related elements with causal powers. In opposition to the positivist view, critical realists understand causation in terms of “things, forces, powers, mechanisms or sets of relations that make things happen or ‘trigger’ events” (Kurki, 2008, p. 174). This means that causal explanation cannot be reduced to an empiricist model of regular successions of events. Empiricist models might contribute to the identification of potential “candidates” for causal mechanisms, but they do not take us all the way. As pointed out by Sayer (2000, p. 14), “what causes something to happen has nothing to do with the number of times we have observed it happening”. Instead, critical realism points to the relevance of identifying the internally related elements of causal powers, understanding how they work, and discovering under what circumstances they are activated (Sayer, 2000). As Davis and Marquis (2005, p. 366) put it: “If a regres-

¹² In short, the notion of structure in this tradition refers to “the inner composition making each object what it is and not something else” (Danermark et al. 2002, p. 47). One example is the biological structures separating one animal or plant species from another. In regard to social phenomena, it is relevant to note that structures not only relate to the macro level conditions underpinning organizations or societies. Social structures can also be identified and analyzed at many other levels and areas including personality structures, face-to-face interactions, linguistic and communication structures, as well as institutional and organization structures (Danermark et al., 2002).

sion tells us about a relation between two variables – for instance, if you wind a watch it will keep running – mechanisms pry the back off the watch and show *how*”.

In opposition to the natural sciences, social scientists are not able to create artificial scientific experiments under the constant conditions of a closed system. The social world is an open system, which implies that consequences of causal mechanisms are dependent on contingent external conditions, and this is why “the future is open – things could go in many different ways” (Sayer, 2000, p. 15).

The concept of meaning plays an important role in the critical realist epistemology, since the study of social phenomena most often involves a focus on people’s interpretations and understandings of the social processes and contexts in which they take part. This implies that critical realism accepts the hermeneutic conception of knowledge as a communicatively constructed phenomenon. However, in a critical realist view, actions always presuppose an underlying set of pre-existing structures (re)produced over time, and when identifying meanings and discourses in a given social setting, we always have to relate them to the surrounding contextual factors and circumstances (Sayer, 2000, pp. 17-20).

3.1.2. Structure-agency and the emancipatory potential of critical realist research

In line with the moderate social constructivist view, critical realism understands the structure-agency relationship in terms of a dialectical process. As Berger and Luckmann (1967, p. 79) have observed, “Society is a human product. Society is an objective reality. Man is a social product”; and this conception of social reality ties very well with the critical realist view. However, critical realism challenges the starting point of Berger & Luckmann’s constructivism by rejecting the idea that all parts of social reality can be considered historical products of human interaction. Instead, the realist approach points to the conception of an intransitive dimension of reality, including pre-existing structures and objects, which break with the constructivist ontology (House, 2010). The statement below, by critical discourse analyst Norman Fairclough, offers a good description of the implications of the critical realist ontology in social research.

The natural and the social world differ in that the latter but not the former depends upon human action for its existence and is ‘socially constructed’. The socially constructive effects of discourse are thus a central concern, but a distinction is drawn between construal and construction: the world is discour-

sively construed (or represented) in many various ways, but which construals come to have socially constructive effects depends upon a range of conditions which include for instance power relations but also properties of whatever parts or aspects of the world are being construed. We cannot transform the world in any old way we happen to construe it; the world is such that some transformations are possible and others are not (Fairclough, 2010, pp. 4-5).

From the above, we can imply that critical realism represents a view of the world in which actors are both constrained and enabled by the structures of society (Sayer, 2000, p. 18). One of the main objectives of a critical realist approach is therefore to identify and understand how the social practices of society relate to the underlying structures, and this is where its emancipatory element is manifested (Bhaskar, 1986). Danermark et al. (2002 p. 182) concludes:

The most productive contribution to social practice that social science can make (...) is the examination of social structures, their powers and liabilities, mechanisms and tendencies, so that people, groups and organizations may consider them in their interaction and so – if they wish – strive to change or eliminate existing social structures and to establish new ones.

As illustrated in the quote, social structures, in a critical realist perspective, are considered the constitutive environment of all types of social interaction. Such environments are, however, not independent of human interaction and may be transformed over time, and critical social research may serve as a “kick-starter” in such transformative processes. In the following section, I will account for how to employ a critical realist approach in this project’s investigation of new and persistent challenges to gender equality in academia.

3.1.3. A critical realist approach to the study of barriers to gender equality in academia

The research process of this project moves from the concrete empirical phenomenon of gender inequality in university settings towards the generative mechanisms contributing to produce this particular phenomenon. As previously described, social researchers are dealing with open systems (Danermark et al., 2002), and the persistent gender inequalities in university settings should therefore also be investigated and understood as manifestations of a great number of interacting and mutually constitutive mechanisms related to different types of organizational and societal structures. As discussed in Chapter 2, I have chosen to narrow down the focus and concentrate on four central research problems, each drawing attention to a number of potential

mechanisms serving to explain this overall pattern at different levels of analysis. When using the term “different levels of analysis”, I refer here to a distinction between micro, meso and macro-level analytical perspectives. This analytical distinction will be further specified below.

3.1.4. Differentiated levels of analysis

In an attempt to “convey the ‘textured’ and interwoven nature of different layers and dimensions of social reality” (1993, p. 7), critical realist Derek Layder has developed the “research map” depicted in Figure 4. The map offers a stratified model for bridging macro-level (large scale social systems), meso-level (organizational processes and practices) and micro-level (social interaction and lived experience) research. Each of the five elements of the research map (context, setting, situated activity and self) describes a differentiated level of social organization, but the elements can also be viewed as potential areas of social research. Layder defines the five elements thus:

The research focus indicated by the term ‘self’ refers primarily to the individual’s relation to her or his social environment and is characterized by the intersection of biographical experience and social involvements. In ‘situated activity’ the research focus shifts away from the individual towards the emergent dynamics of social interaction. ‘Setting’ denotes a research focus on the intermediate forms of social organisation (...) that provide the immediate arena for social activity. ‘Context’ refers to the wider macro social forms that provide the more remote environment of social activity (Layder 1993, 9).

While each of these elements has its own distinctive features, there are no clear empirical demarcation lines that separate them from each other. The elements should namely be viewed as interwoven layers interacting in different ways at different points in times (Layder, 1993).

Figure 4. The research map

		Element	Focus
		H I S T O R Y	CONTEXT
SETTING	Immediate environment of social activity, e.g. organization, department, team		
SITUATED ACTIVITY	Dynamics of "face-to-face" interaction		
SELF	Biographical experience and social involvements		

Carlsson, 2003; modified from Layder, 1993.

Table 1 illustrates how the four empirical chapters (i.e. Chapter 6, 7, 8 and 9) relate to the different elements of Layder’s research map. As displayed in the table, this dissertation does not address the element of “situated activity”, which focuses on the emergent dynamics of social interaction with the aim of understanding how such dynamics affect, and are affected by, “context”, “setting” and “self”. As Danermark et al. (2002, p. 179) put it: “...it can sometimes be an insurmountable undertaking to include in a single study everything the [research] map encompasses”; and while an ethnographic observation study addressing the analytical level of “situated activity” could potentially contribute with relevant insights (e.g., the gender dynamics of everyday interaction in research teams and departments), the remaining elements still enable a bridging of macro, meso and micro levels of analysis.

Table 1. Analytical strategy and types of data

Research elements	Chapter	Types of data	
		Qualitative	Quantitative
Context	Chapter 6: Comparative cross-national/cross-institutional analysis of Scandinavian frameworks and strategies for legitimating and promoting GE	Discourse and content analysis of GE-related national and institutional documents	National and institutional figures on the gender composition of research staff
Setting	Chapter 7: Gendered implications of increasing emphasis on scientific performance assessments	Interviews with department heads and analysis of appointment reports	Bibliometric analysis of research performance and publication patterns
	Chapter 8: Gendered implications of recruitment and selection practices and procedures	Interviews with department heads	Organisational recruitment statistics
Self	Chapter 9: Early career researchers' reasons for leaving Aarhus University	Interviews with department heads and former AU researchers	Survey data on work-life issues

As specified in Chapter 2, this dissertation's first step towards opening the black box of gender inequality in academia, will be to conduct a qualitative cross-national comparison illuminating the distinct paths that Scandinavian countries and universities are embarking on to address gender equality issues in academia. With the ambition of understanding the priority and value given to issues of gender equality at Aarhus University the context of broader culturally embedded discourses and understandings, this part of the dissertation situates itself in what Layder refers to as "context" (i.e. "the wider macro social forms that provide the more remote environment of social activity" [Layder, 1993, p. 9]). As Carlsson (2003, p. 6) observes, "there is no clear border between setting and context"; and while a qualitative analysis of organizational documents may also relate to the research element described as "setting", this study mainly draws on these documents to identify societal and institutional macro-level determinants contributing to explain differences in the value and priority given to issues of gender equality in different national and institutional contexts.

With particular focus on the gendered implications of organizational practices related to academic performance assessments and recruitment

and selection, Chapters 7 and 8 are situated in the research element of “setting”. This research element addresses intermediate forms of social organization, such as institutional values and cultures, power and authority structures, management practices and procedures, and tools and artifacts employed in the situated activities of everyday interaction.

Finally, Chapter 9, with an ambition of illuminating early-career Aarhusian researchers’ sentiments for leaving the university, situates itself in what Layder coins the research element of the “self”. This level focuses on how “an individual is affected by and responds to social situations” (Carlsson 2003, p. 6), and in this sense situates itself in the “intersection of biographical experience and social involvements” (Layder, 1993, p. 9). Following the logic of the research map, the social experiences of organizational agents are influenced and formed by (but also work to influence and form) the contexts and settings in which they take part, wherefore this part of the analysis will also draw on the central findings and perspectives addressed in the preceding chapters. In Chapter 5, I elaborate further on the methodological implications of Table one’s analytical differentiation regarding qualitative data, i.e. selection of interviewees, framing of interview-guide.

Before proceeding, it is important to emphasize that the four empirical chapters, despite their anchoring at differentiated levels of analysis, may relate to, or straddle, several of the outlined research elements. Table 1 should therefore merely be viewed as a visualization of the central research elements addressed in each of the chapters, whereas interacting elements and layers of analysis will also be discussed.

3.1.5. Scientific inferences and thought operations in critical realist social research

Critical realism relies on abstraction and conceptualization as pivotal elements of the research process. As noted by Danermark et al. (2002, p. 21), theorizing helps us move beyond a merely empirical investigation of the world and “identify relationships and non-relationships between what we experience, what actually happens and the underlying mechanisms that produce events in the world”. However, the use of theory and abstraction in this approach is not associated with generality in the sense of “repeated series of events” (ibid, p. 121). In opposition to positivist science, critical realism does not seek to develop predictive and explanatory conceptions of regular relationships identified in the social world. Rather, it aims to “conceptualize events, mechanisms and internal relations” (ibid, p. 121) related to a given empirical phenomenon by drawing on relevant theoretical perspectives. As

pointed out by Danermark et al. (2002, 120), theoretical “concepts provide an abstract language enabling us to speak about qualitative properties, structures and mechanisms”. In the critical realist tradition, the use of theoretical conceptualizations therefore, can be viewed as an activity drawing on abductive as well as retroductive modes of inference.

Charles S. Peirce, who coined the term “abduction”, describes this mode of inference as both a logical form comparable to induction and deduction, and a fundamental aspect of all observations of reality (Peirce, 1932; cf. Danermark et al., 2002). In opposition to induction and deduction, abduction is neither purely empirical generalization nor logically rigorous reasoning. It starts with an empirical event/phenomenon (in this case the skewed gender distributions at the upper ranks of the academic profession), which it relates to a rule external to the event, thus leading to a new supposition about the phenomenon under investigation. As Danermark et al. (2002, p. 90) put it, the “rule” in social research “is most often a frame of interpretation or a theory, and the conclusion [i.e. the supposition] (...) is a new interpretation of a concrete phenomenon – an interpretation that is plausible, given that we presuppose that the frame of interpretation is plausible”. By interpreting a given case in view of a selected frame of interpretation, the social researcher, in other words, obtains new insights about the case, through an analytical process of redescription or recontextualization. Many prominent sociological theorists have made use of redescription and recontextualization as a means to give new meaning to an already known phenomenon, and social science discoveries are, in this sense, often associated with abduction.¹³ In view of critical realism’s inherent explanatory ambition, “abduction becomes a manner of acquiring knowledge of how various phenomena can be part of and explained in relation to structures, internal relations and contexts which are not directly observable” (Ibid., p. 92). Since our access to the structures and mechanisms of reality is limited to empirical experiences, such structures and mechanisms have to be theoretically constructed and modelled through abstraction and conceptualization (Rees, 2012). Abduction is a useful analytical strategy in this regard. It provides a deeper understanding of the case under investigation, by introducing new ideas about how individual phenomena relates to underlying structures, while also opening an opportunity to test, modify and ground theories within the frame of new social contexts (Danermark et al., 2002).

¹³ Durkheim (1897), for instance, redescribed the suicide in terms of a social fact, while Giddens (1991, p. 107) has recontextualized anorexia as an outcome of reflexive identity formations in post-modern society (Danermark et al., 2002).

However, critical realist-driven social scientific explanation is not merely about using theories as interpretive frames for gaining deeper understandings of the social world. It is also about conceptualizing the “fundamental, transfactual conditions for the events and phenomena under study” (Ibid., p. 96). A valid critical realist explanation is dependent on: a) The identification of a mechanism, which is capable of explaining a social phenomenon; b) convincing evidence for the existence of the mechanism and; c) an elimination of equally good alternative explanations (Carlsson, 2003). “Retroduction” is a vital mode of inference in this type of explanation. As observed by Danermark et al. (2002, p. 96), retroduction:

... seeks to clarify the basic prerequisites or conditions for social relationships, people’s actions, reasoning and knowledge. The term ‘conditions’ here means the circumstances without which something can’t exist. In such argumentation we try at the same time to separate the necessary conditions from contingent circumstances.

Put differently, retroduction is a transfactual form of argumentation aiming to move beyond the merely empirical, by questioning what properties must exist for a given phenomenon to exist and be what it is. Like abduction, retroductive reasoning is a widely used analytical strategy in sociological theory-development.¹⁴

In sum, both redescription and recontextualization (in terms of abductive reasoning) and reconstruction (in terms of retroductive argumentation) make up indispensable tools in critical realist explanatory endeavors. This, however, does not imply that deductive and inductive inferences are left out of the critical realist ‘toolbox’. Rather, the four modes of inference should be seen as complementary but different “ways of relating the specific to the universal and general” (Danermark et al., p. 113).

In *New Strategies in Social Research* (1993), Derek Layder develops an alternative to the classical social scientific research strategies of theory testing and theory construction. This alternative builds on the stronger features of Merton’s middle range theory and Glaser & Strauss’ grounded approach while seeking to exclude their less useful features. In Layder’s (1993, p. 15) view, theories should be conceived frameworks of associated concepts, propositions and world views that serve to guide our attention as social researchers. He advocates for a social scientific approach leaving “room for

¹⁴ Jürgen Habermas (2000, p. 26), for instance, has coined the term “reconstructive science” to describe his own endeavors to reconstruct the basic conditions for communicative action (cf. Danermark et al., 2002).

more qualitative, open-ended forms of theory (rather than ones that narrowly specify the relations between precisely measurable variables)” (Layder, 1993, p. 15). This approach combines aspects of theory testing with more diffuse and exploratory strategies. For instance, existing middle range hypotheses about a given social phenomenon might prove to be valuable starting points for more exploratory types of research strategies, while more abstract theoretical frameworks in other cases may help to guide the empirical analysis. Layder’s so-called “realist approach”, in this sense, illustrates how open-ended forms of theory may function both as frameworks of interpretation (i.e. abduction) and as analytical tools in our retroductive endeavors to identify the underlying constitutive properties of a given social phenomenon (Danermark et al., 2002). In the following, the theoretical concepts and perspectives employed in this dissertation will be discussed in closer detail.

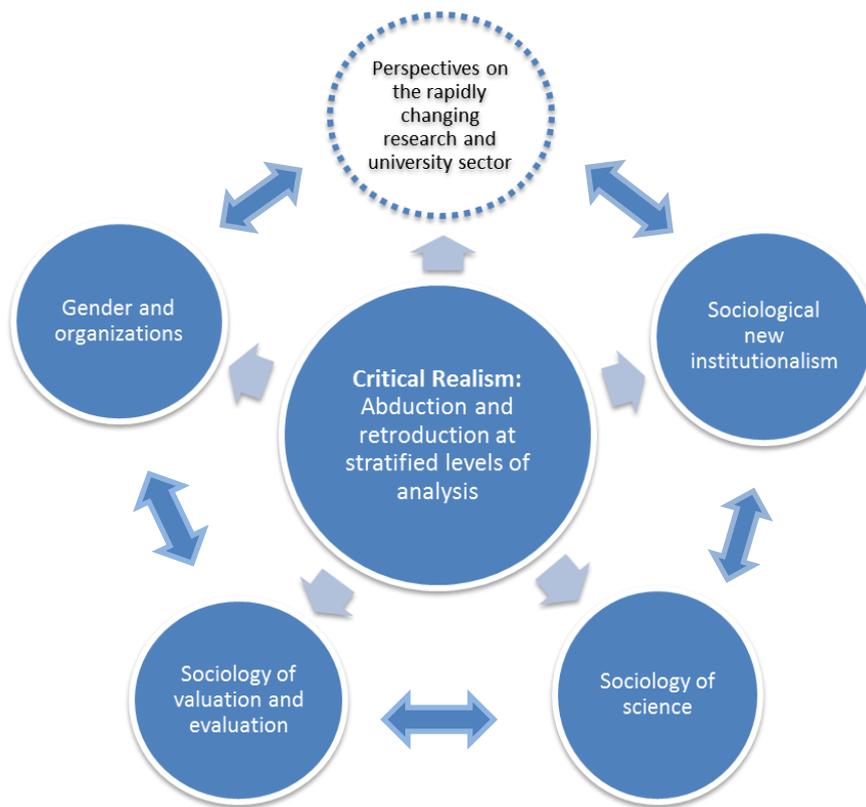
3.2. Theoretical framework

As described in the preceding sections, critical realist social research relies on theoretical abstraction and conceptualization as pivotal elements in the research process. More specifically, the critical realist approach uses theories as frames of interpretation to obtain a closer understanding of social meanings and mechanisms, through abductive and retroductive modes of inference (Danermark et al., 2002, p. 92).

Figure 5, below, provides an overview of the four strands of scholarship contributing to this dissertation’s interpretive framework. With critical realism as meta-theoretical starting point, I have drawn on insights from sociological new institutionalism, theories on gender in organizations, sociology of science and sociology of valuation and evaluation with the purpose of carving out a number of key concepts and perspectives capable of addressing the object under study from various perspectives and at various levels of analysis. As specified in Table 2, some of these theoretical concepts and perspectives will function as overriding themes and premises guiding the main focus and argument of the dissertation, while others will be employed at stratified levels of analysis for specific purposes and goals.

As a background context for my description and discussion of the theoretical framework, I will start out by outlining the main characteristics of the rapidly changing research and university sector and highlight its inherent paradoxes from a gender perspective.

Figure 5. Overview of the interpretive framework



3.2.1. New modes of knowledge and new modes of governance

The interplay of science and society has been undergoing crucial changes since the early 1990s. While the scientific community has traditionally been viewed as an autonomous and self-regulating system – with a set of internal quality criteria – capable of producing ample knowledge-based benefits to meet the demands of the political community (Polanyi, 2000), public sector academic organizations are increasingly subject to strategic political planning driven by ambitions to align the scientific knowledge production with broader societal and economic demands (Etzkowitz & Leydesdorff, 2000; Gibbons et al., 1994; cf. Aagard & Mejlgaard, 2012). As part of a more overriding NPM-influenced reorganization of state bureaucracies (Hood, 1995), universities have been intertwined with new modes of research governance aiming to create more productive and efficient scientific organizations. This development has led to an increasing political emphasis on ensuring the efficiency, quality and societal relevance of research through ongoing evaluation and documentation (Aagard & Mejlgaard, 2012; Alexander, 2000; Weingart, 2005). Moreover, universities in a response to political demands have introduced decentralized systems of responsibility, increased man-

agement autonomy, as well as new procedures of accountability and assessment directed at evaluating and controlling organizational performance (Deem & Brehony, 2005; Gläser & Laudel, 2007; Gornitzka & Maassen, 2000).

3.2.1.1. The knowledge-based economy

Internationally, the OECD has played a central role in promoting the policy paradigm of the “knowledge-based economy” as a pivotal arena for contemporary global competition (OECD, 1996; Jessop, 2008, p. 26), and with the World Bank’s report on “the challenge of establishing world-class universities” (Salmi, 2009), the rhetorical emphasis on issues of high performance and market-type competition in university governance has become more prevalent than ever before. According to Jessop (2008), three of the main trends of this paradigm’s entry into the policy fields of research and higher education are: increased emphasis on development and retention of human capital; promotion of entrepreneurialism; and the establishment of a strong knowledge base.

Much like the OECD, the European Commission has played an important role in defining and promoting this political paradigm by making the question of global competitiveness a key element in the EU policy discourses (Mulderigg, 2008, p. 159; Muntigl et al., 2000). This, for instance, is illustrated in the two excerpts presented below from the “new Lisbon” strategy and the vision document “Europe 2020”:

In advanced economies such as the EU, knowledge, meaning R&D, innovation and education, is a key driver of productivity growth. Knowledge is a critical factor with which Europe can ensure competitiveness in a global world (European Commission, 2005a, p. 21).

Smart growth means strengthening knowledge and innovation as drivers of our future growth. This requires improving the quality of our education, strengthening our research performance, promoting innovation and knowledge transfer throughout the Union (European Commission, 2010b, p. 9).

The launch of the Bologna Declaration in 1999, and its objective of increasing the competitiveness and attractiveness of the member states’ higher education systems by harmonizing and rendering compatible the educational structures of each system, has also played an important role in this development (Van der Wende, 2001, p. 251). In the formulations of the Bologna Declaration, the EU member states have found substantial arguments for enhancing the competitiveness of national higher education systems, with

clear repercussions on the national research systems (Kalpazidou Schmidt, 2006).

3.2.1.2. New Public Management

As argued by Meek et al. (2010), any scholarly discussion of the changing higher education system must be placed in the broader context of NPM, since such a contextualization serves to illustrate the complex myriad of conflicting values and ideals influencing the governance of contemporary academic organizations.

During the 1980s, many OECD countries experienced a shift in public management towards what Power and Laughlin (1992) have coined “accountingization”. This shift became central to the rise of what we today describe as NPM (Hood, 1995). A key principle in this mode of public steering is that efficiency and effectiveness in service delivery is best achieved on the basis of private sector management techniques such as contractualized performance agreements, decentralized decision-making, performance targets and output objectives, and a strong focus on service quality and market-type competition (Keating & Shand, 1998; Meek et al., 2010). Theoretically, this managerial model ascribes to Public Choice Theory’s central tenet “that all human behavior is dominated by self-interest” (Boston 1991, p. 2). Therefore, market competition, in this paradigm, is also considered a better strategy for delivering value for public expenditures than centralized bureaucratic regulation (Meek et al., 2010).

As Olssen (2002) notes, the introduction of NPM into higher education systems has led to a transition from a collegial governance model based on leaders and a community of scholars using democratic voting as a means to achieve professional consensus in decision-making, towards a model relying on a contractualized relationship between managers and employers as a means to maximize output and pursue financial profits (cf. Li et al., 2013).

Traditionally, universities have been described as “loosely coupled systems” (Weick, 1976) or “organized hierarchies” (Cohen et al., 1972) with a high degree of autonomy, strong professional norms (Mintzberg 1983) and flat organization structures (Clark, 1983). Especially professors have valued their autonomy to determine and define the substance and focus of their work activities. As Altbach (2000, p. 13) observes:

Few occupations have enjoyed the freedom of the professoriate to control the use of their time and the focus and range of productivity. In Europe, particularly, the ideals of professional autonomy combined with academic freedom in the

classroom and laboratory have been hallmarks of the professoriate and remain primary values of the profession.

However, as a result of the expanding political focus on ensuring and promoting the efficiency, quality and economic relevance of academic work through NPM inspired governance models, such classical academic values and organization forms have come under increasing pressure. Several authors have already pointed to the negative implications of this development in terms of increasing time-demands, precarity and individualization (Altbach, 2000; Musselin, 2008; Gumpert, 1997; Parker & Jary, 1995; see also Chapter 2).

According to Altbach (2000), academia has historically been characterised by low levels of accountability. In fact, academics “have been trusted to perform at an acceptable level of competence and productivity for centuries without any serious measurement of academic work” (Ibid., p. 14). While rewards and recognition of personal talents have always been a central norm in academia (Merton, 1968), the strong personalization of research performance traditionally restricted itself to renowned scientists, whereas “all others formed an indefinite group of unknown contributors” (Musselin, 2008, p. 51). In the wake of recent higher education reforms, quantitative performance measures have come to the fore, and nowadays not only universities but also faculties, departments, research groups and individual researchers are held accountable for the efficiency and quality of their work (Gläser & Laudel, 2007; Morley, 2005; Astin, 2012). As observed by Musselin (2008), not only managers but also researchers themselves to an increasing extent take part in this process. With the recent decade’s access to scientific performance measures, such as citation-indexes, journal impact factor scores and the hirsch-index, “amateur bibliometrics” (i.e. the application of bibliometrics by academics and managers lacking the professional expertise to use and interpret these measures properly [Gläser & Laudel, 2007]), is becoming an entrenched practice in an increasingly competitive and individualized academic system.

3.2.1.3. Universities in transition

As illustrated, political pressures and demands have prompted a reconfiguration of the relationship between society at large and academic institutions with respect to the question of obtaining the appropriate balance between “independence and control, incentives and constraints, as well as costs and benefits” (Gumpert and Sporn, 1999, p. 104). The implications of this devel-

opment have been conceptualized in a variety of ways addressing different aspects of the changing context of academic work.

In 1983, Etzkowitz (1983) coined the now widely used notion of the “entrepreneurial university” to describe American academic institutions’ increasing correspondences with industry and emphasis on “third mission” activities (see also Clark, 1998; Etzkowitz, 2003; Van Vught, 1999). Elaborating on this idea, Gibbons et al. (1994) have pointed to the paradigmatic transformation of science and its institutions from a “Mode 1” characterised by theoretically driven and experimental research conducted in autonomous academic settings sequestered from society, towards a “Mode 2” where scientific knowledge production is increasingly “socially distributed, application-oriented, trans-disciplinary, and subject to multiple accountabilities” (Nowotny et al., 2003). Etzkowitz and Leydesdorff (2000) have identified the emergence of a “triple helix” configuration of the relationship between state, university and industry, while Slaughter and Leslie (1997) and Parker and Jary (1995) have described the increasing managerialization and economization of higher education in terms of “academic capitalism” and “McUniversity”.

Regardless of its varying labels, there is little doubt that academic institutions have been, and still are, undergoing comprehensive transformations; and these changes may serve to create both new opportunities and barriers to gender equality in research. Husu (2013, p. 19) points to a paradox of change in the gender relations of academic institutions:

How can we understand the contradiction between rapid ‘non-gendered’ changes, on the one hand, and the widely observed gender inertia or lack of change in gender relations in academic and scientific organisations, on the other?

Flicker et al. (2010, p. 132) further elaborate on this question:

Given that conditions for inclusion of women in academia ought to be more favorable in times of formalization (...) the question rises, what makes women’s academic careers still very fragile? Why do women rather than men fail to get access to more stable and secure employment contracts, even though measurements of quality assurance in the sciences were supposed to improve career conditions?

In order to address these paradoxes, Husu (2013) calls for further investigations of a) the role of gate-keepers in promoting, facilitating or preventing change towards gender equality; b) the gendered aspects and consequences of emerging initiatives and programmes bearing the “excellence” label; and c) the changing role of gender equality interventions in academic

and scientific organizations. As described earlier, this dissertation aspires to contribute with relevant new insights on each of these questions on the basis of a stratified analysis addressing macro-, meso and micro-level aspects of the gender equality problem.

In the following sections, I will briefly outline each of the four branches of scholarship drawn upon in the empirical chapters. Due to the dissertation's integrated paper format, the selected theories and analytical frameworks will be further elaborated and operationalized in each of the seven enclosed scholarly papers. This chapter's outline should, for obvious reasons, therefore not be seen as an attempt to fully account for the selected conceptual frameworks involved. Rather, the purpose will be to provide an overview of the broader theoretical themes and questions guiding the overall focus of the dissertation, as well as the middle-range theories and analytical frameworks employed in the empirical investigations. After presenting each of the four strands of scholarship, I will specify how the presented concepts and frameworks relate to the differentiated levels of analysis discussed in section 3.3. (see Table 2).

3.2.2. Institutions and Organizations

Drawing on sociological new institutionalism, this dissertation ascribes to Richard Scott's (2008, p. 56) conception of institutions as "regulative, normative and cultural-cognitive elements that together with associated activities and resources provide stability and meaning to social life". As opposed to formal organizations, which are "generally understood to be systems of coordinated and controlled activities that arise when work is embedded in complex networks of technical relations and boundary-spanning exchanges" (Meyer & Rowan 1977, p. 340), institutions are the more enduring social values and features, that provide relatively stable patterns of human activity across time and space (Giddens 1984, p. 24; Scott, 2008; Turner, 1997). To institutionalize is "to infuse value beyond the technical requirements of the task at hand" (Selznick, 1957, p. 17). The institutional aspect of organizations is, in other words, what supplies "intrinsic worth to a structure or process that, before institutionalization, had only instrumental utility" (Scott, 2008, p. 57). In this regard, it is relevant to note that new institutionalism, due to its "ecological level of analysis" (i.e. the ambition of understanding organizations in larger systems of relations) (Gumport & Sporn, 1999), regards organizational structures as something arising in already highly institutionalized contexts (Meyer & Rowan 1977, p. 340). With reference to Berger and Luckmann's aforementioned idea of social reality as a dialectical process, institutions are

both the starting point and product of social interaction. They are “ongoingly ‘brought to life’ in actual human conduct” (Berger & Luckmann 1967, p. 75), and they operate to produce shared understandings of what is regarded as meaningful and appropriate behavior in a given social setting (Zucker, 1983, p. 5).

From a new institutionalist point of view, universities can be conceived as organizations with both technical and institutional environments. The technical environments relate to the “production and control technologies, patterns of inter-organizational exchange, regulatory processes, and other factors that lead to relatively more or less efficient or effective forms of organization” (Orrù, et al., 1991, p. 361). The institutional environments, on the other hand, are “characterized by the elaboration of rules and requirements to which individual organizations must conform if they are to receive support and legitimacy” (Scott & Meyer, 1983, p. 140). As Meyer and Rowan (1977) put it, external pressures will lead organizations to integrate “rationalized myths” into their structures, policies and procedures to signal adherence to collectively valued purposes (Meyer & Rowan, 1977). Whereas the technical environment, in this sense, puts demands on universities for efficiency and guides the productive process, the institutional environment provides the norms, beliefs and values ensuring its legitimacy in society.

While analytically separated, institutional and technical environments are in fact mutually constitutive (Orrù, et al., 1991; Powell, 1991). This means that institutional values and rules influence core organizational processes and vice-versa.

To provide a concrete example, the abovementioned external pressures and demands prompting reconfigurations of the relationship between society and university, and university-managers and research staff, entail new forms of interactions between institutional and technical environments. Whereas the formal structure of universities traditionally derived “less from demands for technical efficiency than from needs to maintain their legitimacy in society” (Meyer & Rowan, 2006, p. 3), the technical environment has now come to the fore, which has resulted in more tightly coupled and narrowly controlled practices in universities (Ibid, p. 2). However, since institutional arrangements are path dependent on and emerge as a result of preexisting regulative, normative and cultural-cognitive formations, this may entail a myriad of conflicting values and ideals in the governance of contemporary academic organizations. As Meyer and Rowan note, organizations in highly institutionalized environments, such as universities, may face challenges in maintaining legitimacy of two reasons:

First, technical activities and demands for efficiency create conflicts and inconsistencies in an institutionalized organization's efforts to conform to the ceremonial rules of production. Second, because these ceremonial rules are transmitted by myths that may arise from different parts of the environment, the rules may conflict with one another. These inconsistencies make a concern for efficiency and tight coordination and control problematic (Meyer & Rowan, 1977, p. 354).

In view of the NPM-driven reforms discussed in section above, it is reasonable to contend that many universities are experiencing increased levels of conflict in linking the generalized rules of the institutional environment with its technical activities; but also in combining inconsistent ceremonial elements with one another (i.e. structures, policies and procedures signaling legitimacy). Put differently, external demands for efficiency, quality and economic relevance increase the pressure on day-to-day activities and at the same time spawn conflicting rationalized myths. A concrete example, of relevance to this thesis, concerns the prevailing managerial ethos of transparency and efficiency. While universities nowadays are expected to signal legitimacy by adhering to both of these "rationalized myths", this may be difficult, since transparency sometimes tends to be at odds with efficiency-driven rationales for action. Another example concerns the implementation of gender equality policies at universities. While such initiatives are "assumed to be oriented to collectively defined and often collectively mandated ends" (Meyer & Rowan, 1977, p. 349), their implications (e.g., in terms of revised criteria for assessments of scientific merits) may conflict with other rationalized myths, such as the prevailing ideas about meritocracy and excellence. These inconsistencies and conflicts create enormous uncertainties in organizations and may in some situations lead managers and professionals to decouple their everyday practices from the formal ceremonial purposes of the organization (Dobbin et al., 2009; Meyer and Rowan, 1977). When organizations "decouple", they claim to adapt to the pressures exerted by external institutional constituents, while they are in fact sustaining entrenched routines that are at odds with these pressures (Dobbin and Kalev, 2009; Meyer and Rowan, 1977). As Boxenbaum & Jonsson (2008, p. 79) note:

... organizations decouple their formal structure from their production activities when institutional and task environments are in conflict, or when there are conflicting institutional pressures. Decoupling enables organizations to seek the legitimacy that adaptation to rationalized myths provides while they engage in business as usual.

Sociological new institutionalism provides important insights into our understanding of the contextual features and exogenous pressures influencing and forming what is considered to be the legitimate criteria for valuing and prioritizing tasks and responsibilities in highly institutionalized organizational settings. It reminds us that interests and purposes in organizations not merely reflect technical demands and resource dependencies, but are also defined and shaped by institutional elements and belief systems rationalized over time (Meyer & Rowan, 1977). To investigate the institutional aspect of organizations, is in other words to recognize the impact of social and cultural factors on how organizations work and actors make decisions. As Meyer and Rowan (2006, p. 7) assert, new institutionalism “unlike rational choice notions of economic behaviour (...) does not see individuals as autonomous authors of their preferences. Rather, their preference formation takes place within the constraints of the ‘preferences’ imposed by the institutional settings”.

In this dissertation, the sociological new institutionalist perspective on organizational legitimacy as illustrated in Table 2 will function as an implicit framework for understanding the value and priority given to gender equality related issues at Aarhus University at different levels of analysis. Moreover, I will draw explicitly on the sociological institutionalist idea of coupling and decoupling, as well as the literature on institutions and networks in my investigations of the role of gender in academic recruitment and selection processes. This leads us to the second strand of scholarship, which focuses particular emphasis on the role of gender in various types of organizational settings.

3.2.3. Gender and Organizations

An ongoing discussion in the literature on gender and organizations relates to the question of whether formalized bureaucracy counteracts or promotes gender discriminatory practices (Roth & Sonnert, 2011). Feminist scholars, such as Acker (1990) and Ridgeway (2001), have claimed that organizations are inherently gendered; wherefore strong bureaucracy may not necessarily weed out gender discrimination. Acker (1990), for instance, asserts that subtle assumptions about gender constitute an inherent part of how allegedly gender neutral organizations and bureaucracies are structured. These assumptions permeate everything from work rules and job descriptions to pay scales and job evaluations. Formalized bureaucracy is, according to her part of the problem rather than the solution, and more fundamental organizational and institutional transformations will be needed to overcome gender stratification.

Others scholars, however, assert that formalized bureaucracy impede “social closure” by preventing organizational gate-keepers from creating barriers to the entrance of dissimilar others (Tilly, 1998; cf. Smith-Doerr, 2004). As Kanter (1977a) illustrates in her widely influential work on *Men and Women of the Corporation*, male decision-makers’ desire for organizational certainty, in terms of shared values and behavior, may often lead to “homo-social reproduction” and the exclusion of individuals (including women), who are considered different from the norm. Following this logic, scholars have argued that formal policies are likely to prevent gender discrimination, since gender homophily (i.e. to prefer someone similar to oneself), when out in the open, is more difficult to sustain (Smith-Doerr, 2004; Roth & Sonnert, 2011).

Reskin & McBrier (2000), for instance, illustrate how open recruitment methods, as opposed to recruitment through informal networks, lead to greater shares of women in management jobs, while Roth and Sonnert (2011) show that anti-bureaucratic organization structures in academic settings work against women scientists’ career advancement by creating space for “a high degree of flexibility in applying and enforcing regulations; a low emphasis on disseminating information through official channels; and a relatively strong reliance on informal rules and tacit knowledge” (Ibid., p. 19).

Smith-Doerr (2004) provides a third perspective on the question by showing that American life science PhDs in network-intensive biotech firms are, “nearly eight times more likely to lead scientific projects than in more hierarchically organized academic and pharmaceutical corporate settings” (Ibid 6). On this background, she concludes that less hierarchical, network-based organizations are better workplaces for women since “hierarchy and rules hide gender bias, while reliance on ties outside the organization provides transparency and flexibility” (Smith-Doerr 2004, p. 25).

In sum, formalized bureaucracy may operate both to advance and counteract gender equality in academic organizations, which has led Ridgeway (2009, p. 153) to conclude that:

... there is no simple answer to the ‘are formal rules best’ question. But a consideration of the joint effects of the gender frame and the organizational frame allows us to specify how the answer to this question varies systematically with the nature of the context.

This dissertation provides a number of empirical cases (i.e. Paper 3, Paper 5 and Paper 6) to further consider what Ridgeway describes as “the joint effects of the gender frame and the organizational frame”. By investigating different aspects of how increased transparency influences women’s advancement in the Danish academy, the ambition here is to contribute with

new insights on the still unresolved question of whether, when and how formalized bureaucracy benefits gender equality.

3.2.4. Sociology of science

As described by Ben-David and Sullivan (1975, p. 203), the sociology of science “deals with the social conditions and effects of science, and with the social structures and processes of scientific activity”. Robert K. Merton, one of the towering figures of this research tradition, in 1942 proposed a “scientific ethos” consisting of four institutional norms distinguishing the work of academics from other types of social activity. The ethos of science, as Merton (1942, p. 269) notes:

... is that affectively toned complex of values and norms which is held to be binding on the man of science. The norms are expressed in the form of prescriptions, proscriptions, preferences, and permissions. They are legitimized in terms of institutional values. These imperatives, transmitted by precept and example and reenforced by sanctions are in varying degrees internalized by the scientist, thus fashioning his scientific conscience.

The scientific ethos, in other words, provides guidance to the members of the scientific community through institutionalized understandings of what is conceived as appropriate and expected scientific behavior (Anderson et al., 2013). The first of the four Mertonian norms, “universalism”, revolves around the idea of science as the application of “pre-established impersonal criteria”, i.e. the shared commitment to judge knowledge claims irrespective of the personal and social attributes of the academics involved in developing these claims. Moreover, universalism implies “that to restrict scientific careers on grounds other than lack of competence is to prejudice the furtherance of knowledge” (Merton 1942, p. 272).

The second norm, “communism”, refers to the idea of scientific knowledge in the sense of a common ownership. It is considered the product of social collaboration and thus assigned to the scientific community as a whole. In other words, science is conceived as part of the public domain, and academics are committed to the imperative of communicating their findings for the greater good and advancement of knowledge (Merton, 1942). This leads us to the third norm, “disinterestedness”, according to which science is conceived as an activity motivated and rewarded through recognition of fellow experts, rather than emotional or financial interests. Scientists, according to Merton, in comparison to individuals taking part in other spheres of activity, hold unusual degrees of moral integrity and will engage in the quest for truth,

even when this truth is at odds with their own scientific contributions. Finally, Merton coins the norm of “organized skepticism” to describe the methodological and institutional mandate among scientists to remain skeptical about scientific findings and let these findings undergo critical scrutiny until all the facts are in place (Merton, 1942).

To briefly sum up, Merton’s proposed norms represent an image of the scientific community as “predominantly open-minded, impartial and objective” (Mulkay, 1976, p. 637). It is defined by clear social expectations to which academics are obliged to conform in their scientific endeavors. Since scientific advancement, following this logic, adheres to the social expectation of “pre-established impersonal criteria”, sociological scholars in the tradition of Merton have also interpreted the social stratification of science (e.g. women’s underrepresentation in the upper ranks) as a natural outcome of differences in work intensity, competence and talent (see, e.g. Cole & Cole, 1973).

Several social constructivist scholars have contested Merton’s idea of the normative structure of science. Some have interpreted the scientific ethos as ideology (Mulkay, 1976; Gieryn, 1983), while others have proposed counter-norms such as “particularism”, “solitariness”, “interestedness” and “organized dogmatism” (cf. Mitroff, 1974). Despite occasional renewed objections (Anderson et al., 2010), the Mertonian norms still tend to operate as “rationalized myths” (Meyer & Rowan, 1977) or “vocabularies of justification” (Mulkay, 1976) serving to legitimate and maintain general conformity to the professional actions of academics, within and outside the scientific community (Anderson et al., 2010).

This, for instance, is illustrated in the image of science as a gender-neutral ‘culture of no culture’ (Traweek, 1988, p. 162). As shown by several scholars in the field of gender equality in higher education, this image appears to be prevailing among both male and female scientists and research leaders, to whom scientific career advancement is primarily a question of competencies and merit (Bagilhole and Goode, 2001; Cech and Blair-Loy, 2010; Dryburgh, 1999). In this dissertation, I will mainly draw upon Merton’s scientific ethos as an implicit analytical starting point for investigating how normative conceptions of science intermingle with ideas about gender, when heads of department recruit, evaluate and appoint candidates for senior research positions (i.e. positions at associate professor-level and full professor level).

3.2.4.1. The gate-keepers of science

Another pivotal Mertonian idea of relevance to this dissertation is the concept of gate-keeping. Hellström (2003) describes this function as a principle for inclusion, exclusion and interaction in academia, and as a central institutional mechanism in the maintenance and reproduction of prevailing scientific norms. Merton (1973) in an essay on age structure in science highlighted gate-keeping as one out of four central functions (or roles) of the academic, alongside with research, teaching and administration. As Kalleberg (2012) notes, it is perhaps more useful to think of gate-keeping as a subtask within the three additional academic functions. By this is meant that gate-keeping takes place in research (e.g. in terms of selecting participants for research projects), in teaching (e.g., when candidates are identified for PhD programs) and in administration (e.g., when research vacancies are announced and applicants are evaluated and selected).

Gate-keepers are in control of who enters a particular scientific arena; how resources are allocated; how criteria and standards of scientific quality are developed and defined; how information flows; and how the content and focus of scientific fields are formed and developed over time (Husu & Cheveigné, 2010). Furthermore, they influence policy decisions, agenda setting, and strategic decisions concerning resource streams and academic posts (Kalpazidou Schmidt, 2012). Merton, himself, describes the central tenet of the gate-keeper as the “continuing or intermittent assessment of the performance of scientists at every stage of their career” (Merton, 1973, p. 522); and since social practices of assessment and evaluation, as elaborated in the following, are contingent on conceptual, normative, cultural and institutional dimensions, gate-keepers can serve as useful sources of information in the investigation of the complex and potentially gendered aspects how research performance is measured, how selection and appointment criteria are defined and how potential candidates for research posts are recruited and selected. In this dissertation, I have chosen to focus attention on the Aarhusian department heads and their roles as gatekeepers and representatives of the prevailing scientific norms and institutional values (more on this in Chapter 4).

3.2.4.2. Cumulative disadvantages

In addition to the concepts presented above, a central cross-cutting theoretical theme adopted from the sociology of science literature is Cole & Singer’s (1991) corollary to Merton’s idea of the cumulative advantage. As touched upon in the introduction, Cole and Singer developed the concept of the *cu-*

mulative disadvantage to explain how issues of gender affect the course and pace of women's academic careers through a number of negative kicks and drawbacks that will accumulate over time (see also Valian, 1999a; Caplan, 1993). In this dissertation, the idea of the cumulative disadvantage will be employed as an underlying frame of interpretation guiding the empirical investigations and serving as a prism for integrating the central findings identified in the seven scholarly papers into a broader understanding of the persistent gender inequalities in academia.

Since organizational processes and practices of valuation and evaluation can be viewed as closely connected to the question of how and why gendered disadvantages arise in academic settings, the final conceptual foundation of this dissertation originates from theoretical contributions related to the sociology of valuation and evaluation.

3.2.5. The Sociology of Valuation and Evaluation

How we value matters because it helps us to know who we are, and a plurality of forms of value can make life richer and more passionate as well as more rational (Espeland & Stevens, 2008, p. 432).

In a 2012 article in *American Review of Sociology*, Michelé Lamont prepared the ground for a new disciplinary sub-field under the umbrella label "Sociology of Valuation and Evaluation" (henceforth SVE). As she notes, the sociological ambition of finding answers to "the main social problems facing contemporary societies (...) requires a better understanding of valuation and evaluative processes and practices" (Lamont, 2012, pp. 202-203). Following in the wake of Lamont's article, a new journal under the title *Valuation Studies* was inaugurated in 2013, and a relatively diverse strand of social scientific scholarship concerned with investigating how value is defined, produced, dispersed, assessed and institutionalized (Lamont, 2012), has now found common ground.

Much of the existing literature relating to the SVE sub-field focuses on unveiling varying types of (e)valuation criteria by illuminating these in the context of the institutions and social/cultural settings, in which they operate (Lamont, 2012). As Stark (2011) puts it, the central puzzle in (e)valuation studies is to understand "What counts?" (Ibid, p. 6), "What is valuable and by what measures?" (Ibid., p. 6), and "Who counts?" (Ibid., p. 25). In this regard, it is relevant to make a distinction between practices of valuation (i.e. ascribing worth or value to a given entity) and practices of evaluation (i.e. the assessment of how an entity attains value or worth) (Lamont, 2012). Since evalua-

tors, as observed by Lamont (2012, p. 205), “often valorize the entity they are to assess as they justify to others their assessment”, practices of valuation and evaluation often intertwine. Beckert (2009, p. 253) has described this as “the value problem”, i.e. the classificatory and commensurate practices through which actors ascribe value to phenomena. Sociological investigations of such processes are often concerned with understanding how actors negotiate, agree or disagree on the value of a given entity (individual or object), and how technical environments function as levers or barriers in the formation of value systems (Helgesson & Muniesa, 2013; Kjellberg et al. 2013). Issues of equality and meritocracy can be viewed as closely connected to the SVE, since variations in status systems often affect what is to be evaluated and on which premises this evaluation takes place (Lamont, 2012). In Lamont’s (2012) review of the social processes addressed by SVE, she distinguishes between dynamics of “categorization” and “legitimation”. Categorization dynamics concern a wide-range of practices related to determining the category or group in which a given individual or object under evaluation belongs. This type of dynamic comprehends sub-processes such as classification (e.g., Vatin, 2013), symbolic boundary-work (e.g., Lamont, 2001; Epstein 2007), commensuration (e.g., Espeland & Stevens, 1998), logics of equivalence and difference (e.g., Laclau & Mouffe, 2001) standardization (e.g., Timmermans & Epstein, 2010), and framing (e.g. Ferree, 2003). Legitimation dynamics, on the other hand, revolve around the question of how the criteria for valuing or evaluating a given entity are contested, negotiated, stabilized, ritualized and institutionalized (Lamont, 2012).

This dissertation draws on a number of theoretical and analytical contributions adhering directly or indirectly to the umbrella label of SVE. The following pages provide a brief introduction to each of the central frameworks and reflect upon how they add to our understanding of the gendered aspects of (e)valuation in academic settings.

3.2.5.1. Regimes of justification

In *De la Justification*, the French sociologist Luc Boltanski and co-author economist Laurent Thévenot (henceforth B&T) develop a theoretical framework for understanding how individuals legitimate (or justify) their opinions and actions in situations of disagreement and dispute. According to the authors, there are critical moments in social life, when:

... people involved in ordinary relationships, who are doing things together – let us say in politics, work, unionism - and who have to coordinate their actions

realize that something is going wrong; that they cannot get along anymore; that something has to change (B&T, 1999, p. 359).

In situations like these, individuals most frequently end up expressing their discontentment, which will lead to disputes involving exchanges of criticism, grievances, and blames (Boltanski & Thévenot, 1999, p. 360). B&T investigate the common features of these situations and outline an analytical framework addressing “the disputing process in a complex society” (Ibid., p. 360).¹⁵ The underlying logic of this analytical framework is that human beings have at their disposal a metaphysical capacity, a certain “sense of justice”, that makes them capable of transcending particular situations of dispute by referring to specific “principles of equivalence”¹⁶ (Boltanski & Thévenot, 2000, p. 213; Albertsen, 2005, p. 75). In order to identify these principles, the authors construct the model of analysis of the “orders of worth” (modèle de cité). Abducing from classical works in political theory, they develop a series of coexisting orders of worth, each characterizing an established order “according to which agents place value on people and things” (Thévenot 2002, p. 189). As illustrated by Jagd (2011), studies have already found B&T’s framework useful in the investigation of order and change in organizational settings, especially in unveiling the competing and contradictory rationalities permeating organizations (Jagd, 2011, p. 343-359).¹⁷ In Chapter 6 (Paper 1), B&T’s theoretical model of the orders of worth will be employed in a comparative analysis illuminating how six Scandinavian universities legitimate, or justify, their gender equality work and ward off internal and

¹⁵ Not all kinds of human action are characterized by the requirement of justification. As I shall elaborate on in the article, *De la Justification* only concerns situations of dispute involving exchanges of criticism and justification (Held, 2011, p. 32). According to Boltanski, different situations in social life prompt different “regimes of action”. In the book *L’amour et la justice comme compétences* (1990), he identifies four general regimes of action: the regime of familiarity, the regime of violence, the regime of love and friendship and the regime of justification. Each regime refers to a specific set of social conditions that will mobilize different kinds of capacities inherent in human beings (Jagd, 2011, p. 346 & Jacquemain, 2008, p. 4). In this study, however, I will focus exclusively on the regime of justification.

¹⁶ Also denoted “the principles of justification”.

¹⁷ B&T’s theoretical model of the orders of worth, despite a different epistemological foundation, share similarities with new institutionalism in terms of its focus on legitimacy and the idea of organizations as characterized by a pluralism of institutional or justification logics. For a discussion of similarities and differences between these traditions see (Gond and Leca, 2012),

external critique. By combining the framework of B&T with Norman Fairclough's Critical Discourse Analysis (more on this approach in Chapter 4), this part of the dissertation provides a closer understanding of the rhetorical emphasis and moral value given to issues of gender equality at Aarhus University in the context of altogether six Scandinavian universities.

3.2.5.2. Frames of gender

As noted earlier, Chapter 6 does not merely focus attention on the rhetorical aspect of how issues of gender equality are legitimated in academic settings, but also aims to provide a more sufficient understanding of how variations in policy engagement and governance of gender equality related concerns contribute to account for differences in the proportional representation of women at the highest academic ranks. As a starting point for addressing these issues, Paper 2 uses the analytical model of the four "frames of gender".

Drawing on a broad range of feminist empirical and theoretical work, Kolb et al. (2003) and Ely & Meyerson (2000) have developed a framework for linking specific gender equality policy measures to competing theoretical and political visions of the gender equal organization. Their model consists of four different frames for understanding "what gender is and why inequities exist between men and women at work" (Ely & Meyerson, 2000, p. 105). Each frame applies a certain theoretical perspective to issues of gender and adopts a certain strategy for promoting female career advancement (Kolb et al. 2003, p. 4).

Framing, as noted by Ferree (2008, p. 240), describes "the process of saying what a policy problem is, whose needs are to be addressed and what kinds of solutions are imaginable". They represent "interpretation schemes" structuring the meaning of reality by connecting social beliefs into more or less coherent networks of concepts and ideas that actors can use to make sense of the world and organize their activities (Goffman, 1974; Ferree, 2011). Since framing, in this sense, can be considered a practice of determining the category (or frame) in which a given policy problem belongs, it is reasonable to conceive it as an evaluative sub-process related to what Lamont describes as the categorization dynamics.

The analytical focus on the four gender frames provides a useful starting point for drawing attention to how organizations and countries – on the basis of a variety of policy measures – approach and represent issues of gender equality differently. Inspired by Bacchi's "what's the problem represented to be?" approach (2006, p. 3), I use these frames to understand how gender

equality is represented as a “problem” in the policy frameworks of the Scandinavian countries and universities. By looking at “problem representations”, I aim to unveil the underlying assumptions and ideas about gender and gender equality manifested in the universities’ and countries’ approaches to the topic (Bacchi, 2006), while at the same time connecting these approaches to the existing knowledge on the efficacy and implementation success of diversity policy programmes.

3.2.5.3. Quantification and commensuration

Quantification, as observed by Lamont (2012), has often been considered a dominant mold for understanding the social implications of evaluative practices, and with the proliferation of quantitative performance assessments in academia and elsewhere, this strand of thought seems more topical than ever. Espeland and Stevens’ (1998) sociological work on the concept of commensuration provides important insights into the social dynamics related to such measures. “Commensuration”, as they note, refers to a fundamental process in social life, “which transforms different qualities into a common metric” (Espeland & Stevens 1998, p. 314), and most quantification involves processes of commensuration. In a 2008 article, the authors develop five key sociological dimensions of quantification (and commensuration). Of these, the following three have been considered useful in this dissertation’s ambition to illuminate the stratifying effects of scientific performance measures through a gender lens (see Chapter 7).

First, quantitative metrics have a tendency of remaking and redefining what they attempt to measure. They create social boundaries by “replacing murky variation with clear distinctions between categories of people and things” and they transform individual experiences into common categories (Ibid, p. 214). Scientific performance measures, for instance, may be used to draw new boundaries between excellent and average performing scholars, or between prestigious and mediocre publication channels.

Second, quantitative metrics channel certain social behavior by exerting discipline on what and whom they measure. Bibliometric measures, while initially designed to describe publication behavior among scientists, are increasingly used to judge and control such behavior by defining appropriate levels of productivity and directing researchers’ activities towards particular publication channels.

Finally, quantitative metrics accumulate authority as they travel upwards in organizations. Drawing on the classical work of March and Simon (1958), Espeland and Stevens assert that:

'Raw' information typically is collected and compiled by workers near the bottom of organizational hierarchies; but as it is manipulated, parsed and moved upward, it is transformed so as to make it accessible and amenable for those near the top, who make the big decisions. This 'editing' removes assumptions, discretion and ambiguity, a process that results in 'uncertainty absorption': information appears more robust than it actually is (2008, p. 421-422).

Put differently, managers may often use and interpret quantitative information without accounting for the premises under which this information has been developed. Numbers may therefore, appear more authoritative, as they move from one level of command to another. With reference to scientific performance measures, Gläser and Laudel (2007) describe this process in terms of "amateur bibliometrics"; i.e. the practice of using bibliometric measures "with little or no professional background in the field and with little or no knowledge or regard for the modalities involved" (Ibid., p. 117).

As a supplement to the perspectives of Espeland and Stevens, Chapter 7 draws on Gläser and Laudel's (2007) work on modalities, and Whitley's (1984) concepts of "task uncertainty" and "mutual dependence". More specifically, the concept of modalities will be used to illuminate how "assumptions about applicability and proper procedure" (Gläser and Laudel, 2007, p. 117) influence department heads' use of scientific performance measures, while Whitley's work on task uncertainty and mutual dependence will be utilized to account for how field-specific and disciplinary variations in the social organization of science influence the local use and relevance of scientific performance measures (Whitley, 1984).

While the theoretical perspectives presented above do not provide any clear specifications on the role of gender in scientific performance assessments, they offer a nuanced analytical framework for grasping the complex myriad of constitutive social dynamics and processes related to the use of such measures. As I shall illustrate Chapter 7, these social dynamics and processes may in some situations, indirectly serve to perpetuate existing gender inequalities in academia by reinforcing an evaluative culture privileging past performance over future potential and rewarding traditional (male) career paths and publication patterns. In order to further substantiate the gendered aspects of how research evaluators make use of scientific performance measures, Chapter 7 also uses bibliometric methods to map out gender differences in Danish academics' scientific performance and publication patterns. These bibliometric analyses will mainly draw on the existing literature on gender and scientific performance.

3.2.5.4. Capabilities

As a final theoretical perspective connected to the SVE sub-field, Chapter 9 draws on the capabilities approach developed by Amartya Sen and Martha Nussbaum (e.g. Sen, 1993; Nussbaum, 2000). Originally Sen (1993, p. 30) coined the capabilities concept to denote “the alternative combinations of things a person is able to do or to be – the various ‘functionings’ he or she can achieve”. The key issue of this approach is to understand aspects of inequality, well-being and freedom by placing ethical emphasis on the question of whether individuals are “freely able to fully function, and [...] be or do what they have reason to value” (Cornelius and Skinner, 2008, p. 141). Sociological proponents of this approach are interested in investigating how linkages between structure and agency influence and form individuals’ life preferences and space for action (Hvinden & Halvorsen, 2014). Nussbaum’s concept of “adaptive preferences” (2000) represents a particularly fruitful contribution in this regard. Building on the capabilities approach, she argues that human beings adjust their aspirations and desires in accordance with their existing life situations. To use a topical example, women academics, for instance, adjust their career preferences and ambitions to the structural and cultural circumstances defining their career situation. As in the case of Aesop’s fable of *the fox and the grapes*, some of these women may come to view the research career path as a sour grape (Leahy & Doughney, 2006). With a little good will, the focus of this approach on how individuals’ preferences and “grammars of valuation” are influenced by their cultural environments, can be viewed as connected to the programmatic interest of the SVE literature in understanding how value is defined, produced, dispersed, assessed and institutionalized; however, without any clear anchoring in either of the two central dynamics proposed by Lamont.

Drawing on the capabilities approach, Chapter 9 attempts to disentangle the complex interplay between structural constraints and personal strivings influencing young Aarhusian female researchers’ career choices, thus contributing to explain the disproportionate share of women leaving the university career before applying for tenure. Moreover, this chapter draws on the existing literature on gender and academic careers (see Chapter 2).

To briefly sum up, the four strands of scholarship presented above provide a patchwork of concepts and perspectives serving to carve out and define the objects of study in clear and intelligible ways (Sayer, 2000, p.19). Together, they comprise a nuanced and valuable analytical starting point for addressing the problem of gender inequality in academia from different viewpoints and angles, and on varying levels of analysis. In a critical realist

terminology, the selected theories and frameworks function as interpretive frames enabling recontextualization and reconstruction of different aspects of the qualitative properties, structures and mechanisms of relevance to the present research (Danermark, 2002, p. 120). The following section provides further specification on how the selected concepts and frameworks will be applied throughout the dissertation.

3.3. The framework and its applications

As described, some of the theoretical concepts and perspectives presented above will mainly function as overriding theoretical themes and premises guiding the main focus and argument of this dissertation, while others will be employed for specific analytical purposes and goals specified in the seven scholarly papers. Table 2 below provides an overview of the middle-range theories and analytical frameworks employed in each of the four empirical chapters and accounts for the broader theoretical themes and puzzles involved. As noted, the research process of this project moves from the concrete empirical phenomenon of gender inequality in university settings towards the generative mechanisms contributing to produce this phenomenon; and this 'move' involves a continuous switching between empirical and theoretical arguments.

The middle-range theories and analytical frameworks (see column three, Table 2), serve as frames for interpreting and redescribing analytically separated components or aspects of the overall problem. They place the identified sub-components in new contexts of ideas with the aim of understanding and explaining their fundamentally constitutive mechanisms. The broader theoretical themes (column four Table 2) function as "guiding concepts" connecting and integrating the central findings identified in each of the sub-studies into more overriding cross-cutting patterns, adding to our knowledge on the new and persistent gender equality challenges in academia. The analytical insights derived from these broader theoretical themes and perspectives will be discussed in more detail in the concluding chapter.

Table 2. Analytical strategy and types of theory

		Meta-theoretical frame – critical realism	
Research elements	Chapter	Mid-range theories and analytical frameworks	Cross-cutting themes
Context	Chapter 6: Comparative cross-national/cross-institutional analysis of Scandinavian frameworks and strategies for legitimating and promoting GE	Regimes of justification; gender frames, literature on the efficacy of diversity policies	Are formal rules best for gender equality?
Setting	Chapter 7: Gendered implications of increasing emphasis on scientific performance assessments	Commensuration; modalities; mutual dependence and task uncertainty; literature on gender and scientific performance	Gate-keeping in science Scientific ethos
	Chapter 8: Gendered implications of recruitment and selection practices and procedures	Homosocial reproduction; decoupling; literature on gender and recruitment; literature on networks and institutions	Competing rationalized myths
Self	Chapter 9: Early career researchers' reasons for leaving Aarhus University	Capabilities and preferences; literature on gender and academic careers	

3.4. Wrapping up

In this chapter, I have provided an introduction to the critical realist research strategy. I have discussed how each of the four empirical chapters relates to Layder's differentiated levels of analysis, and I have outlined the prevalent modes of inference employed throughout the dissertation (i.e. abduction and retroduction). With the purpose of clarifying the project's focus on gender inequality and change, I have also highlighted the main characteristics of the rapidly changing international research and university sector. Finally, I have presented and discussed the relevant aspects of the four central strands of scholarship contributing to the knowledge foundation of the project's empirical investigations. The following chapter presents the methodological basis of the dissertation.

Chapter 4.

Research design and methodology

...methods belong to all of us.
(Bernard, 2005, p. 2)

As illustrated in the preceding chapters, the issue of gender equality in academia is a complex and multifaceted phenomenon determined by numerous macro, meso, and micro-level factors. With an ambition of addressing the topic in a sufficient and comprehensive manner, I employ a synchronic case-study approach drawing on both qualitative and quantitative methods and data sources. This chapter provides an introduction to the dissertation's methodological design.

4.1. Case study research

The overriding approach of this dissertation can, despite some excursions,¹⁸ be described as a single-case study. More specifically, I employ a synchronic perspective focusing on selected aspects of the case (i.e. Aarhus University) under investigation at a single point in time.

As pointed out by George & Bennett (2005, p. 19), "case studies are generally strong precisely where statistical approaches and formal models are weak". In opposition to macro-level quantitative research, case studies "allow for conceptual refinements with a higher level of validity over a smaller number of cases" (George & Bennett, 2005, p. 19). Another advantage of the case study concerns the "heuristic identification" of new variables and hypotheses, making it possible to adopt and integrate emerging perspectives, demanding to be heard, during the research process. Finally, the case study offers a great method for examining how social mechanisms operate within individual cases, and for discovering and describing under what complexity of interactions these mechanisms are triggered (Sayer, 2000, p. 14; George & Bennett, 2005, p. 21-23).

A central critique directed against the case-study concerns its lack of external validity and failure to yield results that are formally generalizable.

¹⁸ As returned to below, the study also includes a cross-case component serving to provide comparative insights of relevance to the case.

However, following Flyvbjerg (2011, p. 305), one may argue that “formal generalization is overvalued as a source of scientific development, whereas ‘the force of example’ and transferability are underestimated” (more on this below).

4.1.1. Gender inequality in academia: What is it a case of?

As noted out by Charles Ragin (1992, p. 6), an introductory question worth asking, when conducting case study research reads “what is this a case of?” In order to answer this question, we need to return to the overall research problem of this dissertation:

1. How can we understand and explain women’s persistent underrepresentation at the upper levels of academia?
2. How are issues of gender equality reconstituted in a rapidly changing Danish academic landscape?

On the basis of this problem, it seems reasonable to consider the study at hand to be a case of gender inequality in academic organizations. However, it might not be clear, whether the selected case merely accounts for challenges to gender inequality at Aarhus University, or if the findings apply to a broader set of national or even international cases. Before answering this complicated question, I will briefly reflect on the scope and range of the single case study.

The single case study can be understood both in terms of a process and an end product of a given inquiry. According to Andersen (1997), the possibilities for defining and delimiting a case are multiple, and the definition and scope of a given case may be redeveloped and refined several times over the course of the research process (cf. Antoft & Salomonsen, 2007). Stakes (2005) distinguishes between two elementary types of single case studies. The first type, the “intrinsic case study”, is undertaken when the researcher is interested in reaching an in-depth understanding of a particular case. Sociologists often conduct single case studies without necessarily being concerned with the question of whether their cases come to represent a larger class of cases. In this type of study, it is the case itself, in all its particularity, which is of interest. In the second type, “the instrumental case study”, the selected case is of secondary interest. Here, the main objective is to facilitate an in-depth understanding of an issue external to the case. While the intrinsic design places emphasis on in-depth interpretations and thick description of

a given case's particular issues, the instrumental design aims to illustrate how theoretical views and existing research results are reflected in the case.

According to Stakes (2005, p. 445), "there is no hard-and-fast line distinguishing intrinsic case study from instrumental, but rather a zone of combined purpose"; and the notion of a "combined purpose" fits very well with the overall objective of this study. In the words of Alan Peshkin (1986), my aim will be to "present my case so that it can be read with interest in the case itself, but I always have another agenda – to learn from the case about some class of things" (in Stakes, 2005, p. 445). To explicate this further, one could contend that researchers often focus on both the common and the particular when conducting case studies. With regard to my own study, this means that particular characteristics such as organizational features, historical background and economic, political and legal contexts should be portrayed intensively in order to identify the more common features of the case (Stakes, 2005).

With the foregoing reflections at hand, I will return to the question of whether the case of this project merely accounts for issues of gender inequality at Aarhus University, or if the findings will apply to a broader set of national or even international cases.

Since the dissertation takes on a "both/and" rather than an "either/or" perspective with regard to the intrinsic/instrumental distinction, I expect some findings to reflect tendencies that exceed the scope of the case itself and reveal knowledge that is transferable to a larger class of national, as well as international academic organizations. Other findings may, however, be more narrow and contingent in their range.

As noted earlier, I subscribe to Flyvbjerg's (2011, p. 305) argument that "formal generalization is only one of many ways by which people gain and accumulate knowledge. Knowledge may be transferable even where it is not formally generalizable". The question of "transferability" here refers to the applicability and relevance of the case study results in other social situations and contexts. In a critical realist terminology, one may describe transferability as the idea that similar events occurring in other social settings (e.g. other academic organizations) are likely to be caused by the same type of generative mechanisms that triggered the events in your own field (Zachariadis et al., 2013, p. 6).

The use of analytic generalization plays an important role in this regard. In opposition to statistical generalization, analytic generalization does not seek to generalize the results of a given case study to a larger population sample. Rather, it aims to link these findings to a particular interpretive framework or theoretical construct with a wider applicability and potential

for generalization (Yin, 2003, p. 31-33). As the critical realist scholars Pawson and Tilley argue, the operation of generalizing from a case study “is essentially one of abstraction. We move from one case to another, not because they are descriptively similar, but because we have ideas that can encompass both (...). What are transferable between cases are not lumps of data but sets of ideas” (1997, p. 119-120).

4.1.2. Case selection

As described in the preface, this dissertation unfolds within the framework of a larger research project, and the main case (Aarhus University) has, in this sense, been selected in advance of the study. Aarhus University can be considered a typical case, when it comes to the central subject problem¹⁹ - gender inequality in the upper ranks of academia.

As outlined in Table 3, the modest share of female researchers at Aarhus University in positions equivalent to post doc level (grade C), associate professor level (grade B) and full professor level (grade A), represents a wider national as well as international trend. Moreover, Aarhus University, as many other public European research organizations, has been undergoing significant changes during the last fifteen years due to NPM-driven managerial reforms. In this sense, the university may also function as an informative case with respect to the question of how gender equality issues are reconstituted in a rapidly changing higher education landscape. I elaborate further on the overall case specifications of Aarhus University in Chapter 5.

Table 3. Share of female researchers in positions equivalent to post doc level (Grade C), associate professor level (Grade B) and full professor level (Grade A)

	Grade C	Grade B	Grade A
Aarhus University	43% (2013)	32% (2013)	15% (2013)
Denmark	38% (2010)	29% (2010)	15% (2010)
EU 27	44% (2010)	37% (2010)	20% (2010)
EU 15	43% (2010)	36% (2010)	18% (2010)

European Commission, 2013a; Nielsen et al., 2013a.

¹⁹ According to Abbott (2001, 141), a variety of central subjects exist in case studies and “the crucial difficulty lies in drawing boundaries around the central subject”.

4.1.3. Cross-case analysis

As touched upon earlier, the project also includes a cross-case component. This component aims to unpack and contextualize the strategies for governing and promoting issues of gender equality at Aarhus University, by investigating these in a comparative framework of altogether six Scandinavian universities. As Zippel (2006, p. 41) notes, “Comparative research allows us to reevaluate what we take for granted”, and the qualitative cross-case comparison presented in Chapter 6, constitute a useful starting point for bringing to light the deep-seated “stocks of knowledge” influencing how Aarhus University comes to comprehend and approach the persistent gender equality challenges in academia. More specifically, this part of the dissertation employs the comparative method known as “structured, focused comparison”, which means that it deals with only certain aspects of the cases under investigation and is systematic in its comparison and collection of data (George & Bennett, 2005, p. 67) (More on this method in Chapter 6).

4.2. Methodological pluralism

As noted in Chapter 3, critical realism points to the development of a research approach combining a relatively wide range of methods. In line with C. Wright Mills’ famous vision of a “sociological imagination” that enables actors to identify connections between individual experiences and larger societal structures and processes (Mills, 2000 [1959]), methodological pluralism can be considered a fruitful strategy for problem-driven research, integrating the nuanced overview provided by quantitative methods with the more in-depth understandings offered by qualitative methods (Nielsen, 2005). Critical realist-driven methodological pluralism shares many similarities with the mixed-methods approach. Johnson & Onwuegbuzie (2004, p. 17) describe mixed-methods as “the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language in a single study” (Johnson & Onwuegbuzie, 2004, p. 17). One of the central premises of mixed-methods lies in the pragmatist idea that particular methods should not be wedded with specific paradigms (e.g., the interpretive and the functionalist paradigm), since what is considered the most suitable method of research depends on the question asked (Bryman, 2006; Howe, 1988; Modell, 2009; Teddlie & Tashakkori, 2003). In the pragmatist mixed-methodology, the practical and empirical, in this sense “take precedence over the ontological and epistemological” (Danermark et al., 2002, p. 152).

In comparison, the critical realist approach places greater emphasis on the ontological-methodological link and the conceptions of the nature of reality underpinning a given research question (Danermark et al., 2002, p. 153). As Modell (2009) observes, “it [i.e. critical realism] is clearer about the epistemological ramifications of abandoning the view of reality as constituted by readily observable, law-like regularities and has refined the procedures for theorizing causal relationships” (Modell, 2009, p 212). From this we can imply that a critical realist triangulation of methods should not only be guided by the research question, but also by the ontological conception of the world as a structured, stratified and differentiated reality (Danermark, et al. 2002, p. 153). As noted earlier, explanatory critical realist research cannot be reduced to an empiricist model of regular successions of events, since “what causes something to happen has nothing to do with the number of times we have observed it happening” (Sayer, 2000, p. 14). Quantitative methods may contribute to the identification of potential “candidates” for causal mechanisms but they do not provide any clear insights on how these mechanisms operate and under which circumstances they are activated (Sayer, 2000). In order to obtain such an understanding, qualitative endeavors and abductive/retroductive reasoning are considered necessary. Moreover, quantitative methods may be used to examine how common an identified qualitative phenomenon (or mechanism) is in a given social setting (Danermark, 2002). Before I discuss this project’s effort to integrate qualitative and quantitative methodologies in closer detail, I will introduce the methods and data sources employed.

4.2.1. Use of methods: overview of the chapters

As described in the introduction, this dissertation is written in an integrated paper-format consisting of altogether seven scholarly papers. The integrated paper-format implies that each of the seven papers stand out as an independent piece of scholarly work, but at the same time contributes with insights of relevance to the main research problem. As illustrated in Figure 3, the seven scholarly papers are embedded in four empirical chapters, each addressing a specified sub-theme of relevance to the overall research problem. Figure 6 further specifies the research methods employed in each of these chapters and papers.

Chapter 6 is qualitative in its approach and aims to contrast and compare the frameworks and strategies for legitimating and promoting gender equality work in academia in six Scandinavian universities (and three countries). The chapter consists of two papers. Paper 1 uses critical discourse

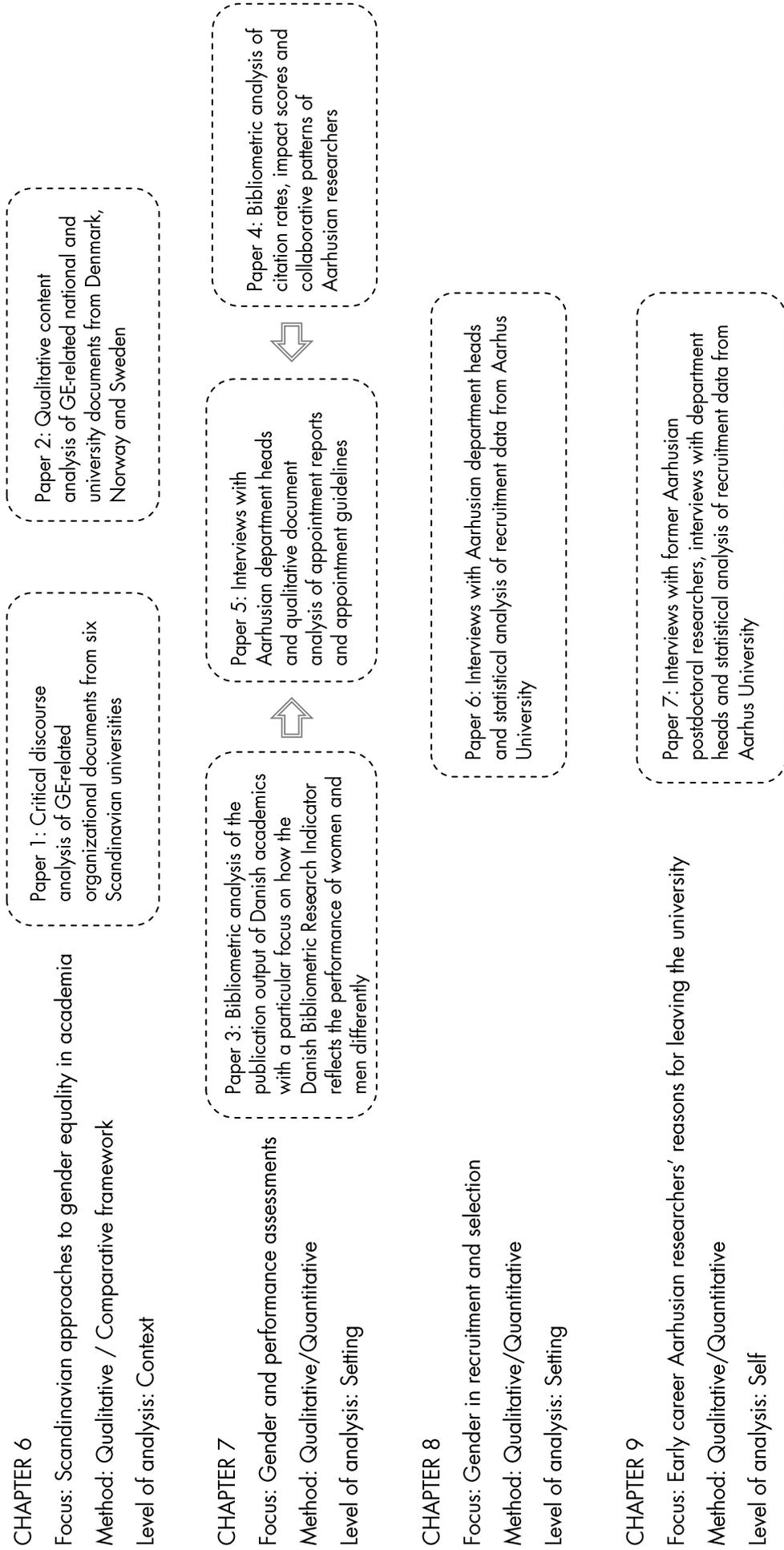
analysis to illuminate how issues of gender equality are articulated and justified in university documents, while Paper 2 employs qualitative document analysis to investigate similarities and differences in the national and institutional policy engagement and governance of gender equality concerns in the six universities and three countries under investigation.

Chapter 7 combines qualitative and quantitative methods to illuminate how the expanding use of individual performance measures in academia influences the status and career advancement of female academics. The chapter comprises three scholarly papers. Paper 3 employs bibliometric methods to analyze Danish academics' publication output with the purpose of illuminating the gendered implications of the newly introduced Danish *Bibliometric Research Indicator* (BRI). Moreover this paper provides much needed information on the current gender differences in publication rates among Danish academics. Paper 4, uses bibliometric tools to compare the citation and self-citation rates, impact scores and collaborative patterns of Aarhusian researchers to test the widespread assumption of a persistent performance gap in favour of male researchers. Finally, Paper 5 uses qualitative interviews with department heads and content analysis of evaluation guidelines and appointment reports to investigate the potential gender consequences related to the increasing emphasis on quantitative metrics and indicators in academic recruitment and selection processes. As illustrated by the arrows in Figure 6, this paper also provides unique opportunity to connect the quantitative patterns identified in the preceding papers (i.e. Paper 3 and 4) with qualitative insights on the evaluative status given to scientific performance measures by department heads and assessment committees.

Chapter 8 (i.e. Paper 6) combines qualitative interviews with department heads and statistical analysis of recruitment data to investigate how issues of gender influence recruitment and selection practices related to senior research positions at Aarhus University.

Finally, *Chapter 9* (i.e. Paper 7) uses survey data and qualitative interviews with department heads and former postdoctoral researchers at Aarhus University to illuminate and explain the "opt out" phenomenon among young female academics. Against the background of this overview, I will now discuss the advantages and limitations of each of the methods and data-sources employed in the dissertation.

Figure 6. Research methods employed throughout the dissertation



4.3. Qualitative methods

In accordance with Dahler-Larsen (2007), I see qualitative inquiry as a relatively flexible research design. In opposition to quantitative research, many of its categories and concepts are (re)developed and refined during the research process, which makes it a fruitful approach for investigating: a) relatively uncharted fields of research, b) complex and composite fields of research, and c) fields of research including culturally constructed views of the world. While argument a) and b) can be viewed as circumstantial reasons for applying qualitative approaches, argument c) is more axiomatic and paradigmatic in its starting point (Dahler-Larsen, 2007). My own argument for employing qualitative methods mainly connects to the second and third of these reasons. With reference to argument b), I consider the issue of gender inequality to be a complex and multifaceted social phenomenon, which cannot be adequately addressed on the basis of quantitative approaches. With reference to argument c) this dissertation's critical realist ontology accepts the premise that gender relations are produced and reproduced through ongoing interpretations and interactions, which calls for in-depth qualitative analyses. In the following sections, I will discuss the different types of qualitative methods employed throughout the study.

4.3.1. Critical Discourse Analysis (Paper 1)

In Paper 1, I employ a critical approach to the study of organizational discourse, seeing organizations as dialogical entities, in which different kinds of discourse struggle for dominance (Grant et al., 2004, p. 15). More specifically, my analytical objective will be to investigate the commonly "taken for granted" perceptions of gender equality in academia with the ambition of revealing the contingency of existing organizational practices. I have chosen Critical Discourse Analysis (CDA)²⁰ as the relevant analytical approach. Norman Fairclough, the most prominent figure of CDA, draws on a range of thorough and closely detailed analytical methods related to Systemic Functional linguistics, text linguistics, pragmatics and rhetoric theory (Wodak & Meyer, 2009, p. 27), which makes his approach highly relevant to the study of organizational texts. The analytical corpus²¹ of CDA is usually extensive, and

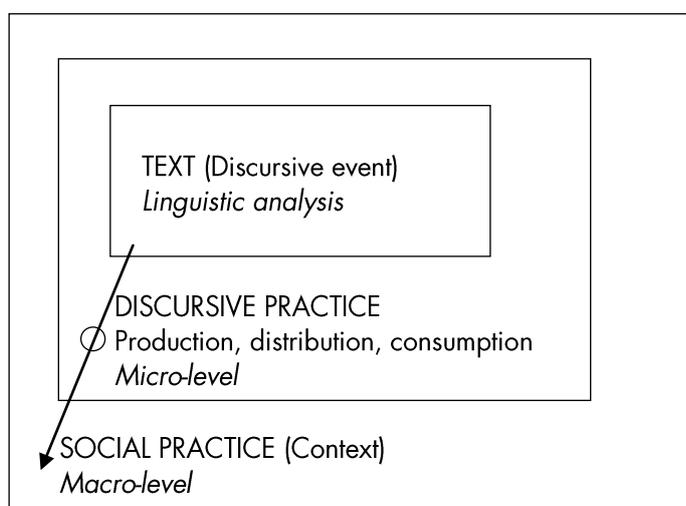
²⁰ CDA encompasses a range of different approaches to the social analysis of discourse. In Paper 1, I specifically draw on Norman Fairclough's approach.

²¹ The term "corpus" comprises a row of discourse samples giving adequate information about the so called 'archive' (this term refers to the totality of discursive prac-

calls for careful selections of analytical examples (Prichard et al., 2004, p. 226-227).

CDA is concerned with the relationship connecting situated texts and broader societal problems, and according to Fairclough, the specificity of a particular discursive practice lies in its relation to the social practice in which it takes part (Fairclough, 1992, p. 226; Deetz et al., 2004, p. 200). In an attempt to operationalize this focus of interest, Fairclough constructs an analytical model (Figure 7) based on a three-part relationship connecting discourse as text, discursive practice and, social practice.

Figure 7. The three-part relationship of discourse



Fairclough, 1992, p. 73.

The first dimension in this model concerns the linguistic and structural practices of texts.²² This level of discourse draws attention to the vocabulary, grammar, cohesion and structure of the text. The second dimension (discursive practice) sheds light on the production, distribution, circulation and consumption of text material, while the third dimension (social practice) aims to unmask the ideological and hegemonic elements hidden in the text (Deetz et al., 2004, p. 200-201; Fairclough, 1992 p. 72-84).²³ The model integrates a

tices, either recorded or on-going practices that fall within the domain of the research project) (Fairclough, 1992, p. 226-227). The corpus could for example consist of organizational documents, videotaped meetings or qualitative interview material (Prichard et al., 2004, p. 226-227).

²² In CDA the term "text" refers to any product, written or spoken.

²³ Organizations and institutions can be viewed as networks of social practices comprising particular discourse orderings and selections of language (Fairclough, 2005).

combination of sociological analysis at micro- and macro-level in the sense that the social practice determines the macro-processes of discursive practice, while the discursive practice shapes the micro-processes of the text-level (Fairclough, 1992, p. 84).

4.3.1.1. Discourse and reality

In using the term 'discourse' Fairclough regards "language use as a form of social practice, rather than a purely individual activity or a reflex of situational variables" (Fairclough, 1992, p. 63). CDA-driven text analysis is, in other words, not only concerned with discourse as a mode of action through which people act upon the world and each other, or discourse as a representation through which the material world, social practices and identities are represented and construed; it also focuses on the ways in which discourses constitute and construct the world in meaning (Fairclough, 2003, p. 26).

In opposition to the somehow similar but less text-oriented radical constructivist approach of discourse theorists Laclau and Mouffe,²⁴ Fairclough applies an ontologically realist view to the study of discourse claiming that the real world exists regardless of how we choose to articulate and perceive it. As outlined below, Fairclough develops three main ways of distinguishing the relationship between discourse and non-discoursal elements of social events.

At the level of social practices, orders of discourse can be seen as articulations of specific ways of representing, acting (and interacting), and being – i.e. specific discourses, genres and styles. A discourse is a particular way of representing certain aspects of the (physical, social, psychological) world; a genre is a particular way of (inter)acting (which comprises the discoursal element of a way of (inter)acting which will also necessarily comprise non-discoursal elements); a style is a way of being (the discoursal element of a way of being an 'identity, which also include non-discoursal elements') (Fairclough, 2005, p. 4).

These ways (discourses, genres and style) are all exposed to the transformative potentials of social agency, which means that organizational texts (and the actors producing them), do not simply instantiate discourses; they actively contribute to rearticulate them in new and distinctive ways (Fairclough, 2005).

²⁴ Laclau and Mouffe's analytical approach reject the existence of any kind of non-discursive reality, and claim that all objects are discursively constituted by articulatory practices. For a thorough introduction to Laclau and Mouffe's discourse theory see Laclau & Mouffe (2001 [1985]).

4.3.1.2. Selection of organizational documents and documentation of text-analysis

As described, the main objective of the critical discourse analysis presented in Paper 1 will be to investigate how six Scandinavian universities articulate and justify gender equality activities and initiatives in organizational texts. On the basis of an initial reading of a comprehensive sample of relevant organizational documents (including university vision statements, strategy plans, staff policies, internationalization strategies and gender equality action plans) 14 documents have been selected for more extensive and in-depth text analysis. A written outline of the actual steps involved in the text-analysis is documented in Appendix 1, which also accounts for the analytical methods employed (e.g., intertextuality, voice, genre and semantic and grammatical relations). Paper 1 synthesizes the central findings identified in this background analysis.

4.3.2. Document analysis (Paper 1, Paper 2 and Paper 5)

Another prevalent approach relevant to this dissertation can be comprehended under the umbrella term “qualitative document analysis”. As noted by Bowen (2009, p. 27), document analysis, like any other qualitative method, requires that data are “examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge”. Document analysis is often considered useful in qualitative case-studies, and may, for instance, be used to contextualize interview-data or as a strategy for triangulation (Bowen, 2009). In some cases, organizational documents also serve as the main source of data.

Paper 2 employs qualitative document analysis to investigate and compare organizational activities to promote gender equality in six Scandinavian universities, and to illuminate national differences in the legislative and political frameworks surrounding these activities. Inspired by the analytical method known as “deductive category application” (Mayring, 2000), the paper brings theoretically derived categories into connection with a selected sample of gender equality related national and organizational documents. More specifically, I use the analytical model of the four frames of gender to elucidate the different understandings and interpretations of gender, underpinning the gender equality work of the selected organizations and countries. The sample of documents under analysis consists of all together 55 texts including the document types enlisted below. Specifications on sampling strategy and criteria for document selection are presented in Paper 2.

- Gender equality and university legislations
- Nationally initiated cross-university policy measures
- Research council-initiatives
- Existing research and evaluation reports
- University plans on gender equality
- University reports and documentations on gender equality
- Web-site snippets and university news features

Paper 5 combines qualitative interviews and document analysis to investigate the potential gender implications of the expanding use of quantitative metrics and indicators in recruitment and selection processes. In opposition to Paper 1 and two, documentary sources mainly serve as means of triangulation in this part of the dissertation. More specifically, Paper 5 draws on the following document types: a) procedural documents guiding the evaluative work of assessment committees; and b) appointment reports from recruitments for associate professorships at Aarhus University.

The procedural documents, which include specified evaluative criteria for the assessment of applicants for research positions, have been used for two purposes: a) to inform the interviews with the department heads (more on this below); and b) to obtain information on the official status given scientific performance measures by assessment committees and heads of department (for an example of a procedural document see Appendix 2).

The appointment reports have mainly been used to illuminate the actual application of, and status given to, scientific performance measures in evaluative practices related to the appointment of candidates for senior research positions. Due to the time-demanding process of anonymizing this type of documents, the university administration at first limited my access to 48 systematically selected assessment reports. The identification of the relevant reports took place on the basis of a dataset provided by the human resources department, including statistical information regarding all recruitments for research positions from 2005–2012. The central criteria of selection are listed in Table 4 below.

Table 4. Selection criteria, appointment reports

-
- Only publicly announced vacancies for associate professorships or equivalent positions within the period 2005–2012 were considered relevant
 - Only vacancies with at least three applicants were considered relevant
 - Only vacancies with both male and female applicants were considered relevant
 - Twelve reports from each of Aarhus University's four faculties were requested (Arts, Business and Social Science, Health and Science & Technology)
-

Due to administrative challenges in identifying some of the requested assessment reports, my access to these documents ended up being more complicated than first expected. After more than a year of ongoing correspondence with the administration,²⁵ I decided to proceed with my analysis on the basis of a final sample consisting of 44 assessment reports, of which the great majority meets all of the criteria listed above. Eight of these have been retrieved from the main area of Arts (i.e. the humanities and related fields), 11 from the School of Business and Social Sciences, 13 from the main area of Health, and 12 from the area of Science and Technology. Specifications on the research disciplines represented in this documentary material (i.e. the research fields in which the relevant vacancies have been announced) and year of appointment are available in Appendix 3, Table 1. Moreover, analytical displays illustrating the different types of scientific performance measures employed in the evaluation of applicants in the analyzed documentary material are enclosed in Appendix 3, Table 2, 3, 4 and 5.

4.4. Qualitative interviews

Interviewing is a frequently used method for data collection in qualitatively-driven and mixed-methods research designs. It is suitable for holistic analysis, thick description and interpretations of meanings in context and serves as a useful starting point for in-depth understanding of complex social practices and processes (Kvale, 1997; Weiss, 1995). Qualitative interviews may be both internal and external in their purposes. They can provide information about the respondents' internal state (e.g. thoughts, feelings and interpretations of the world), but may also be used to reach an understanding of external events (e.g. how a given social system or organization works) and trace the qualitative nature and properties of the social environments in which the

²⁵ In this regard it is relevant to emphasize that the administration has been very helpful during the whole process.

respondent takes part (Sayer, 2000; Weiss, 1995). In this dissertation, I use interviews to investigate:

1. How issues of gender influence academic recruitment and selection practices and procedures (Paper 6)
2. The potentially gendered aspects of the use of and status given to scientific performance measures in the assessment of individual researchers' scientific merits (Paper 5)
3. Department heads' views on and interpretations of the skewed gender balances in academia (Paper 7)
4. The complex interplay between structural constraints and personal strivings circumscribing the career choices of young Aarhusian female researchers (Paper 7).

I draw on two different types of interview material to address these issues. Each of these will be described separately in the sections below.

4.4.1. Elite-interviews with department heads

During the fall semester of 2013, I conducted qualitative interviews with 24 of the 27 department heads (five women and 19 men) at Aarhus University.²⁶ My initial sentiment for focusing on this particular group of informants was threefold. First, department heads, in correspondence with the faculty deans, take on the central responsibility for coordinating and managing the hiring of candidates for senior research positions at the university. Since the early 2000s, the role of assessment committees has been delimited to identifying the qualified applicants for a given vacancy, which renders the qualitative investigation of department heads' ideas about and approaches to recruitment and selection particularly relevant. Second, assessments of individual researchers' scientific merits and performance often adhere to the responsibilities of the department heads, wherefore this group of informants represents a central source of information concerning the use of and status given to quantitative performance metrics. Finally, the department heads' views on, interpretations of, and attentiveness to the skewed gender balances in academia complement other sources of data in my endeavors to investigate why young women tend to be leaving Aarhus University at higher rates than their male colleagues.

²⁶ Three of altogether 27 department heads did not find the time to participate in the study.

In my interviews with the department heads, I have used an open-ended interview approach, mixing conversation and structured questions to collect data. Twenty of the 24 interviews have been conducted face-to-face in the department heads' offices. The rest have been carried out over the phone. The interviews lasted between 30 and 90 minutes. Both name and department affiliation of all interviewees have been anonymized, and all direct quotations have been approved by the relevant informants prior to publication.

4.4.1.1. Individual interviews vs. focus groups

My decision to rely on individual interviews rather than focus groups originated from five initial reflections. First, one may expect department heads to be more cautious and consensus-oriented in their statements and descriptions of academic recruitment, performance assessments and the gendered aspects of academia, when addressing such delicate issues in the collegial setting of fellow managers, and this may result in a less rich, diverse and valid interview material. Second, internal alliances and power relations could potentially influence how these *elite* informants choose to express their opinions and views with respect to the topics raised in the interviews. Third, individual interviews, as opposed to focus groups, provide a better starting for illuminating variations across fields and disciplines. Finally, department heads are busy people, wherefore the practical issue of scheduling a suitable meeting point (in terms of both time and space) for a focus group interview may be both challenging and time-demanding.

4.4.1.2. Focusing on the internal or the external?

As noted, qualitative interviews can be conducted for both internal and external purposes. Whereas phenomenological in-depth interviews (i.e. interviews focusing on the internal) facilitate qualitative descriptions of the interviewees' "life world" in order to interpret the meaning of action (Kvale, 1997, p. 129), the main purpose of the externally focused interview is to reach a closer understanding of a complex social phenomenon external to the informant, by drawing on his or her expertise and descriptions of this phenomenon. Put differently, whereas the interviewee in a study of the internal can be viewed as a source of information on his or her own life world (e.g. via personal experiences and descriptions of sentiments for opting out of a research career), the informant in the externally focused interview serves as a source of information on an outer phenomenon (e.g. recruitment and selection practices or the use of bibliometric measures in scientific performance

assessments). Since my interviews with the department heads, as described in Chapter 3, are used to illuminate immediate forms of social organization situated in the research element of “setting”, it is reasonable to contend that they are more external than internal in their focus. One may even describe them as “elite interviews”. By this is meant that the informants are primarily interviewed on the basis of their role as representatives of the organizational practices related to recruitment and performance assessment, with the aim of obtaining an expert knowledge on the topic. However, because of my concurrent interest in reaching a closer understanding of the interviewees’ perceptions of the gendered aspects of such practices, and their interpretations of the skewed gender balances in academia, the interviews still maintain some focus on the interior or internal state.

4.4.1.3. Construction of interview guide and framing of invitational letter²⁷

As noted above, the interview guide takes on a semi-structured form, mixing conversation and structured questions to collect data. The themes and questions raised in the first part of the interview guide are developed and defined on the basis of a preceding statistical analysis of ten years of organizational data on recruitments for associate professorships and full professorships at Aarhus University (the interview guide is enclosed in Appendix 4). More specifically, my questions in this part of the interview focus on the different steps of the academic hiring process, with a particular emphasis on reaching an in-depth qualitative understanding of the underlying mechanisms and practices explaining the patterns and regularities identified in the quantitative part of the analysis.

I set out with what Leech describes as a “grand tour question”. This is a question type “that gets respondents talking, but in a fairly focused way” (2002, p. 667). Subsequently, I raise attention to the prevalent themes left unnoticed by the informants and ask them to elaborate or redescribe central aspects of their answers in different words.

Inspired by Michelé Lamont’s (2009) pioneer work on the development and negotiation of evaluation criteria in academic settings, I have also decided to structure several of the questions in an open ended manner. This strategy enables me to identify and explore the taken-for-granted ideas and conceptions that department heads rely on when evaluating scientific merits

²⁷ The interview guide has been developed in correspondence with several colleagues at the Danish Centre for Studies and Research with the purpose of ensuring the relevance and validity of the interview questions.

or hiring research staff. For instance, I ask the informants to describe the central characteristics of the “employable researcher”, and to specify what a “good” publication profile looks like.

Since gender inequality in academia is a touchy and delicate subject characterized by a wide range of different opinions and perceptions, I have chosen to “tone down” my research interest in the subject in the invitational letter for the department heads (see Appendix 5), but also in the actual interview guide. In the invitational letter, the overriding purpose of the interview study is framed in terms of a focus on “similarities and differences in female and male researchers’ career preferences, career paths and research interests”; and the interview guide is structured in a way so that the issue of gender and gender inequality is not directly introduced into the discussion from the beginning of the interviewing process. By adopting such a strategy, I aim to avoid interview situations, where department heads are responding in a defensive manner to all of my questions to fend off presumed accusations of gender discrimination.

4.4.2. Exit-interviews with former postdoctoral researchers at Aarhus University

The second sample of interviews investigated in this dissertation originates from a qualitative study commissioned by Aarhus University’s Gender Equality Taskforce in 2010. The study, conducted at the Danish Centre for Studies in Research and Research Policy (see Faber, 2010), employed exit-interviews with 32 former Aarhusian researchers to investigate the typical reasons for opting out of a career at the university.²⁸ More specifically, the study addressed issues such as the interviewees’ reasons for leaving, work-life balance, job satisfaction, and experiences of social integration in the local research environments (the interview guide for this study is enclosed in Appendix 6). 17 of the interviewees were postdoctoral researchers (or researchers at equivalent career levels) (nine women and eight men from a wide range of different scientific fields), who (in most cases) had made a deliberate decision to leave the university before the expiration of their employment contracts. In Paper 7, I draw on these interviews as one of several data sources to illuminate the complex ways in which correspondences between structural constraints and personal strivings influence and form young women academics’ career choices.

²⁸ For a more elaborate presentation of the research design of this study in Danish, see Faber (2010).

On average, the duration of each interview was 30 minutes. Most (13 out of 17) were conducted face-to-face and the rest via email. Approximately half of the interviewees were recruited on the basis of a small survey distributed among the department heads, asking them to identify candidates that they lost, but would have liked to keep in their departments. The other half was randomly selected from a dataset including information on all postdoctoral scholars opting out of a career at the university 1–3 years prior to the study. In comparison to my interviews with the department heads, these interviews focus less on the intermediate forms of social organization, external to the interviewees, and more on how the interviewees are affected by and respond to social situations.

4.4.3. Coding strategies

All interviews have been coded in Nvivo using a thematic analysis with a hybrid of deductive and exploratory coding strategies. In opposition to the more open coding approaches related to grounded research (see, e.g., Corbin & Strauss, 1990), the thematic coding strategy most often:

... begins with a list of themes known or at least anticipated to be found in the data. When data for thematic analysis are collected through semi-structured interviews, some themes will be anticipated in the data set because those concepts were explicitly included in the data collection. Codes may also come from a beginning conceptual model, the review of the literature, or professional experience (Ayres, 2008, p. 3).

In my analysis of recruitment and selection procedures (Paper 5), I have started out by identifying overriding thematic nodes on the basis of the interview themes derived from the preceding quantitative analysis. In the second step of the analysis, these thematic nodes have been informed by the theoretical framework with the purpose of developing a more in-depth and nuanced understanding of the data, and identifying patterns (similarities and differences) of relevance to the research questions. Thematic coding in this part of the study has, in other words, been characterized by a reciprocal process, where “coding facilitates the development of themes, and the development of themes facilitates coding” (Ayres, 2008, p. 4).

In my analysis of the gendered aspects of scientific performance measures (Paper 5), I have employed a similar strategy. First, I have connected the interview material with a number of pre-defined thematic nodes derived from themes addressed in the interview guide. This coding has helped me obtain a systematized understanding of how, and for which pur-

poses, department heads and assessment committees use quantitative performance metrics. Second, I have used theoretically derived concepts to inform the subsequent coding with the purpose of illuminating the social dynamics and potentially gendered aspects related to the use of such measures. Finally, a more exploratory coding strategy has been employed with the purpose of identifying overarching patterns (similarities and differences) in how the interviewees articulate issues of gender and differences in male and female academics' career advancement. Each part of the coding processes has involved several re-readings of the interview material.

In my analysis of the interviews with former postdoctoral researchers (Paper 6), I started out by defining a number of central themes on the basis of an iterative analytical process involving several re-readings of the interviews. This initial coding was exploratory in its approach and focused on identifying different aspects of relevance to the main objective of the study; i.e. to understand and explain why early-career women researchers leave Aarhus University at higher rates than their male colleagues. As part of this coding process, I also focused on identifying differences and similarities in male and female postdoctoral researchers' reasons for leaving the university. After analyzing other types of data (more on these data sources below), I returned to the interviews with the purpose of connecting relevant examples and counter-examples from the interview material with central insights from the additional data sources.

4.4.4. Limitations and pitfalls related to close-up qualitative studies

As outlined above, the qualitative data collection of this dissertation involves direct social interaction with elite representatives from my own organization (i.e. Aarhus University). This, of course, calls for careful reflection on the challenges and limitations involved when studying the lived realities of one's own backyard (Degn, 2014c, p. 59). Alvesson (2003) critically scrutinizes the "pros" and "cons" of close-up organizational studies, arguing that a central strength relates to the closeness with the object under study in terms of access to data and rich empirical accounts, while a central weakness is the potential blind spots and tacit knowledge involved. More specifically Alvesson asserts that:

The self-ethnographer must make strong efforts to avoid "staying native" (...) The problem of a closed mind may be less a matter of personal bias than about belongingness to the tribe's shared cultural frame (...) The self-ethnographer's efforts may well involve demystifications and questioning of basic ideas and assumptions (Alvesson, 2003, p. 189).

In an attempt to avoid “staying native”, I have adopted the role of the uninformed junior faculty in my interviews with the department heads. More specifically I have asked “self-evident” clarifying questions with the purpose of making the interviewees elaborate and redescribe otherwise tacit and taken-for-granted aspects and dimensions of the topics under investigation. My role as a “rookie” in the field may have encouraged some of the department heads to elaborate and disclose sensitive information at odds with the prevailing formal rules and rationalized myths of the organization (e.g. transparency and meritocracy) that would otherwise have remained unnoticed.

Another caveat related to this kind of “self-ethnography” concerns the hierarchical power relationship between interviewer and interviewee. Scholars have highlighted elite informants’ ability to take control of the interview situation as one of the key methodological challenges of conducting elite interviews (Burnham 2008; Lilleker 2003). This power-relationship may be particularly prevalent, when conducting interviews with managers in your own organization. In practice, I have not considered this to be a problem. Some interviewees may, however, without my knowing have entered the interview situation with latent motives and interests that I am unaware of (Degn, 2014c).

Talking about gender in interviews with elite informants, as noted earlier, may also involve some challenges. My own interviews include a number of examples of department heads responding in a defensive manner, when issues of gender were raised in the interview situation. As returned to in Chapter 7 (Paper 5), many of the informants tend to stick to the narrative of the gender blind organization when reflecting on issues of gender in academia, which can be interpreted as a strategy for legitimating existing organizational practices while countering some of the presumed accusations of direct discrimination and nepotism characterizing parts of the existing debates on gender inequality in academia. In a few interview situations, I have found it necessary to emphasize that the main purpose of my interview was not to reveal issues of direct nepotism and discrimination against women, but to obtain a better understanding of the unintended differential impact of existing organizational practices on male and female researchers. Interestingly, this strategy made some interviewees open up and reflect on these issues in a more nuanced and multifaceted manner, resulting in a richer and more detailed interview material.

Some degree of reactivity (i.e., the influence of the interviewer on the object or subject under study) (Lamont, 2009) is, however, unavoidable in qualitative interviews, and I acknowledge that department heads in some situations may have paid lip-service or adjusted their descriptions and statements

to the formal regulations and policies of the university. This methodological pitfall clearly illustrates the importance of triangulating qualitative interviews with other sources of data. Against the background of these reflections, I will now proceed to describe and discuss the quantitative data and methods employed in the project.

4.5. Quantitative methods and data sources

A central critique of the positivist research paradigm relates to the argument that causal explanation cannot be reduced to an empiricist model of regular successions of events (Sayer, 2000). Moreover, scholars have raised concerns about the positivist paradigm's desire to observe and describe a multifaceted and contingent social world in terms of universally valid scientific laws and forces (Kemp & Holmwood, 2003). Bauman (2000) even contends that the empiricist model of social research has a worrying tendency of reducing ethical judgments of human experience to numerical value (Cf. De Boise, 2011).

However, despite the abovementioned critiques, critical realist social researchers should not reject the ambition of identifying quantitative patterns and regularities in the social world. As pointed out earlier, empiricist models can help us to map out potential candidates for causal mechanisms, and may also be used to examine how common a given qualitative phenomenon (or mechanism) is in a social setting (Danermark et al., 2002). In this dissertation, I draw on three different types of quantitative data. In the following, I will briefly account for each of these data sources.

4.5.1. Organizational statistics

Two types of organizational statistics have been retrieved from Aarhus University's administrative databases. The first dataset comprises information on recent developments in the gender composition of research staff across scientific ranks and institutional entities. This data-set is mainly used to illuminate variations in the gender equality status in terms of horizontal and vertical gender compositions in different parts of the organization (more on this in Chapter 5).

The second data set includes information about all appointments for senior research positions (i.e. positions equivalent to associate- and full professorships) at the university, in a period stretching from late 2004 to early 2013 (N 1007). These numbers, which are mainly used in the analysis of academic recruitment and selection practices presented in Chapter 8, provides a

unique opportunity to identify quantitative patterns and regularities indicative of the existing gender inequalities among senior research staff. More specifically, the data-set includes information on the following variables of relevance to this dissertation:

- Type of job announcement (open or closed)
- Number of male and female candidates
- Number of qualified male and female candidates
- Number of female appointees distributed on temporary and permanent positions.

4.5.2. Bibliometric data

Chapter 6 draws on two sets of bibliometric data.²⁹ The first data-set has been retrieved from a database accounting for all scholarly publications registered by Danish researchers in the national IT-system PURE³⁰ in the period 2009 through 2011. These data provide information on two relevant measures of publication output: 1) a count of scholarly publications; and 2) a count of the points ascribed to each publication on the basis of the Danish Bibliometric Research Indicator. As returned to below, the bibliometric data have been merged with background variables from a national survey study of Danish academics conducted in 2011, enabling a gender comparison of the publication output of researchers in similar academic positions and scientific fields.

The second bibliometric data-set has been extracted from Thomson Reuter's Web of Science database (henceforth WoS) in June 2013. The data set, which includes all regular articles, review articles, and letters authored by researchers affiliated with Aarhus University available for the year 2009, have been used to investigate gender differences in citation and self-citation rates, source normalized impact scores, and research collaborations among the academics at Aarhus University.

Altogether, 23,470 observations have been downloaded from the WoS database, and gender is coded for all of the authors affiliated with Aarhus

²⁹ In 1969, Alan Pritchard coined the term "bibliometrics" to describe "the application of mathematics and statistical methods to books and other media communication" (1969, 348-349). In this dissertation, the notion will be used to account for quantitative analysis of academic literature in terms of publications counts, citation analysis and analysis of co-authorship patterns.

³⁰ PURE (abbreviation for Publications and Research) is a national IT system used to document and account for the publication and research activities of Danish academics.

University (7280 observations in total (more on the coding process in Paper 4). In total, the dataset comprises 2853 publications and 3293 authors. Among these, 2141 are men (65%) and 1019 women (31%). It has not been possible to determine the gender of 133 (4%) authors.

4.5.3. Survey data

Finally, I draw on three different cross-sectional data-sets collected via web-administered survey questionnaires. The first dataset (Survey one) has been collected on the basis of a comprehensive psychological workplace assessment (henceforth PWA) conducted at Aarhus University in 2012. This dataset is used in the investigations of the complex ways in which correspondences between structural constraints and personal strivings influence and form young women academics' career choices presented in Chapter 9.

Since 2008, all public work places in Denmark have been committed to conduct assessments of employee satisfaction and psychological well-being on a three year basis (The Danish Working Environment, Act 2010). The most recent Aarhusian PWA took place in November-December 2012 and focused on the following main issues derived from the existing literature on employees' well-being at the work place:³¹

- The employees' experience of her or his work
- The employees' experience of colleagues
- The employees' experience of the management
- The employees' experience of her or his workload
- The employees' experiences of organizational changes at Aarhus University.

The survey was distributed to altogether 8298 employees including 6049 full-time employees and had an overall response rate of 83% for full-time employees and 44% for part-time employees. More specifically, 561 researchers at postdoc level (grade C, women: 47%; men: 53%) and 988 PhD fellows (grade D, women: 48%; men 52%) participated in the study. Table 5, below, compares the response rates for early-career researchers with their overall representation at the university in late 2012.

³¹ For an in-depth description of the research design, data-collection process and theoretical background of the survey in Danish see (Aarhus University, 2012b). A summary report is also available in English (see Aarhus University, 2012b).

Table 5. Distribution of population and respondents in Survey 1

	Grade D (♂/♀)	Grade C (♂/♀)
Respondents	988 (52%/48%)	561 (53%/47%)
Population (Aarhus University)	1443 (51%/49%)	758 (57%/43%)
Respondents' share of the total population	68%	74%

As a member of the STAGES project, I have also conducted a survey study (Survey 2) focusing on work-life issues among research faculty at Aarhus University. This study, which was initiated to map out the experiences of work-life balance issues,³² opened an opportunity to include a number of questions relevant to Chapter 9's focus on understanding and explaining why early career female researchers leave Aarhus University at higher rates than their male colleagues.

More specifically, I used the exit-interviews with former Aarhusian researchers and interviews with the department heads to develop a number of survey questions illuminating various factors affecting young research employees' considerations regarding a career shift. At the same time the survey opened an opportunity to elaborate on relevant gender patterns and regularities identified in the 2012 psychological workplace assessment. Appendix 7 accounts for all questions from the survey of relevance to this dissertation.

The web-questionnaire was constructed using the software SurveyXact®³³ and pilot-tested by seven colleagues at the Danish Centre for Studies in Research and Research Policy prior to distribution. Moreover, I decided to start out by sending the survey to a limited number of 50 researchers in order to account for potential unidentified problems with the questionnaire, before distributing it to the total sample.

The final data gathering took place between January and March 2014. Initially, the idea was to distribute the survey questionnaire to 700 PhDs (50% women, 50% men) and 800 postdocs (50% women, 50% men). Since Aarhus University merely held 274 female postdocs in January 2014, I ended up with a randomly selected sample of 700 PhDs and 674 postdocs. The questionnaire was distributed via email addresses acquired from Aarhus University's human resources department (the invitational letter for the survey can be

³² One of the activities of the STAGES project has been to ensure the best possible working conditions for scientific faculty in terms of flexibility in work-time and space (i.e. options to work from home).

³³ SurveyXact is a system developed by Rambøll Management for handling survey design, respondent lists, email-distributions and collection of data.

found in Appendix 8). Three reminders were sent out to non-responding researchers to maximize the response rates. The final response rate was 38% (see sample specifications in Table 6 below), resulting in a dataset of 528 respondents.

Table 6. Distribution of sample and respondents in Survey 2

	Grade D (♂/♀)	Grade C (♂/♀)
Respondents	267 (54%/46%)	261 (46%/54%)
Sample	700 (50%/50%)	674 (41%/59%)

Finally, Chapter 6 (Paper 5) draws on a web-administered survey study (Survey Study 3) developed and conducted by a group of political science scholars at the University of Southern Denmark (for an in-depth description of the methodological design, data-collection process and theoretical background of this survey, see Opstrup [2014]). The survey, which focuses on aspects of the publication strategies of Danish researchers, was distributed to a stratified sample of 4984 academics drawn from a representative pool of 66 Danish university departments in 2011. The response rate was 53%, resulting in a total sample of 2654 researchers. As noted earlier, I have combined these data with bibliometric information extracted from the national research database PURE, enabling a gender comparison of the publication output of researchers in similar academic positions and scientific fields. It has, however, not been possible to identify all of the 2654 survey respondents in the PURE database. Of these, 2022 reported scholarly publications for the PURE database within the given period (see specifications below).

Table 7. Distributions of respondents in Survey 3

	Male	Female
Humanities	229	171
Social Sciences	223	168
Natural Sciences and Technology	674	284
Health Sciences	166	127

Note: It was not possible to determine the gender of seven of the participating respondents on the basis of first names.

The quantitative data-sets presented above have all been analyzed in SPSS using descriptive statistics (frequency, mean, median, and percentages), parametric and nonparametric tests (T-test and Mann Whitney U), Chi-

square test, binary logistic regression and generalized linear models (more on the statistical methods for data analysis in Paper 3, 4, 6 and 7).³⁴

4.5.4. Quantitative caveats and shortcomings

As is the case with qualitative methods, information garnered from quantitative methods has its limitations. A central tenet in the social science literature on quantitative methods concerns the issue of measurement (or content) validity, i.e. the extent to which the methods and data employed to measure a given concept accurately reflect this concept (Bryman, 2012). Another central issue relates to the question of reliability, i.e. the extent to which a chosen indicator/method is consistent, stable and replicable in its measurement of a given concept or phenomenon (Bryman, 2012).

In the following, I will briefly touch upon a number of central caveats and limitations in terms of validity and reliability related to the quantitative approaches employed in this dissertation.

4.5.4.1. Recruitment statistics

Aarhus University's recruitment statistics originates from a comprehensive sample of accumulated data reported to the human resources department by administrative staff at the decentralized entities (i.e. departments, centers, etc.). The processing of these data involves some margin of error, which may potentially weaken the measurement validity of the data when employed for research purposes. I have attempted to overcome this limitation by carefully going through the reported information on each of the 1007 recruitments, in order to correct evident processing mistakes.

4.5.4.2. Bibliometric measures

Likewise, bibliometric information often takes on the form of accumulated data involving potential mistakes in processing at different levels of data management. When analyzing data retrieved from the PURE database (see Paper 3) it is important to keep in mind that these numbers are based on self-reported publication activities which, despite continuous administrative efforts to ensure data quality by reminding research staff to report their work on a yearly basis, may not always be up to date.

In this regard, it is also relevant to note that the use of citation-based indicators in the social sciences and humanities is characterized by certain dif-

³⁴ All survey data presented in this study have been treated in compliance with moral and ethical requirements to ensure the anonymity of the respondents.

difficulties and limitations due to WoS' lack of coverage of anthology articles, conference proceedings, and monographs, as well as its limitations with respect to language and geographical scope (Schneider, 2009).³⁵

4.5.4.3. Survey studies

Cross-sectional survey studies also involve a number of shortcomings, which should be accounted for when analyzing and interpreting their results. One of the central advantages of survey interventions, in comparison to qualitative methods, concern their ability to reach a relatively large population with the purpose of identifying broader and more general patterns of association, while at the same time accounting for variations in underlying circumstances (Hellevik, 2002; Haase, 2014). However, as noted earlier “what causes something to happen has nothing to do with the number of times we have observed it happening” (Sayer, 2000, p. 14); and while quantitative surveys may typically be strong in uncovering larger associations and relationships, their internal validity in terms of identifying and explaining the underlying mechanisms triggering these associations is typically low. As mentioned earlier, this illustrates the relevance of combining survey methods with qualitative investigations.

In this regard, it is relevant to note that I do not intend to use the survey data collected from Aarhus University (i.e. Survey Study 1 and 2, presented in Chapter 9) with the ambition of acquiring externally valid response patterns representative of a larger population. In fact, the analytical conclusions derived from these data restricts entirely to the respondents involved in the study. I have made this decision to account for the statistical fallacies involved, when making general inferences from data that do not meet the statistical requirements of probability sampling (for a discussion on this see Gorrard, 2014). That being said, I still consider the methodological combination of survey data and qualitative interviews to contribute with important new insights on the question of “female leavers” in academia that may be transferable to a larger class of cases.

Another central caveat of the survey approach relates to the reliance on self-reported experiences as a starting point for making inferences about broader social patterns and relationships. For instance, a survey study investigating academics' experiences of social and professional inclusion in their everyday work-setting does not provide any insights into the de facto pro-

³⁵ For a more in-depth discussion of the caveats and shortcomings related to the use of bibliometric data and methods in social research see Weingart (2005) and Gläser and Laudel (2001; 2007).

cesses of social inclusion and exclusion taking place in these settings. Rather, the analytical claims, which can be derived from such studies restricts to the respondents own experiences of the phenomenon under investigation.

Finally, an important point to pay attention to when using survey questionnaires, concerns the challenge of developing unequivocal and concise questions that do not leave the respondent in doubt about the purpose and expression of questions (Bryman, 2012). In survey two, one of the strategies for meeting this challenge has been to let colleagues, with in-depth expertise in designing and conducting questionnaires with academics, test and comment on the survey before distribution. Moreover, my “closeness” with the object under study (i.e. work-life issues in academia), may also have given me an advantage in the development and design of this survey. In the following section, I will discuss the project’s combination of methods in closer detail.

4.6. Combining quantitative and qualitative methods

As touched upon in the preceding sections, there may, despite ongoing “methodology wars” in the social sciences, be many advantages of adopting a methodological pluralist orientation, when investigating complex and multifaceted social phenomena such as the issue of gender equality in academia. Table 8 illustrates how the strengths of the quantitative approach complement the weaknesses of the qualitative approach and vice versa (Smith-Doerr, 2004). Qualitative approaches are well-built for holistic analysis, thick description and interpretations of meanings in context, but in opposition to quantitative approaches they do not take us far in terms of obtaining information on quantitative dimensions of organizational properties, patterns and relations (Sayer, 2000). The two approaches can, as illustrated in the following three figures, be fruitfully combined within a single case study.

Table 8. Strengths and weaknesses of qualitative and quantitative approaches

	Strengths	Weaknesses	Examples from this study
Quantitative	Ability to reach a relatively large population and identify broader and more general associations and relationships	Challenges in terms of identifying and explaining underlying mechanisms triggering associations and relationships	Identifying gendered patterns in recruitment Illuminating gender differences in research performance on prevailing parameters
Qualitative	In-depth and holistic understanding complex social practices and processes. Obtaining thick descriptions of meaning in context	Lack of information on quantitative dimensions of organizational properties, patterns, and relations	Developing an in depth understanding of recruitment and promotion processes through a gender lens Understanding the use of and status given to scientific performance measures through a gender lens

Note: This table is inspired by Smith-Doerr's (2004, pp. 176-177) reflections on the complementary advantages of combining qualitative and quantitative methods.

Figure 8³⁶ provides an overview of the method combination employed in the second of the four empirical chapters (i.e. Chapter 7). As described earlier, this chapter combines bibliometric methods, document analysis and qualitative interviews to illuminate the potential gender consequences of the expanding use of quantitative metrics in academic recruitment and selection. As illustrated in the figure, the main findings of Papers 3 and 4 serve to inform Paper 5's more qualitative investigations. Moreover, the main results of the citation analysis presented in Paper 4 will be used as a complementary empirical perspective, when analyzing and interpreting the results of the publication analysis presented in Paper 3.

Figure 9 outlines the strategy for combining organizational statistics and qualitative interviews presented in Chapter 8's investigations of the subtle ways in which issues of gender come to influence recruitment and selection processes. As noted earlier, the themes and questions raised in the qualitative part of this study have been guided and influenced by the preceding quantitative analysis of recruitment data, and the two approaches have, hereafter, been combined in a complementary analysis.

Finally, Figure 10 accounts for the research design adopted in the investigation of the "opt out" phenomenon among early career women researchers presented in Chapter 9. As shown in the figure, central findings of the in-

³⁶ Figure 8, 9 and 10 are inspired by Woolley (2008, p. 6).

interviews with department heads and former research employees at Aarhus University, as well as overriding patterns identified in the psychological workplace assessment, have served to inform relevant survey questions of work-life issues among young academics in the organization. After data collection and analysis, the findings derived from each of these approaches have been integrated into a complementary analysis with the ambition of gaining a closer and more nuanced understanding of the complex interplay between structural constraints and personal strivings circumscribing the career choices of young female researchers.

4.7. Wrapping up

In this chapter, I have provided an introduction to the dissertation's case-study approach and methodological design. The key ambition has been to demonstrate the complementary benefits of combining quantitative and qualitative methods in a single-case study. In the following chapter, I provide a more in-depth introduction to the central characteristics of the main case and its national context.

Figure 8. Research design, Chapter 7

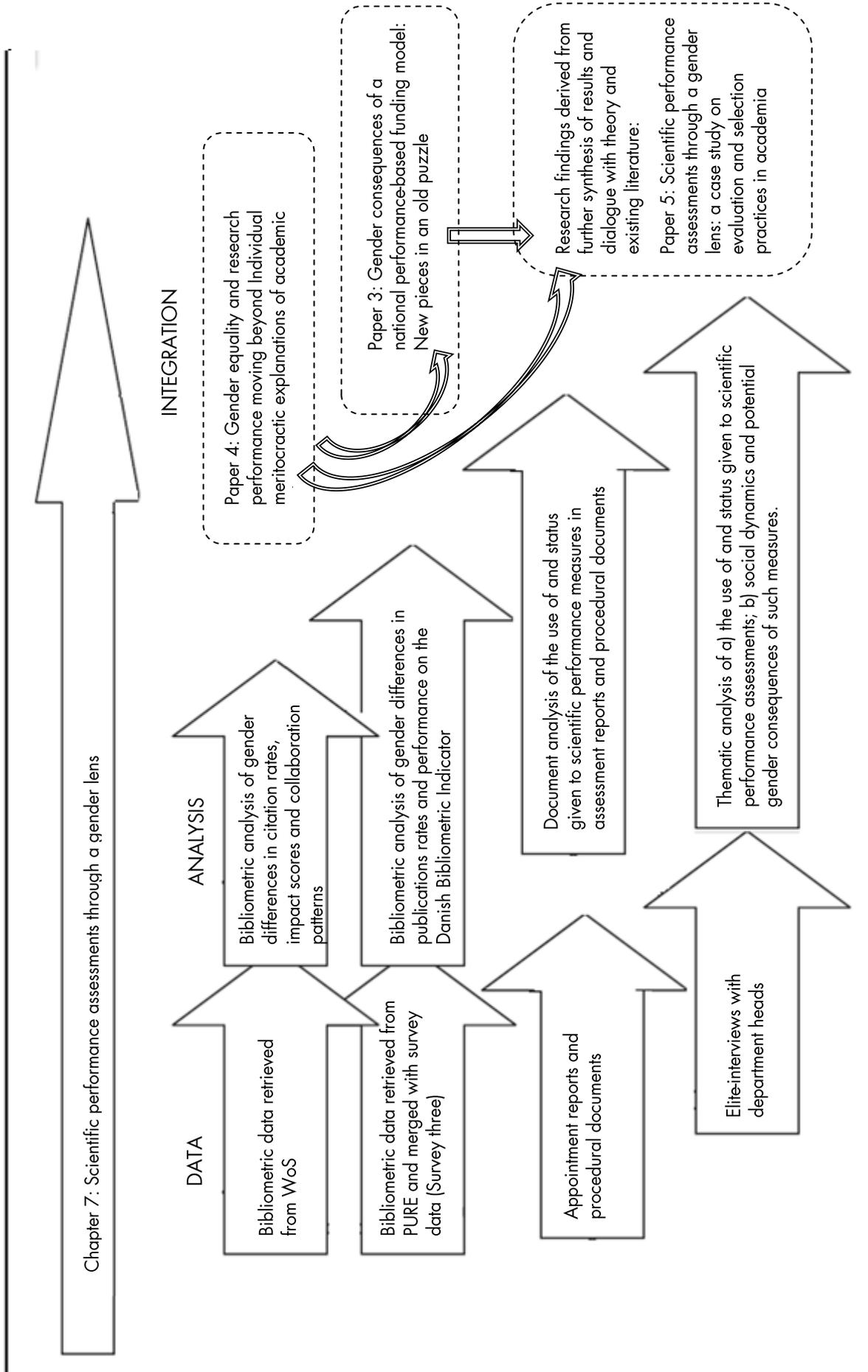


Figure 9. Research design, Chapter 8

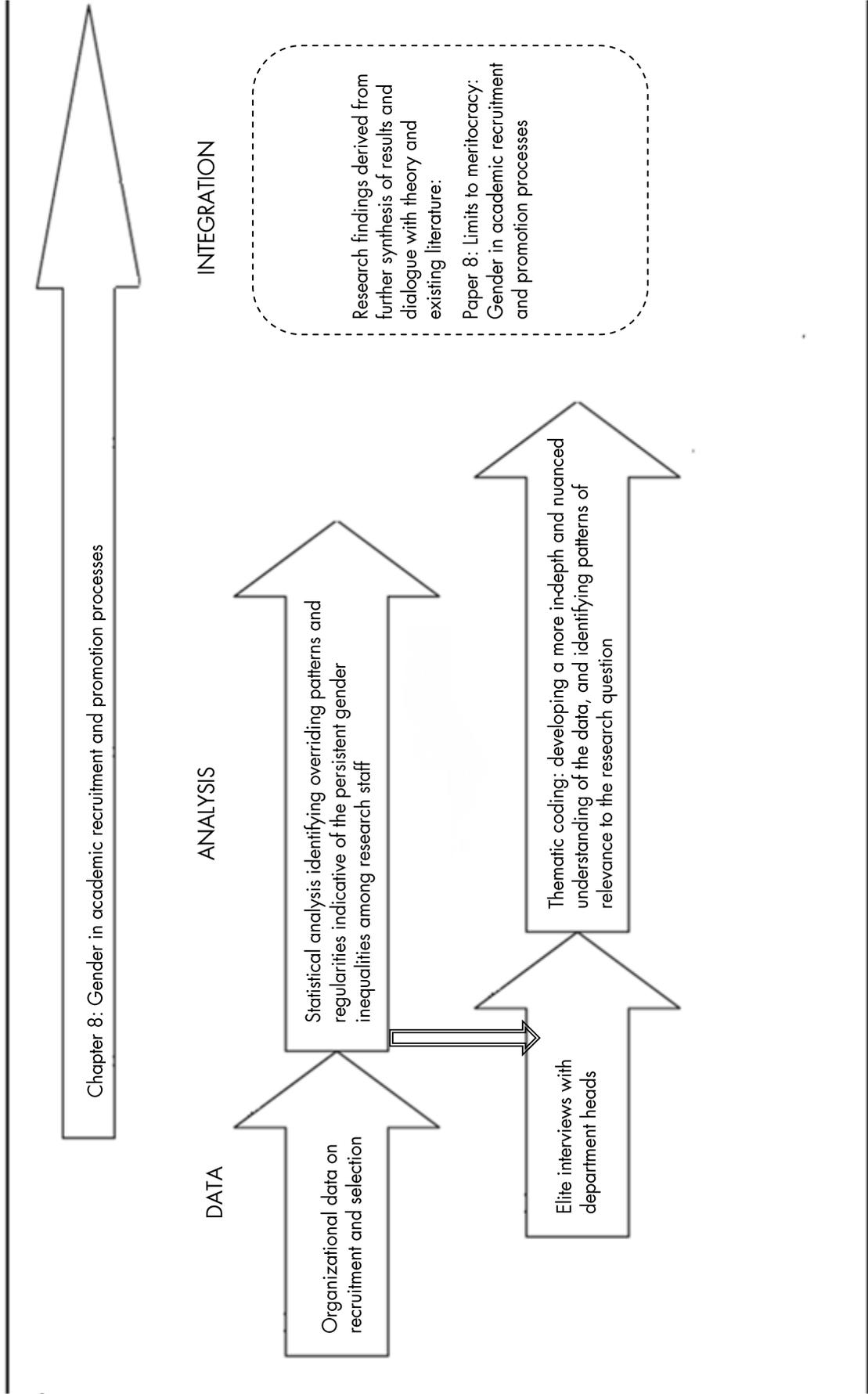
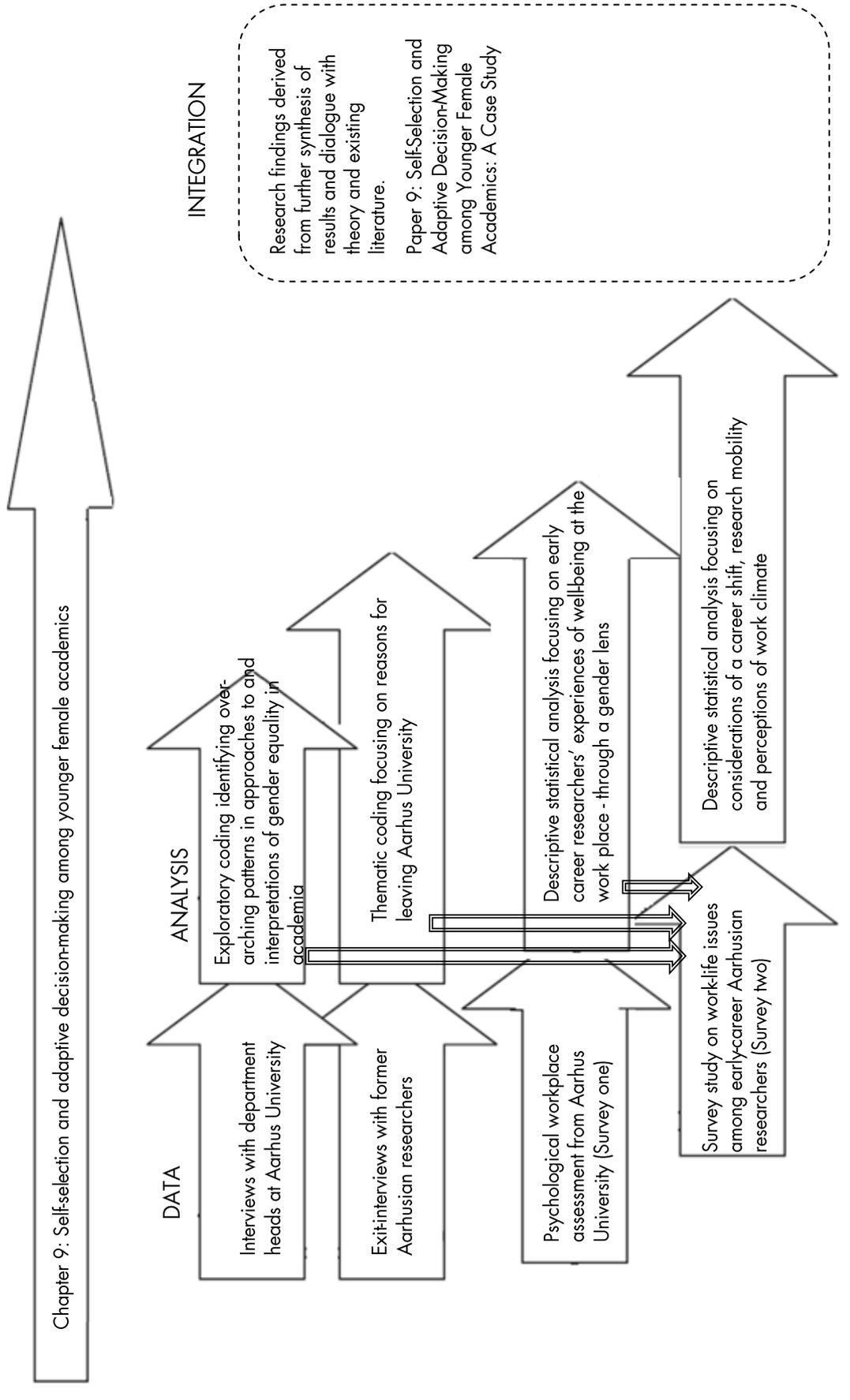


Figure 10. Research design, Chapter 9



Chapter 5. Aarhus University: central characteristics of the main case and its national context

As observed by Husu (2001, p. 66), the existing literature on women in academia in most cases originates from Anglophone cultural settings. While UK and US scholars have provided many important insights on the topic, the particularity of their contextual and cultural settings have often been taken for granted or left unnoticed. Women's position in society as well as the status and priority given to science and innovation, however, varies enormously across regions and national borders, with clear implications for female academics' career prospects and inclusion in the academy (Caprile et al., 2012; Müller et al., 2010). An understanding of the national socio-cultural features and the characteristics of the public university system is, in other words, much needed to fully grasp the gender stratifications in Danish academia. With the ambition of contributing to such an understanding, this chapter provides an introduction to the main characteristics of the Danish case of gender equality, the Danish university system's development and gender stratification, and the institution chosen for in-depth study, Aarhus University.

5.1. The Danish case of gender equality

Internationally, Denmark has for many years been considered one of the most advanced societies in terms of gender equality. Due to its triad-model of a strong welfare system, family-friendly policies and a universal breadwinner model, some have even described Denmark and its Nordic neighbor countries as "gender equal Nirvanas" (Lister, 2009).

Denmark is also rated in the top, second only to Sweden, in the most recent European Gender Equality ranking, highlighting Danish women's relatively high general employment rate in the labor market (Denmark: 70%; EU-27³⁷ average 59%), high tertiary educational attainment (DK: 33%; EU-27 average 26%); full-time child-care facilities, 52 weeks of family leave per child (with financial covering), relatively high levels of representation in the Par-

³⁷ I.e. the member states of the European Union. Croatia became the 28th country in the union in July 2013.

liament, and good average health condition (EIGE, 2013; European Commission, 2013b).

However, despite the high overall scores on gender equality measures (see also World Economic Forum, 2014), Denmark is still characterized by clear patterns of vertical and horizontal gender stratification. The skewed gender distributions across occupations and sectors is, for instance, more pronounced in Denmark than in the rest of Europe, with a clear female domination in healthcare, social work and public administration. This trend is also reflected in the tertiary education system, where women predominantly enter the fields of humanities, education, health and social work (European Commission, 2013b).

With regard to vertical segregation, Denmark has a considerably lower proportion of women in management positions than the EU 27 average (Denmark: 25%; EU-27: 33%) (European Commission 2013b) and in a Nordic comparative perspective, Denmark is a clear underachiever in regards to women's representation on boards (Denmark: 16%; Sweden: 25%; Iceland 25%; Finland 27%; Norway 42%) (European Commission, 2012c). Moreover, Denmark has the lowest female representation of top-managers among the Nordic countries (Denmark: 14%; Finland 17%; Norway: 21%; Sweden: 18%) (Center for Corporate Diversity, 2009). As returned to below, these patterns of stratification also clearly reflect in the gender distributions of the Danish university system. However, before discussing this issue any further, it will be useful to take a closer look at the Danish policy framework on gender equality, and the distinct path that the country has embarked upon to address gender inequality in the context of its Nordic neighbor countries.

5.1.1. The Danish Equal Status Council and the Ministry of Gender Equality

The first Danish Equal Status Council³⁸ was set up in 1975. Prior to that, Denmark had for many years coordinated political initiatives on gender equality and related matters with the other Nordic countries (Borchorst, 2011). In 2000, an Equal Status Act was passed, and the Council was replaced by a Minister for Gender Equality, a departmental gender equality division and an Equality Board. With the parliamentary election and change of government in 2001, this division was disbanded, and the Ministry of Gender Equality was

³⁸ The council, which consisted of representatives of both employers' organizations, labour unions as well as women's organizations, functioned as an advisory organ for the government and municipalities on gender equality related issues.

now given full responsibility for the Equal Status Act and related policies to promote gender equality. As stated in the Act, gender equality is considered an inter-ministerial issue and should be integrated into the activities of the other ministries (Langberg & Jacobsson, 2008). Furthermore, the mainstreaming obligations of public organizations are stipulated as follows: "Public authorities shall within their respective areas of responsibility seek to promote gender equality and incorporate gender equality in all planning and administration" (part 4). The implementation strategy of this provision, however, is unclear, and there are no binding sanctions if public organizations fail to fulfil their responsibilities (Borchorst, 2008, p. 12; Emerik & Jørgensen, 2011, p. 25). One of the initiatives already implemented is a measuring tool obligating state institutions and state-owned undertakings with more than 50 employees to report their status on gender equality every second year. This obligation was facilitated to collect information on institutional gender equality initiatives and monitor gender distributions across job categories (Danish Parliament, 2000, Part 5.1). Aside from this, a statutory instrument, issued by the Minister for Gender Equality in 2004, introduces a legal opportunity for employers, authorities and organizations to:

... take experimental- and development initiatives for a period of up to 2 years to attract the under-represented sex. It is lawful to establish courses or training activities of up to 6 months duration if the aim is to promote gender equality in employment, training and management. In advertisements it is lawful to encourage the under-represented sex to apply for employment or training (European Commission, 2005b, p. 18).

Although this instrument is rarely used, there are some recent examples relevant to this study. The Universities of Copenhagen and Aarhus as well as the research councils have been using affirmative action to promote the representation of female researchers in associate and full professorships.

5.1.2. Scandinavian perspectives on gender equality

A comparison between Denmark and its Scandinavian neighbor countries is illuminating because of the many shared characteristics with regard to geography, language, historical background, culture, welfare-state model, developments in women's civil, social and political rights and socio economic conditions. Yet, despite many overriding similarities, the prevailing national approaches to gender equality in Scandinavia are characterized by substantial differences with respect to discursive and institutional frames. One example is the relatively weak institutionalization of gender equality policies

in Denmark compared to Norway and Sweden (see, e.g., Borchorst & Siim, 2008; Melby et al., 2008). According to Borchorst & Siim (2008), this may be explained by the demobilization of the Danish women's movement during the 1990s, more or less leading to the disappearance of gender issues as a theme of public concern. In Norway and Sweden, on the other hand, gender has remained a relatively hot topic.

In two articles published in 2002 and 2008, Dahlerup compares a number of Danish and Swedish parliament opening speeches, by Prime Ministers, and political party programmes in order to investigate national differences in political discourses on gender equality. The analyses reveal that gender equality, while being a commonly accepted political objective in both countries, is more clearly politicized in the Swedish parliament, with a large number of parties proclaiming themselves to be feminist.³⁹ While the Swedish political debates often involve discussions on the gender-power system, discrimination and oppression, there seems to be a reluctance to deal with such perspectives in the Danish political arena (Dahlerup, 2002, 2008; Teigen & Wängnerud, 2009).

Disputes over theoretical perceptions and interpretations of gender issues have also been more pronounced within Swedish and Norwegian academia. In these countries, academic debates have been characterized by ongoing polarisations between pessimistic and optimistic interpretations.⁴⁰ Despite the potential deadlocks that these polarizations may have caused, they have contributed to sustain the relevance and visibility of the topic in the

³⁹ This tendency was especially pronounced during the late 1990s and in the beginning of the new century. Sweden's current social-democratic/green government has, however, also declared itself to be feminist. As stated in the government platform announced in October 2014 "Sweden's new Government is a feminist government. Inhibitive gender roles and structures must be combated. Women and men must be given equal power to shape society and their own lives. This is the only way our society and each and every individual can reach their full potential" (The Swedish Government, 2014, p. 9 [my translation]).

⁴⁰ The pessimistic interpretations of the topic can be exemplified by Yvonne Hirdman's theory of the "gender system". Hirdman's theory applies a structure-oriented perspective emphasising the on-going political deficiencies and conflicts of interest characterising the Swedish gender-power system (Hirdman, 1991). Hege Skjeie's "rhetoric of difference" (Skjeie, 1992) exemplifies a more optimistic approach to the problem drawing attention to the positive effects and possibilities originating from women's inclusion into the Norwegian political system (Borchorst et al., 2002, pp. 250-255).

public and political arena, thus having an impact on public policy development (Borchorst et al., 2002, pp. 248-255; Dahlerup, 2002; Sjørup, 2008).

According to Borchorst et al. (2002), the Danish debate on gender, power and politics differ from the Swedish and Norwegian with respect to salience, form and content. In Denmark, public discussions on gender equality receive less emphasis and the academic disputes are less pronounced. Moreover, societal changes related to the promotion of women's rights have been considered more profound, than what is the case in Norway and Sweden. Dahlerup (2008), for instance, asserts that issues of structural discrimination and gender justice are often left unnoticed in the Danish political context, since equality between women and men is already considered a reality by the majority of politicians. Pettersson (2007) similarly notes that Danish women's high participation on the labor market has led to the public assumption that gender equality is already achieved.

In an attempt to understand and explain these differences, Borchorst et al. (2002) draw attention to the existence of a particular Danish feminist "discourse of empowerment" emanating from the bottom-up activities of a strong women's movement during the 1970s and the 1980s. This discourse adopts a double perspective on issues of gender, power and politics combining the traditional structure-oriented perspectives of reproduction and exclusion with an agency oriented focus on women's possibilities and potentials as individual and collective actors. According to the authors, the demobilization of the Danish women's movement during the 1990s has led to a weakening of the structure-oriented perspective, thus leaving extra space for the empowerment perspective in public and political debates (Borchorst et al., 2002).

To sum up, issues of gender equality tend to be receiving more public, political and academic attention in Norway and Sweden than in Denmark, and the prevailing explanations identified in the existing literature relates to the demobilization of the Danish women's movement during the early 1990s as well as the lack of long-lasting alliances between Danish feminists and the Danish political parties.

In a 2008 interview, Dahlerup highlights the pronounced internal disagreements in the Danish women's movement over the question of the Maastricht treaty and a Denmark inside or outside the European Union as one of the central explanations to this demobilization (Bøttcher, 2008). Borchorst and Siim (2008), on the other hand, point to the extra-parliamentary character of the Danish bottom-up model and empowerment discourse as a central explanation:

The relationship between feminism from above and feminism from below has taken on very different forms in the three countries, with Sweden as the most institutionalized model and Denmark as the most bottom-up oriented model (...). In Denmark, the extra-parliamentary feminist movement was very strong in the 1970s and 1980s, but feminist issues never gained ground in the political parties. It was the other way round in Sweden, where feminist influence was strongest within the political parties. It is remarkable that the majority of the Swedish political parties today call themselves feminist, whereas gender issues are placed low on the political agenda in Denmark, and the political significance of gender is limited (Borchorst & Siim, 2008, p. 210).

Moreover, Borchorst (2011) highlights the so called “land-slide election”, following in the wake of the oil-crisis in 1973, as an incident of crucial importance in this regard. Prior to that, Denmark had for many years coordinated political initiatives on gender equality with the other Nordic countries. However, with two new political parties in the Danish parliament (the right-winged Progress Party which obtained 16% of the votes and the moderate Christian Democratic Party obtaining 4% of the votes), of which one, the Progress Party, ridiculed all gender equality-related legislation and voted against all proposals on the topic, the political discourse suddenly changed. According to Borchorst, this generated an unfortunate path dependency in the years to follow:

The political climate in Denmark implied that gender equality was not placed high on the political agenda by national actors. During the same period, international cooperation served as an imperative to adopt political initiatives on gender equality. Denmark became a member of the European Community in 1973 as the first Nordic country. EC directives on Equal Pay and Equal Treatment were implemented in national legislation in 1976 and 1978. Sweden and Norway that were not members of the EC enacted legislation that was more far reaching than the Danish, which may be explained by a stronger national momentum for adopting gender equality initiatives (Borchorst, 2011, p. 3)

5. 2. The University system in Denmark: from collegiate governance to top-down management

As a result of the new millennium’s comprehensive university reforms, Denmark has gone from being, what scholars have described as one of the Scandinavian “reluctant reformers” in terms of introducing NPM inspired governance systems (Christensen & Lægheid, 2007), towards being an interna-

tional frontrunner in the field (Pinheiro & Stensaker, 2014; cf. Degn, 2014b). In a European perspective, the Danish universities have undergone comprehensive changes over a relatively short period of time, which makes Denmark an interesting setting for studying the potential implications of NPM influenced reforms from a gender equality perspective.

This section provides an introduction to the main characteristics of the Danish university system and its transformations over the course of the last 45 years. The very first university in Denmark, Copenhagen University, was inaugurated on June 1st 1479. Approximately 350 years later, in 1829, the College of Advanced Technology (Now the Technical University of Denmark) was established and later in the 17th century the Danish University of the Royal Veterinary and Agricultural University (1856) and the Danish University of Pharmaceutical Science (1892) followed along. Aarhus University was founded in 1928, while the universities of Odense (1966) (now the University of Southern Denmark), Roskilde (1972), Aalborg (1974) and the Danish University of Education (2000) (now part of Aarhus University) were founded over the course of the second half of the 20th century (Gregersen & Rasmussen, 2011; Kalpazidou Schmidt, 2006).

Since 1536, all universities in Denmark have been public institutions with some degree of autonomy. Up until the early 1970s, the prevailing governance model gave university professors direct influence on decision-making through the university senates.

In the wake of the 1968 student revolt, where university students claimed their right to be heard, an Act was passed by the Danish Parliament leading to a new governance model based on a senate consisting of 50% professors, 25% students and 25% technical administrative staff. Compared to similar reforms in other countries, this Act entailed a particularly radical democratization of the Danish university system (Degn, 2014b). The university rectors and all of the senate representatives were now elected by their constituencies within the universities. Furthermore, faculty councils, with considerable influence on the faculty and department budgets and academic matters, were elected by their constituencies. Similarly, research staff, teachers, administrative staff and student representatives governed the departments and elected the department heads among their peers (Danish Parliament, 1973; Gregersen & Rasmussen, 2011; Degn & Sørensen, 2014).

At this point in time, no stipulations on gender equality or women's representation in academia were included in the University Act.

In 1993, a new Act on university governance was passed by the Danish Parliament leading to a more traditional institutional hierarchy challenging the collegiate model. Department heads were now given the authority to di-

rectly instruct researchers' to undertake certain tasks and responsibilities, but the election system of the collegiate model was continued (Danish Parliament, 1993: § 7; Gregersen & Rasmussen, 2011; Degn & Sørensen, 2014). During this period, the structure of the postgraduate education system was also reformed. The traditional "doctoral degrees" were phased out and replaced by three year research programmes imposing clear requirements for students to publish their research within a short period after receiving their PhD degree (Öquist & Benner, 2012). While a number of Parliamentary debates during the early 1990s revolved around gender equality in research, no stipulations on the issue were included in the 1993 Act.

In 2003, the Parliament put an end to the democratic governance system with a new University Act (Danish Parliament, 2003). The faculty boards were now replaced by advisory academic councils and the university senates were substituted with university boards with a majority of external members. Moreover, rectors, deans and department heads went from being elected by their peers to being appointed by their superiors – the rector by the university board, the deans by the rector and the department heads by the deans (Gregersen & Rasmussen, 2011). As part of a more overriding NPM-driven reorganization of the state bureaucracy, the Danish universities in 2000 also obtained a new status as autonomous institutions under ministerial supervision. The ministry and each of the universities were now committed to form three-year agreements (or development contracts) defining clear targets and objectives for the universities' activities. As noted by Degn and Sørensen (2014):

The idea behind the enhanced autonomy of the universities and the professionalization of the management and governance structures was, clearly in line with the New Public Management rationale, a belief that by increasing the institutional autonomy of the universities they would be capable of acting strategically in an increasingly competitive market, i.e. that independent institutions are more apt at and prone to act strategically. This was assumed to enhance both their efficiency and the optimal use of public (and private) money, as well as encourage them to position themselves in relation to other institutions, i.e. enhance their institutional competitiveness. The contractualization of the relation with the state, however, was simultaneously strengthened, as a means to enhance central control while strengthening autonomy (Degn & Sørensen, 2014, p. 5).

Not surprisingly, the comprehensive restructurings following in the wake of the 2003 University Act did not receive a warm welcome among proponents

of traditional academic values and principles (see, e.g., Auken, 2010, Auken et al., 2008; cf. Degn & Sørensen, 2014).

Another comprehensive restructuring of the Danish universities took place in 2006, when the Parliament decided to reduce the Danish public research system from 12 universities and 13 governmental research institutes to 8 new universities and four research institutes. In a response to the heated criticism following in the wake of the 2003 University Act, the settlement parties concurrently commissioned an independent evaluation of the preceding reforms (i.e. the 2003 University Act and the 2006 university merger). This evaluation, which was conducted by an international panel of university rectors, professors and consultants, among others, pointed to a lack of participatory procedures and structures leaving limited space for internal stakeholders to take part in the universities' decision making processes. This led the panel to call for the reimplementation of a "high-trust-strategy" committing the university boards to ensure a higher degree of involvement of staff and students. Furthermore, the panel recommended that "the politicians and the implementing authorities should be expected to stick to overall strategic targets and leave to the universities to decide how to reach the targets" (Danish University and Property Agency, 2009, p. 10). According to the evaluation report, the 2003 Act had led to a high degree of micro management in the relationship between the universities and the state causing excessive bureaucracy and inefficiency (Danish University and Property Agency, 2009, p. 29).

On this background, the Parliament in 2011 passed an amendment to the 2003 University Act. However, rather than revising the recently introduced top down governance model, this amendment served as "a completion of the thoughts on streamlining the managerial system (...) whereupon the 2003 Act was based" (Degn & Sørensen, 2014, p. 9). The university rectors were now given direct influence on governing the functions and authorities of the lower management levels (i.e. the dean and department heads), and the universities were at the same time set free to develop internal structures diverging from the traditional hierarchical division of the faculty-department model. Furthermore the 2011 amendment committed the university boards to prepare statutes on issues such as internal organization, recruitment and firing procedures, involvement of staff and students in decision-making, academic councils and doctoral committees. These statutes were (and still are) to be approved by the Minister of Higher Education and Science (Danish Parliament, 2011; Degn & Sørensen, 2014).

An interesting perspective (or lack of perspective) in this regard concerns the role of gender equality in the 2003 Danish University Act and its 2011 amendment. While clear responsibility structures on issues of gender equali-

ty, as returned to in Chapter 6, are integrated into the Norwegian and Swedish national Higher education Acts, the issue is still absent in the Danish legal framework. Objectives on gender equality may be included in the three-year development contracts between the universities and the ministry, but this is not a requirement (Bergman, 2013).

In the wake of the so-called “Barcelona objective” calling EU member states to dedicate 3% of their GDP to research by 2010, the Danish Parliament, in broad political consensus, also adopted the “Globalisation Strategy” in 2006. A “Globalisation council” had been set up in 2005 to advise the government on a new R&D strategy in view of the emerging knowledge economy (Pinheiro & Stensaker, 2014). The strategy involved a comprehensive expansion of public investments in research, innovation and education. Altogether DKK 42 billion, i.e. approximately five billion Euros, were allocated for the initiative, and of this half was spent on research. Furthermore, the Globalisation Strategy involved increased investments in postgraduate education and postdoctoral research positions (DKK 1 billion, i.e. approx. 133 million Euros) (Öquist & Benner, 2012). As a result of this, the university system has experienced an increasing stream of temporary postdoctoral positions, and since the overall number of associate- and full professorships remains relatively scarce, this has created a situation, where many Danish postgraduate researchers embark upon an academic career without any formal prospective career path in place.

In sum, the current university governance structure is formally far more autonomous than what was the case before 2003. However, the universities still rely on high levels of public funding (public funding comprises approximately 60% of the total revenues on research [Öquist & Benner, 2012]), and the Ministry of Higher Education and Science still hold the authority to initiate evaluations of selected universities if they find it necessary (Gregersen & Rasmussen, 2011). Moreover, the universities’ autonomy is conditioned by their commitment to the three-year development contracts with the Ministry of Higher Education and Science, and the statutes developed by the university boards are still to be approved by the Minister.

While the university rectors, as mentioned, have been given direct influence on governing the functions and authorities of the lower management levels, the deans and department heads are still playing an important role in governing their respective organizational entities as relatively autonomous entities with their own budgets and strategic plans. As noted by Öquist & Benner (2012, p. 38), the deans’ authority is much stronger today than it was before the 2003 University Act, and the new and more professionalized role of the department heads has also led to increasing administrative duties and

responsibilities (Degn, 2014a). In this regard, it is also relevant to note that the Danish universities' transition towards a top-down governance model with a professionalization of management and an increasing reliance on state-university contractualized performance measures, as illustrated in the work of Degn (2014b) and Pinheiro and Stensaker (2014), has been joined by an increasing rhetorical emphasis on international competitiveness, innovation, flexibility, quality assurance and responsibility to society. And the new and emerging stratifications of academic organizations, disciplines and professions following in the wake of this development may serve to create both new opportunities and barriers to gender equality at the Danish universities.

5.2.1. Research funding

In this regard, it is also relevant to briefly account for developments in the research funding mechanisms of the Danish research system. In a PhD dissertation illuminating the historical changes in the core-research funding system from 1964-2010, Aagaard (2011, p. 460) draws a picture:

... of a core research-funding model that has been going through a conversion. Where the core research-funding of the universities used to be the guarantee of the freedom of research of the individual academic and the foundation of the research based education across all university-areas, this funding has now (partly) been redirected to new purposes, and it has increasingly come with more and more strings attached.

More specifically, Aagaard's study illustrates a Danish research system increasingly dominated by carriers of innovation-policy and NPM-ideas, while more traditional university-policy ideas have been marginalized over time, resulting in an increasing reliance on strategic funding mechanisms.

The Current share of GDP used for R&D in Denmark amounts to 2.4%, placing the country among the top five OECD countries (OECD, 2014). Approximately two thirds of these resources are, however, spent in the private sector, which is dominated by a large pharmaceutical industry (Langberg & Jacobsson, 2008). Currently, Denmark operates with a two-tier research funding system consisting of basic grants allocated directly to the universities, and external funding distributed by the research councils, strategic research programmes, the ministry R&D funds, the European funding programmes, and private foundations. As part of the Globalisation Strategy (2006-2010), additional basic-grants have been allocated on the basis of the universities' expansion of research staff and their ability to obtain external funding (Frølich et al., 2010). As touched upon in Paper 3, the so-called "globalization

pool” also spawned a new and still existing performance-based funding model allocating additional basic funding based on the universities’ publication activities. This model shares many similarities with the Norwegian “publication indicator”, which was introduced in 2006 with the purpose of measuring and stimulating “the research activity at the level of institutions and to enhance the focus and priority they give to research as organizations” (Sivertsen, 2009, p. 6). As returned to in the following section, several funding programmes have also been directed specifically towards promoting women’s advancement and status in Danish academia.

5.3. Gender equality in the Danish Academy

5.3.1. Gender distributions in Danish academia - development and status

The supply-side argument, as touched upon in the introduction, has often been highlighted as a central explanation to women’s persistent underrepresentation in academia. To refresh the memory of the reader, this argument asserts that the skewed vertical gender distributions of academia are merely the result of a time-lag between women’s access to higher education and the replacement of existing (male) university faculty. Drawing on available data from existing studies on the topic, I decided to test this argument by providing an overview of the historical development in women’s proportion of scientific staff, PhD-degrees and master-degrees at Danish Universities from 1970-2013. As illustrated in Table 9, women “already” comprised 21% of the Danish university master degree recipients in 1970, and 43 years later, in 2013, female researchers were still holding less than 20% of the full professorships at the universities. The enormous increase in women undertaking university educations during the 1980s and 1990s has neither had the expected impact on the gender composition at associate and full professor level in the new millennium.

In this regard, however, it is relevant to note that things appear to be changing for the better. While the proportion of women among full-professors, for instance, merely rose by 4 percentage points from 1977 to 2000, the pace of women’s advancement into full-professorships has increased by 9 percentage points during the period 2001 to 2013. With women being a majority of the Danish master degree recipients already in 1999, it is, nevertheless, still staggering that merely 31% of the current associate professors are women. Inevitably such findings raise the hypothetical question of what the threshold of women’s representation among master degree

recipients will have to be before gender parity is reached (70%, 75% or 80%?).

Table 9. Proportion of women among scientific staff, PhD and master degrees 1970-2013 (percent)

	Scientific rank				
	Full professor	Associate professor	Assistant professor	PhD degree	Master's degree
1970					21
1977	3	15	22		
1979	3	15	22		30
1982	3	14	22		
1990					40
1991	4	16	22		43
1992	5	18	23		
1993	5	17	24		
1995	6	18	26		
1996	5	19	27	36	45
1997	7	19	32		
1999	7	22	36	38	51
2000	7	22	36		
2003	10	24	36		
2006	12	25	40		
2007	13	27	38		
2008	13	28	37	43	55
2009	16	29	37		
2010	16	29	39	45	60
2011	16	29	41		
2012	17	30	40		
2013	19	31	41		

Source: Henningsen & Højgaard (2002), Henningsen (2003), Husu (1984), Ståhle (2003, 2005, 2007, 2011 2014), Bloch & Henriksen (2013), DMR (1998).

As touched upon in Chapter 2, a substantial body of research has focused attention on how non-conscious assumptions about gender characteristics resulting from cultural socialization and upbringing operate to divert women (and men) away from, or towards, certain academic careers. Goulden et al. (2011, p.144) describes the situation in the American academy thus:

The gender split between the more human-centric and non-human-centric sciences remains, with women predisposed toward pursuits that tie more directly to human experience, but even these lines are blurring. Women have made impressive gains in the least tractable of the sciences.

A similar conclusion can be drawn on the basis of the Danish data outlined in Table 10, which displays the vertical stratification of women across scientific fields for the years 1997/1998 and 2008/2013. As appears from the table, women comprised nearly half of the Master-degree recipients and 40% of the PhD degree recipients in the Natural Sciences in 2008,⁴¹ whereas the highest shares of female Masters and PhDs in the same year were found in the Humanities, Social Sciences and the Health Sciences. A comparison of women's transition from Master-degree level to PhD level in these fields also clearly shows that the Humanities and Health Sciences are facing particular challenges in retaining potential female research aspirants in the university system.

Table 10. Women's representation at the Danish universities across scientific fields and ranks, 1997 and 2013 / 1998 and 2008 (percent)

	Scientific rank									
	Full professor		Associate professor		Assistant professor		PhD degree		Master's degree	
	1997	2013	1997	2013	1997	2013	1997*	2008	1998	2008
Humanities	10	33	34	42	49	50	45	52	65	70
Social Sciences	11	20	16	35	30	49	34	48	43	50
Natural Sciences	4	11	13	18	22	29	28	40	36	48
Agro-Cultural Sciences	7	22	24	36	42	53	44	**	57	**
Health sciences	8	20	26	40	41	55	45	55	62	69
Technical sciences	2	10	7	20	23	30	21	23	28	30

* Share of PhDs receiving their degree between 1996 and 1999.

** Agro-cultural sciences are merged with the Natural sciences in the data sources for Master and PhD degree receivers in 2008.

Source: Henningsen & Højgaard (2002), DMS (2009b), Ståhle (2003, 2005, 2007, 2011, 2014), Bloch & Henriksen (2013).

⁴¹ In this regard it is, however, relevant to note that the 2008 data for the Natural Sciences also includes the Agro-cultural Sciences, where women as illustrated in the numbers for the year 1997/1998 tend to have a relatively high representation among Masters and PhDs.

With regard to the research faculty (i.e. the assistant professor, associate professor and full professor level), the most surprising finding concerns the modest shares of female full professors in the Health Sciences (20%) and Humanities (33%) since women already in 1998 comprised the great majority of Master-degree recipients in these fields. The Social Sciences, Natural Sciences, Agro-cultural Sciences and Technical Sciences have, however, neither succeeded in exchanging the comprehensive share of women in the 1997/1998 Masters-degree and PhD pipeline into female assistant-, associate and full professorships, 15 years later.

5.3.2. The origin and development of Danish women's and gender studies

As discussed above, the Scandinavian women's movements have played an important role in keeping the gender equality issue salient on the public and political agenda. A brief overview of the rise of Danish women's and gender studies may therefore also contribute with relevant insights to our understanding of the particular characteristics of the Danish case of gender equality in academia. As described by Ruth Nielsen (1984), the Danish research environment on women's studies sprang out in the early 1970s. In the beginning stages most activities took place in various women's groups organized within or around the research environments of the universities. At that point in time, the state showed no interest in supporting or promoting research on women, and all efforts were therefore made on own-initiative in small informal groups with scarce resources. According to Nielsen (1984), Danish women's studies, in this sense, already from the beginning were characterized by a higher degree of heterogeneity than what was the case among their colleagues in Norway and Sweden.

The 1980s was a vital period for Danish women's and gender studies. Several conferences took place and the Danish society for women's and gender studies was inaugurated. A limited amount of state resources was also provided for a national coordinator of the, until then, quite heterogeneous research activities in the area. Furthermore, eight associate professorships were established as part of setting-up of a number of interdisciplinary university research centers focusing on gender issues. University courses on gender were also launched (Sjørup, 2008). Prominent scholars in Danish women's and gender studies also played an important role in putting the issue of gender equality in academia on the public and political agenda with the aforementioned comprehensive interdisciplinary research project "Gender in academic organizations" initiated in the late 1990s.

However, since then the environment has been in dire straits. The public resources allocated for the national coordinator expired in 2006, and the coordinating responsibility is now placed at the University of Copenhagen, with no direct financial support from the Ministry. Moreover, the funding of research projects on gender issues has been modest, and the student interest in the field has decreased considerably. At the same time, issues of gender have, to an increasing extent, been embedded in the curriculum of broader Social Science and Humanities courses, and a number of central scholars have “opted out” of the field; either to pursue a career at universities in the Scandinavian neighbor countries, where gender studies are more clearly prioritized, or to engage in other research topics (Sjørup, 2008). This has resulted in an academic system with relatively few active scholars in the field.

5.3.3. Policy interventions promoting gender equality in Danish academia

Since the mid-1990s, several national initiatives have been launched to promote women’s status and advancement in Danish academia. This section provides a brief outline of the most central developments from 1994 to 2014 and reflects upon the political motives and actions taken.

As a result of two 1994 parliamentary debates on gender equality in research, a so called “pastoral message” was sent from the Ministry of Higher Education to the rectors of the Danish higher education institutions in 1995. This message called the institutions to develop staff policies including reflections on gender equality and suggestions on how to promote a more equal gender distribution in male dominated scientific fields. Most of the Danish universities developed such plans, but very few set up clear targets and objectives (The Prime Minister’s Office, 1998).

In a response to the lacking institutional commitment, the Danish Minister for Research and Information Technology, in 1997 published an 11-point plan calling for clear incentives to further women’s career advancement in research. The plan, which was the result of five round-table discussions with stakeholders and experts, highlighted the crucial importance of making gender equality a clear management priority at the universities (The Prime Minister’s Office 1998). As illustrated in the excerpt below, gender equality was at this point considered a question of utilizing women’s potentialities in the best possible way:

There are not enough women in Danish research. Women comprise one half of the population but only every fifth researcher is a woman. Women constitute an important resource for the improvement of the quality of research. Denmark

is cheating itself when it does not make full use in research of women's potentialities" (DMR, 1997: no page specifications available)

In the wake of the 11-point plan, the minister also appointed a Committee for Gender Equality in Research to develop concrete recommendations on the issue. As illustrated below, the question of making the most of the available intelligence pool was further highlighted in this document:

The low proportion of women in research entails resource losses which are very unfortunate for Danish research. The small generations and the bulge of older researchers (...) make it particularly important to make more use of the female intelligence pool than what is the case today (DMR, 1998: no page specifications available, my translation).

On joint initiative of the Danish Minister for Science, Technology and Innovation and the Minister for Gender Equality, another advisory committee was appointed in 2004. In 2006, this so-called "think tank", consisting of university rectors and deans, public and private sector research leaders and industry stakeholders, published the white paper "Bringing all talent into play" providing further recommendations on gender equality in research (DMS & DGE, 2005). Interestingly, the underlying motives for promoting gender equality was now directly coupled to international ideas about the knowledge economy:

Achieving the ambition of Denmark as a leading knowledge-based society requires that we are able to cultivate talent. In the future, Denmark will need more researchers; and researchers who can measure up to the best in the world. The recruitment of more women to research will be a considerable asset and an important part of the renewal process that universities and research-based enterprises have to go through to enhance innovation and competitiveness (DMS & DGE, 2005, p. 1)

While the focus on gender equality as a strategic matter has been consistent in the policy documents from 1998 to 2005, the new millennium has spawned an increasing rhetorical emphasis on the promotion of female research talent as a lever to enhance innovation and international competitiveness. This liaison between gender equality and managerial ideas about competitiveness and creativity can be interpreted in light of a more general shift in Danish university policy-making from the early 2000s towards rationales adhering to the knowledge based economy and the idea of the entrepreneurial university.

Table 11. Recommendations by the committee for gender equality in research, 1998 and 2005

Committee for gender equality in research 1998	Think Tank for gender equality in research 2005
A future revision of the University Act should include a commitment of the universities to take on clear responsibilities for promoting gender quality.	The Minister for Science should make agreements with the universities on increasing the share of women researchers. This agreement may be included in the university development contracts or take the form of organizational gender equality action plans. The agreements should be publicly available and involve an annual follow up on targets and objectives.
The institutions should develop gender equality action plans with clear targets and objectives on a regular basis and the fulfilment of these targets should be included in the university development contracts.	Resources should be allocated for research programmes targeting talented young women researchers.
40 professoriates should be earmarked for 'the underrepresented gender'.	Barriers hindering researchers' contact with the workplace while being on leave should be removed
Specific funding for international female guest professors should be established.	Universities should not leave the financing of maternity leave up to the individual research groups.
Recruitment and selection criteria should be defined in broader terms including other aspects than scientific merits.	Universities should create attractive research environments
Assessment committees should always include at least one female participant.	Universities should use broad announcements of vacancies
Periods of low publication rates due to leave periods and increased care responsibilities should not be a disadvantage in appointment processes.	Universities should establish mentor systems and networks
Financial support should be provided for researchers to bring along spouses and children when going on research stays abroad.	Universities should consider introducing <i>flexible</i> assistant professorships
	Universities should encourage female scientists to get involved with research management from an early career stage.
	Universities should create a sound balance between teaching, research and other duties.

Table 11, below, juxtaposes the most central recommendations of the 1998 and 2005 committees for gender equality in research, and provides an illustrative example of the circularity characterizing the policy-making in this area. Both committees recommended that the universities should be committed to develop independent gender equality action plans with clear and regularly updated targets and objectives, and that these action plans should be included in the development contracts between the universities and the state. Furthermore, the 1998 committee recommended that formulations on gender equality should be integrated in a future revision of the University Act. As noted earlier, gender equality is still absent in the University Act, and while

the idea of including gender equality as a target in the three-year development contracts has been taken up by several universities, it is no requirement and there are no clear sanctions if universities fail to fulfil their responsibilities.

Interestingly, the 1998 recommendations also include the quite radical suggestion that 40 professoriates should be earmarked specifically for the “underrepresented gender”. The Minister for Science and Information Technology, however, failed to attract the necessary support from the industry and social partners on this question, and similar measures taken in Norway and Sweden have since proven to be at odds with the European Union/European Free Trade Association-directives curtailing the application of affirmative action to include situations where two applicants are equally qualified for a position (more on this in Appendix 9).

The 1998 recommendation that assessment committees should always include at least one female participant has been integrated into the gender equality actions plans of several of the Danish universities (DMS, 2009a). However, as illustrated by Ståhle (2007, 2011), only modest progress has been made in the area. The issue of accounting for (women’s) periods with low productivity rates due to maternity and parental leave and increased care responsibilities has been left solely up to the universities. The 2005 committees’ recommendation that resources should be allocated for research programmes targeting young talented women researchers has given rise to several affirmative action programmes initiated by the Danish Research Council of Independent Research (more on this below). In line with the 2005 suggestions, many universities have also initiated mentoring programmes and networks (DMS, 2009a), while structural transformations such as the collective financing of maternity leave periods and the establishment of flexible assistant professorships are still to be addressed.

In 2008, a new Minister for Gender equality drew up a “Charter for Women in Management” with the purpose of strengthening private and public institutions’ commitment and efforts to promote women’s presence at the upper organizational ranks. The Charter, which was signed by several of the Danish universities, encouraged the participating organizations to address seven general objectives on the basis of self-tailored strategies and approaches (DMSO, 2008). As returned to, this charter became the starting point for Aarhus University’s most recent gender equality action plan.

5.3.3.1. Affirmative action in the National Research Councils

As mentioned, a number of affirmative action programmes have also been initiated by the Danish Parliament and the Ministry of Science, via the re-

search councils. As part of the 1998 Financial Act, DKK 78 million was allocated for a four-year funding programme under the acronym FREJA (Female Researchers in Joint Action), aimed at supporting young women in research. The FREJA programme, which was introduced as a surrogate for the 40 earmarked professorships recommended by the 1998 Committee for Gender Equality in Research, was based on the criteria that a female candidate would be preferred if two or more candidates of both genders were considered equally qualified for a grant. 94% of the FREJA applicants were women, and with an overall success rate of less than 5%, the competition ended up being far more intense than what was the case for the ordinary research funds allocated by the research councils (Rosenbeck, 2003; Maule et al., 2005). In 2006-2008 the FREJA programme was followed up by another affirmative action programme targeting young women researchers in natural science and technology related fields. More specifically, DKK 45 million (i.e. approx. 6 million Euros) was allocated for the programme, and both women and men were invited to apply. Like in the case of the FREJA programme, female candidates were, however, preferred if two applicants were considered equally qualified (DMF, 2006).

In the period 2008-2009, the Danish Council for Independent Research (DFF) initiated yet another affirmative programme; this time with the overall aim of supporting the qualification and career advancement of female research leaders. DKK 104 million, (i.e. approximately 13.9 million Euros) was allocated for the programme, which resulted in altogether 80 grants (DMS, 2009a).

Finally, DFF in 2014 allocated DKK 110 million (10% of its total budget for 2014) for another affirmative action programme under the acronym YDUN (Young Women Devoted to a University Career). 527 female and 26 male research leaders applied for the programme's altogether 17 grants, resulting in an overall success rate of 3%. In comparison, the average success-rate for research leaders applying under DFF's ordinary funding programmes in 2013 was approximately 19% (Nielsen, 2014).

While the vast amount of resources invested in the abovementioned, programmes undoubtedly has had an enormous impact on the career progression of the individual candidates receiving grants, such programmes, as returned to in Chapter 6, "leave in place the structures and policies of the game itself" (Kolb et al., 2003, p. 11), thus mainly functioning as a treatment of the symptoms rather than the underlying causes.

5.3.3.2. Temporary responses to meet temporary requirements

In sum, the continuous establishment of new committees on gender equality in research has clearly resulted in some progress. However, the political priority of the topic has been quite sporadic with no clear consistency in the measures and activities taken. In this regard, it is relevant to note that the universities, due to their autonomous status, are expected to develop strategies and activities on own-initiative. In other words, there are no clear structures of responsibility in place between the state and the universities to ensure a continuous institutional commitment, and the gender equality work of the universities therefore confines itself to “temporary” responses to meet “temporary” political requirements and recommendations. This creates a situation where new institutional gender equality action plans crop up now and then, but only to decrease in salience and intensity until a yet another minister and advisory committee places gender equality in research on the public and political agenda.

5.4. Aarhus University: a brief introduction

As should be clear from the preceding chapters, Aarhus University constitutes the main starting point for this dissertation’s endeavor to understand and explain women’s persistent underrepresentation in the highest academic ranks. This section provides a brief introduction to the main case.

With an enrolment of approximately 40,000 students and 8000 employees⁴² (including 4000 full researchers⁴³), Aarhus University is the second-largest public institution of higher education and research in Denmark. The university accounts for approximately 23% of the research output of the Danish universities and 32% of the output from the three Danish university hospitals (Piro & Schneider, 2011).⁴⁴ 60% of the university’s funding is financed by the state and out of this 34% is allocated as core-research funding and 28% comes from competitive research funds (Holm-Nielsen, 2012; Pinheiro & Stensaker, 2014). The university hosts 13 Centers of Excellence financed by the National Research Foundation, and is consistently ranked top 100 in three of the most prestigious world university rankings (i.e. the Leiden Ranking, the Shanghai Ranking and the QS World University Ranking).⁴⁵

⁴² I.e. full-time equivalents.

⁴³ I.e. full time equivalents.

⁴⁴ This is the calculated percentage of output for the period 2005–2009.

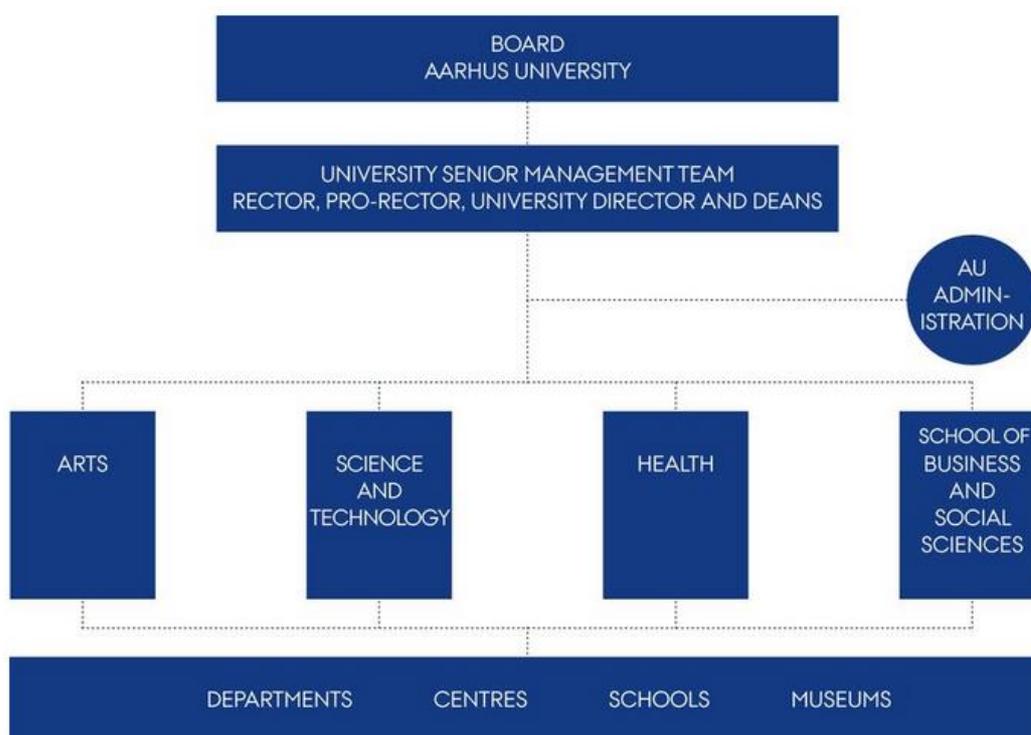
⁴⁵ <http://www.au.dk/forskning/>

At its inauguration, Aarhus University adhered to the “classic” German “Humboldtian ideal”. However, as observed by Pinheiro & Stensaker (2014, p. 498), the university has, since then, “radically pursued an internal reform agenda as a means of coping with the new dynamics brought about by shifting (...) conditions, both domestically and internationally”. In correspondence with the 2003 University Act, Aarhus University in 2005 introduced a new governance structure based on appointed leaders and a university board with a majority of external members. This restructuring was merely the first step in a more wide-ranging organizational transformation process involving extensive mergers and a comprehensive reorganization of the organizational entities.

From 2006 to 2008, the university almost doubled its size as a result of amalgamations with Herning Institute of Business Administration and Technology in 2006, and Aarhus School of Business, The Danish University of Education, The Danish Institute of Agricultural Science and the National Environmental Research Institute in 2007 (Degn, 2014c). These mergers entailed a 40% increase in the university’s annual turnover (approximately 826 million Euros in 2012), and led to a much more heterogeneous and geographically dispersed institutional composition. In continuation of the merger process, Aarhus University, in 2010 initiated a comprehensive reorganization exercise with the strategic objective of establishing one “unified university” (Pinheiro & Stensaker, 2014). This transformation reduced nine faculties into four main scientific areas and consolidated 55 research units into 27 new departments⁴⁶ (see Figure 11 below). At the same time, the university administration was centralized as a means to connect the pre-existing local administrative entities adhering to the merger institutions, faculties and departments into a unified all-encompassing administrative organ, with the aim of creating of enhancing efficiency (Pinheiro & Stensaker, 2014, p. 509). Ten management units were consolidated to a unified senior management team consisting of the Rector, the Pro-Rector, the University Director and the four Deans with wide-ranging responsibility for quality assurance and strategic decision-making. As illustrated in Figure 13, Aarhus University today hosts the four main scientific areas Arts, Science and Technology, Health and the School of Business and Social Sciences. Each of these areas cover a wide range of different scientific disciplines and educations consolidated in 27 departments.

⁴⁶ During this process the university also merged with Aarhus Engineering School.

Figure 11. Organization chart, Aarhus University 2012



Source: <http://www.au.dk/en/about/organisation/chart/>

5.4.1. Gender distributions at Aarhus University: Development and status

As touched upon in the discussion of case-selection in Chapter 4, gender inequality is a persistent phenomenon at Aarhus University. This section provides a brief overview of the current gender distributions in management and decision making-bodies and further discusses the gender stratifications among research staff.

5.4.1.1. University management and decision-making bodies

As appears from Table 12, two out of seven positions in the university senior management team are currently held by a woman,⁴⁷ and three out of altogether 14 Pro-Deans are women. At department level women currently comprise seven out of 27 positions as department heads,⁴⁸ and three out of

⁴⁷ The current University Director and the Dean of the main scientific area of Arts are women.

⁴⁸ When I conducted the 24 interviews in the fall 2013, five department heads were women.

altogether eight deputy director positions in the administrative organ.⁴⁹ As regards gender distribution in decision making bodies (see Table 13 below), women are slightly overrepresented in the university board, while the academic councils have a clear overrepresentation of male research representatives.

Table 12. Gender distribution in university management (June, 2014)

	Female	Male
Rector, Pro-rector & University Director	1	2
Deans	1	3
Deputy Directors	3	5
Pro-deans	3	11
Head of Department	7	20

Source: www.au.dk.

Table 13. Gender distribution in decision making bodies (June, 2014)

	Female	Male
University Board	6	5
Academic Council – Health	4	9
Academic Council – Science & Technology	4	12
Academic Council – Arts	4	8
Academic Council – The School of Business and Social Sciences	8	17

Note: The displayed figures on gender distributions in the academic councils merely concern the representation of academic staff. Technical and administrative staff representatives are not included.

Source: www.au.dk.

5.4.1.2. Women's representation among research staff

Table 14 displays the developments in women's share of academic staff at Aarhus University over the course of the last six years. The female share of full professors has increased from 12% to 17% within the period, whereas women's representation among PhD fellows, assistant professors and associate professors has been relatively stable. Like at the national level (see Table 9), the gender composition among full professors, in other words, appears to be slowly changing for the better, while the university still faces crucial chal-

⁴⁹ The Deputy Directors of "Staff Members", "AU Communication" and "Human Resources" are all women.

allenges in retaining female PhDs and assistant professors in the system as reflected in the modest increase in female associate professors.

Table 14. Share of women researchers at Aarhus University distributed on scientific position (percent)

Year	Scientific rank			
	Full professor	Associate professor	Assistant professor	PhD fellows
2008	12	30	39	48
2009	13	32	42	47
2010	15	32	41	49
2011	15	31	43	48
2012	14	32	42	50
2013	15	31	43	51
2014	17	33	41	51

Source: Nielsen et al. (2012, 2013a, 2013b); Grønfeldt et al. (2014).

Table 15 displays the current gender compositions in each of Aarhus University's four main scientific areas (for specifications of department level distributions see Table A.10.1-A.10.5 in Appendix 10). In line with the national figures presented in Table 9, women's presence is lowest in Science and Technology and highest in Arts, which comprises the disciplines within humanities and related fields. Compared to the other main areas, Science and Technology holds a relatively high share of women in assistant professorships (including postdocs) when accounting for their presence among PhDs. A total share of 6% full professors and 21% associate professors in Science and Technology, however, reveals that the main area has not succeeded in exchanging the 38% share of women in the 1997 student pipeline into approximate proportional female representation at senior research level. A similar conclusion can be made for Health and Arts, where women already in 1997 comprised the great majority of university students.

Table 15. Share of 2014 women researchers and 1997 students at Aarhus University distributed on scientific position and main area (percent)

	Scientific rank				Student enrolment
	Full professor	Associate professor	Assistant professor	PhD fellows	
	2014				
Arts	32	39	46	66	65
Business and Social Sciences	19	36	50	57	40
Health	16	38	47	60	62
Science and Technology	6	21	41	39	38

Source: Grønfeldt et al. (2014); DMS (2009b).

5.4.2. Existing knowledge on gender inequality at Aarhus University

A few qualitative studies have already investigated the structural and cultural barriers to women's career advancement at Aarhus University. In 2005, the Rectorate commissioned the consultancy firm Lützen Management to investigate why early-career female researchers were leaving the university at higher rates than their male colleagues. The study, which was based on qualitative interviews with 31 young researchers (12 male and 19 female) from a wide range of departments, asked the interviewees to describe what they considered to be the most and least attractive features of being a research employee at Aarhus University. While most of the interviewees (both male and female) highlighted "tough" work conditions as one of the less attractive features, especially the young women pointed to feelings of isolation and loneliness, when explaining their considerations of abandoning a career at the university. Moreover, a number of mainly female interviewees highlighted an extremely competitive and time-demanding work culture – high on assertiveness and low on cooperativeness – as a less attractive feature of their research career (Lützen & Larsen, 2005).

In 2010, the Danish Centre for Studies in Research and Research Policy, on mandate from Aarhus University's now dissolved Taskforce for Gender Equality, conducted another qualitative study focusing attention on 32 former Aarhusian researchers' sentiments for abandoning a career at the university.⁵⁰ In line with the findings of the study from 2005, a large share of the

⁵⁰ As noted, 17 of the interviews conducted as part of this interview study have also been used as empirical data in my own endeavors to understand why a considerably

interviewees taking part in this study described their work life at the university as time-demanding and ultra-competitive. Several of the early-career interviewees also highlighted feelings of loneliness emanating from individualized and autonomous work forms, and problematized the university's opaque and unclear career paths (Faber, 2010).

5.4.3. Activities to promote gender equality at Aarhus University

In a response to the introduction of the national gender equality action plan "Bringing all talent into play" in 2005, Aarhus University developed its first gender equality action plan in the new millennium the same year. In line with the recommendations of the 1998 report published by the national Committee for Gender Equality in Research, this action plan recommended that the universities should announce research vacancies in the broadest possible terms without regard to the strategic professional development of the local research entities. Likewise it stated that assessment committees should include both male and female evaluators, and that periods of low publication rates due to family leave and increased care responsibilities should not put women at a disadvantage in the university's appointment processes. The action plan also suggested that a financial support programme should be provided to cover the expenses of researchers bringing along spouses and children when going on research stays abroad. Moreover, it stated that administrative and research related responsibilities should be equally distributed among male and female research staff, and that department heads and PhD supervisors should make a particular effort to raise awareness to their PhD student of the research career opportunities within the organization. Finally, the action plan recommended that recruiters, when announcing research positions, should always search for qualified female candidates inside as well as outside the university (Aarhus University, 2005). As illustrated in the following chapters, many of these issues are still to be addressed at university.

Inspired by the 2005 national Taskforce for Gender Equality in Research, Aarhus University, in 2008, appointed a local taskforce consisting of the University Director, HR partners and Aarhusian researchers with expertise on the topic, to draw up a new gender equality action plan. Concurrently, the university management signed the aforementioned national Charter for More Women in Research, hereby committing to set up specified targets for gen-

higher share of female than male postdoc level researchers at Aarhus University abandons a research career.

der equality and develop local gender equality action plan (I elaborate further on the content of this action plan in Chapter 6) (Nielsen et al., 2013a).

After a few years with only modest activity, the Taskforce for Gender Equality was replaced by a Diversity Committee in 2012, consisting of the University Director, HR partners and research representatives from each of the four main scientific areas. In 2014 this committee initiated the development of a new gender equality action plan, which among others has drawn on the preliminary findings of this dissertation (see Nielsen et. al., 2014b) and the activities of the STAGES project. The new gender equality plan is to be announced during the spring 2015 (Nielsen et al., 2013a).

From 2006 to 2011, a bottom-up network under the acronym frAU (female researchers at Aarhus University) also worked actively to keep gender equality salient on the university agenda. In 2009, the network, for instance, organized a comprehensive international idea exchange conference under the title “Women in Academia” and furthermore provided suggestions for the university’s development of a new gender equality action plan the same year. However, since 2011 the network has been inactive, and despite several attempts to revitalize its activities, the frAU is now dissolved. To sum up, the furtherance of gender equality at Aarhus University, in this sense, now delimits to the activities of the Diversity Committee and the EU Fp7 financed project STAGES described in the preface of this dissertation.

5.5. Wrapping up

This chapter has introduced to the Danish case of gender equality, the main characteristics of the Danish university system, and the central features of the organization chosen for in-depth study (i.e. Aarhus University). I have shown how Denmark, despite high overall scores on international gender equality measures, still faces clear challenges with regard to both vertical and horizontal gender stratification. Moreover, I have provided a comparative framework for understanding the distinct path that the country has embarked on to address gender equality in the context of its Scandinavian neighbor countries and provided an introduction to the main characteristics of the Danish university system, with a particular focus on the recent decade’s radical NPM-driven transformations potentially spawning both new opportunities and barriers to gender equality in academia. I have also outlined the historical development in women’s representation in Danish research from the 1970s to 2013 and sketched out the key developments in the national initiatives to promote women’s status and advancement in Danish academia since the mid-1990s.

Finally, I have described the recent mergers and reorganizations at Aarhus University, provided an overview of the organization's current gender compositions, and summed up the past endeavors to address the gender equality challenge at the university.

In the following empirical chapters, I will draw on these findings as a reference point for developing richer and more contextually embedded analyses of the interrelated factors and mechanisms, which under certain circumstances can be expected to be instrumental to women's persistent underrepresentation at the highest scientific ranks.

Chapter 6. Scandinavian approaches to gender equality in academia

[Papers not included in web version]

Paper 1: Justifications of gender equality in academia: Comparing gender equality policies in six Scandinavian universities, *NORA – Nordic Journal of Feminist and Gender Research*, 2014, 2(3), 187-183.

A written outline of the background text analysis is available in Appendix 1.

Paper 2: Scandinavian approaches to gender equality in academia: a comparative study.

Accepted for publication with minor revisions in *Scandinavian Journal of Educational Research*.

A summary of the national legislative frameworks and policy initiatives, which I refer to in the paper, is available in Appendix 9.

Chapter 7. Scientific performance assessments through a gender lens

[Papers not included in web version]

Paper 3: Gender consequences of a national performance-based funding model: New pieces in an old puzzle
Currently undergoing review in *Studies in Higher Education*.

Paper 4: Gender inequality and research performance: Moving beyond individual-meritocratic explanations of academic advancement, *Studies in Higher Education*, Published online, 23 February 2015.

Paper 5: Scientific performance assessments through a gender lens: a case study on evaluation and selection practices in academia
Currently undergoing review in *Science & Technology Studies*.

Analytical displays illustrating the different types of scientific performance measures employed in the evaluation of applicants at Aarhus University, and discussed in Paper 5, are enclosed in Appendix 3.

Chapter 8. Gender in academic recruitment and promotion

[Papers not included in web version]

Paper 6: Limits to meritocracy? Gender in academic recruitment and promotion processes

Accepted for publication with minor revisions in *Science and Public Policy*.

Chapter 9. Self-selection and adaptive decision-making among younger female academics

[Papers not included in web version]

Paper 7: Self-selection and adaptive decision-making among younger female academics: A case study
Submitted for publication in *Gender, Work & Organization*.

Chapter 10.

Conclusion

At any rate, when a subject is highly controversial – and any question about sex is that – one cannot hope to tell the truth. One can only show how one came to hold whatever opinion one does hold. One can only give one's audience the chance of drawing their own conclusions...
(Virginia Woolf, 1929, p. 5)

As touched upon in Chapter 1, both gender and gender equality can be viewed as essentially contested notions. Daily, we all take part in mixed gender settings in our work and family life, which form our personal views and beliefs about gender roles and the causes of gender variations across occupations. Therefore, most people will be more inclined to voice their opinion, and position themselves as knowledgeable on such issues, than they will on other subjects less debatable and less close to home.

To raise the issue of gender inequality in academia, in other words, is to venture into a highly charged and politicized field. It is my hope that this dissertation will provide the foundation for a deeper and more well-rounded understanding of the complex phenomenon of gender inequality in Danish academia. In the preceding chapters, I have documented some of the interacting and mutually constitutive factors and mechanisms contributing to produce and reproduce gender stratifications at Aarhus University. In this concluding discussion, I will connect these findings into a larger picture of the cumulative disadvantages facing women researchers in a rapidly changing academic landscape.

The chapter opens with a discussion of the key results derived from the four empirical chapters. After this, I will briefly touch upon the applicability and limitations of the critical realist framework and reflect on emerging questions for future research. Finally, I will provide some thoughts on the policy implications of my research.

10.1. Connecting the dots

10.1.1. Scandinavian approaches to gender equality in academia

As a first step towards opening the black box of gender equality at Aarhus University, Chapter 6 employed a macro-level perspective on the distinct paths that the Scandinavian countries and universities embark on to address gender equality issues in academia. More specifically, the purpose of this chapter was to contrast and compare the frameworks and strategies for legitimating and promoting gender equality in the selected countries and universities, and by doing this, obtain a closer understanding of the priority and value given to issues of gender equality at Aarhus University. In short, what can be derived from this cross-case comparison is summarized as follows:

- The Norwegian and Swedish legislative frameworks provide clearer structures of responsibility for the universities' work with gender equality than what is the case in Denmark.
- In comparison to Norway and Sweden, the Danish actions to promote gender equality at the national level tend to revolve around a narrower span of approaches, and a relatively larger share of the Danish universities' gender equality actions also adhere to the fixing the women frame.
- The universities' strategies for rendering gender equality targets attractive at lower organisation levels appear to be less systematic and well-developed in Denmark than in Norway and Sweden, which in view of the existing knowledge from the diversity management literature may contribute to explain the lower share of female associate and full professors in Denmark.
- The Danish universities (including Aarhus) are more reluctant to articulate and justify their organizational work on gender equality on the basis of rights-based arguments, than what is the case among the Norwegian and Swedish Universities.
- In opposition to the Swedish and Norwegian university documents, the Danish statements primarily represent gender equality as a problem connected to the women rather than the organization.

Together, these findings sketch out the contours of a Danish system, where gender equality in academia appears to be of lower priority, and where the rights-based argument for promoting women academics' status and advancement is more or less absent. Moreover, the Danish universities and state

organs tend to adhere to a liberal approach to gender equality in organizations relying on an interpretation of women's underrepresentation as a problem related to the women rather than the organization (i.e. the fixing the women frame).

It seems reasonable to interpret these findings against the backdrop of a more modest general concern for issues of gender equality in the Danish public and political arena. The prevailing Danish assumption that gender equality is already a reality may, as returned to below, also play an important part in explaining the department heads' understandings and interpretations of the topic.

Another central finding derived from Chapter 6, concerns the recurring emphasis on utility-based arguments for promoting gender equality. This rhetoric can be viewed as a new and more instrumental approach to the topic connected to new managerialist ideas about productivity and creativity. The utility-based rhetoric delineates the complex and interwoven organizational rationalities setting the scope of gender equality related activities, and points to the increasing importance of investigating how current trends of internationalization, marketization, and managerialization redefine and restructure the topic.

It is reasonable to contend that this rhetoric arises from a shared set of underlying assumptions concerning the inexorability of globalization and economic change in the "knowledge-based economy" (Fairclough, 2003). The main trends of this paradigm's entry into the policy fields of research and higher education can be summarized as follows: 1) an increased emphasis on development and retention of human capital, 2) a promotion of entrepreneurialism, and 3) the establishment of a strong knowledge base (Jessop, 2008). As pointed out by Hazelkorn:

The interconnection between knowledge, economic/industrial and intellectual property has helped reshape (...) scholarly practice. Their argument is simple: nations compete on the basis of innovation which is 'fundamentally stored in human brains' [...]; it therefore necessitates investment in 'academic capital' (Hazelkorn 2011, p. 18).

As a means to ensure investments in "academic capital" and attract the "best and the brightest", universities are, to an increasing extent, attaching importance to the rhetoric of the "global competition for talent" (Brown & Tan-nock, 2009). This rhetoric is also closely connected to the prevailing arguments for promoting gender equality in Danish academia. The Swedish gender equality statements appear to convey a more egalitarian approach to the topic of equality in research, than what is the case in the Danish state-

ments. On the fourth page of Uppsala University's gender equality plan, it is, for instance, stated that the university "undertakes to draw on the talents, competencies and resources of all concerned" (Uppsala University, 2010, p. 4), while the statement at Lund University underlines the importance of utilizing the knowledge and ambitions of employees in general (Lund University, 2011, p.1). As illustrated below, the Universities of Bergen and Oslo include similar formulations.

A university's most important resource is the people who work and study there. Therefore, this strategy aims to provide possibilities that bring out the best in each individual. An internationally leading university must conduct an active policy of equality between women and men, and a recruiting policy that ensures diversity and equal opportunities for all (University of Oslo, 2010b, p. 5).

It is the university's vision to be an internationally acknowledged research university. An important requisite for achieving this objective is the establishment of international and diverse research environments with a good gender balance and age structure. It is also important that the university has a recruitment practice that ensures equal rights and provides all of the academic employees with time and funds for research (University of Bergen, 2011, p. 3).

In the first of the excerpts above, drafted from Oslo's main strategy, a direct relation is made between the organization's work on gender equality and a strategy that "aims to provide possibilities that bring out the best in each individual". The second excerpt, taken from Bergen's equality plan, likewise emphasizes an inclusive perspective. In this text, a direct relation is made between the universities' overriding vision of becoming an internationally acknowledged research institution and the obligation of providing all of the academic employees with time and funds for research.

As opposed to this, the statements of Aarhus and Copenhagen represent a more elitist approach to the topic. Priority here is mainly given to the question of retaining and attracting the (most) talented female researchers.

A simple counting of document keywords also reveals an overrepresentation of notions and words related to the "rhetoric of talent" in the Danish statements. Table 16 displays the number of times a term, similar to the examples below, has been used in each of the six universities' gender equality documents.

This means that the University must substantially improve its ability to (also) realise the potential of women research talents (University of Copenhagen, 2008).

To ensure that young women with talent and potential for a research career receive the necessary backing (Aarhus University, 2009).

Table 16. Institutional variations in the rhetorical emphasis on issues of retention and attraction of research talent in the gender equality plans

	Aarhus	Copenhagen	Bergen	Oslo	Lund	Uppsala
Gender Equality Plans	9 (9)	8 (9)	0 (21)	0 (3)	0 (3)	0 (11)

Note: The number in parentheses account for the approximate number of pages of the given documents.

As illustrated in the table, there is a clear overrepresentation of terms connected to the “rhetoric of talent” in the statements of Aarhus and Copenhagen. Formulations similar to the examples outlined above are mentioned nine times in each of the Danish universities’ gender equality plans, whereas none of the Swedish and Norwegian university policy statements place emphasis on this perspective.

The Danish universities’ strong policy focus on gender equality (or diversity) as a means of utilizing talent raises fundamental questions about what a research talent is, how it is defined and identified, and to what extent its prevailing conceptions intermingles with issues of gender and gender equality. Furthermore, one may question which talents – in addition to academic merits – are actually needed of a researcher to survive in the academic world? These concerns have constituted the thrust of chapters seven, eight and nine summarized and discussed below.

10.1.2. Gendered implications of scientific performance measures

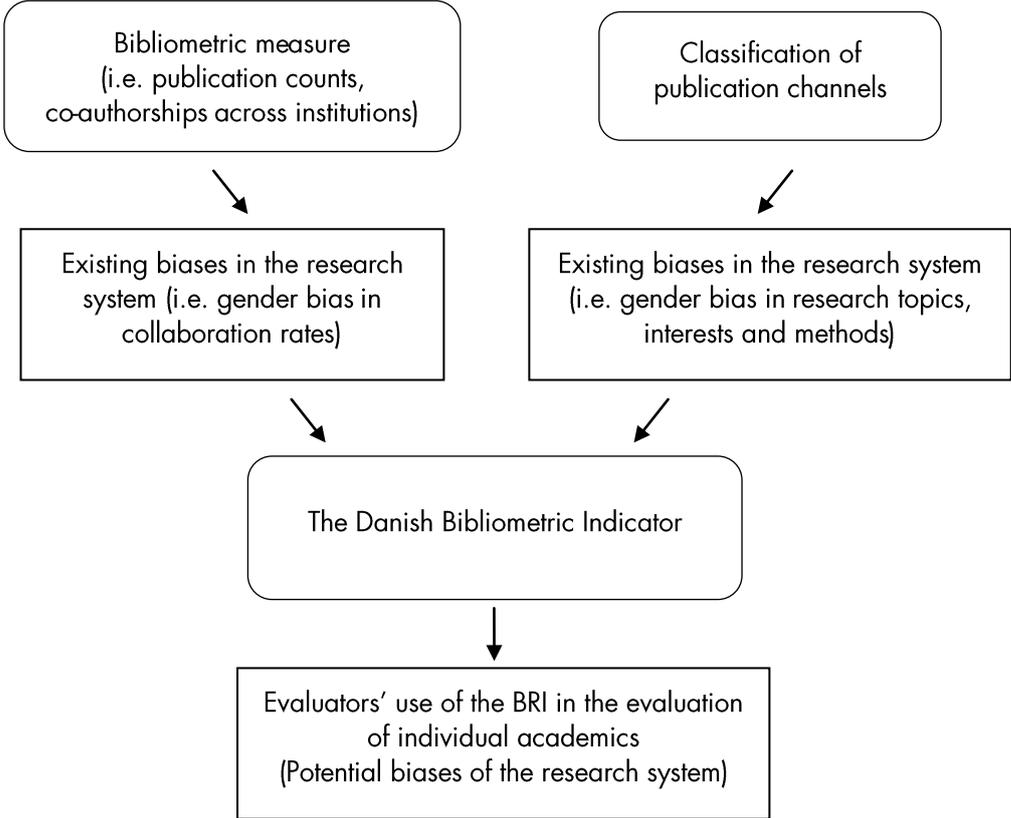
Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted (Einstein, Unknown).

Chapter 7 set out with the ambition of disentangling the gendered implications of the expanding use of scientific performance metrics in the assessments of individual researchers’ scientific merits. In the first part of this chapter (i.e. Paper 3), I showed how the introduction of the Danish Bibliometric Research Indicator (BRI) considerably amplifies the existing gender gap in Danish researcher performance. I suggested two probable explanations to this finding: A) Women merely comprise 18% of the committee members determining which journals and book publishers to classify as “well-regarded” and “normal”, which may lead to biases in the classification process; B) The

model privileges collaborative research, which disadvantages women due to gender differences in collaborative network relations.

These findings provide important new insights on the question of whether formalized bureaucracy counteracts or promotes gender equality. While the conditions for including women in academia, as asserted by Flicker et al. (2010), have been expected to be more favorable in times of transparency and formalization, Paper 3 provides an illustrative example of why this is not necessarily the case. As illustrated in Figure 14, the existing biases of the research system are in the case of the BRI indirectly built into the indicator; and the indicator may in this sense serve to reinforce existing inequalities at the Danish universities. From the findings of this study we can conclude that as long as evaluation criteria are derived from the work profiles or preferences of dominant groups, standardization and transparency will not further gender equality.

Figure 12. Potential gender biases in the BRI



In the second part of Chapter 7 (i.e. Paper 4), I used bibliometric methods to investigate the link between gender and research performance at Aarhus University. The results of this sub-study have provided new evidence challenging the assumption of a gender gap in scientific impact in favor of male researchers.

The study finds no clear indication of any noteworthy gender gap in neither citation rates, self-citation rates nor in the relative shares of men and women contributing to the top 10% most cited articles. Small, statistically significant differences exist, however, with respect to research collaboration and the relative impact scores of the journals in which men and women publish their papers, which supports the central argument laid forth in Paper 3; i.e. that women will be disadvantaged if and when their performance is measured on the basis of the BRI.

Finally, Paper 5 connects the quantitative patterns identified in the preceding papers (i.e. Paper 3 and four) with qualitative insights on the evaluative status given to scientific performance measures by institutional gatekeepers (i.e. department heads and assessment committees) in the assessments of individual researchers' performance. This final part distils a number of subtle gender biases related to the use of quantitative performance measures in the assessment of individual researchers' scientific merits. Journal rankings and journal impact factor scores, which are widely employed by assessment committees and department heads in the natural and health sciences and parts of the social sciences, are slanted in favour of mainstream research approaches, thus potentially disadvantaging (female) researchers engaged in topics, styles and methodologies, departing from the prevailing notions of "excellent" and "elite" research. Moreover, the use of publication counts, hirsch-index and assessments of productivity trends over time tends to promote an evaluative culture that privileges research output over potential and reward traditional career paths, thus disadvantaging researchers with career breaks (e.g. periods of maternity leave) and increased domestic commitments during certain periods of the academic career, where the scientific performance is expected to peak.

Paper 5, in this sense, confirms the conclusion derived from Paper 3, i.e. that transparent and formalized evaluation and appointment criteria, when taking as default the publication behavior and career patterns of dominant groups, will not necessarily counter gender inequality.

Despite their potential gender effects, quantitative performance measures, as illustrated in the interviews with the department heads, come to function as technologies supporting a managerial narrative of the gender-blind organization. They serve to standardize the criteria for organizational advancement and ensure the transparency and accountability in academic recruitment and selection processes. However, as suggested in Paper 1, a gender blind organization does not necessarily imply equality in academic advancement, since standardized criteria will often entail differential implications for male and female academics.

The department heads adherence to the Mertonian norm of universalism (i.e. the application of pre-established impersonal criteria when judging scientific merits), in this sense, illustrates a paradox. While such an approach is likely to ensure the recruitment of researchers with a strong CV and track record, its lack of gender sensitivity may at the same time prevent many talented – and in the long run potentially better – candidates from proving their worth. The gender-neutral evaluative criteria underpinning the narrative of the gender blind organization, in this sense, in opposition to Merton's basic idea about universalism, end up restricting “scientific careers on grounds other than lack of competence” (Merton, 1942, p. 272).

From a sociological institutionalist perspective, the department heads' adherence to the gender blind narrative also constitutes an illustrative example of how external demands for efficiency and quality spawns conflicting rationalized myths in organizations with highly institutionalized environments. While the promotion of women's advancement and status in the local departments, in view of Aarhus University's gender equality policy, is “assumed to be oriented to collectively defined and often collectively mandated ends” (Meyer & Rowan, 1977, p. 349), it may conflict with other rationalized myths, such as the prevailing ideas about meritocracy, excellence and short-term performance objectives. And due to the relatively modest general concern for issues of gender equality in Denmark, research evaluators may therefore also be inclined to decouple from institutional commitments to further gender equality, when employing scientific performance measures in processes of academic recruitment and selection.

10.1.3. Subtle mechanisms, salient outcomes

Whereas my endeavors in Chapter 7 resulted from an ambition to distil the gendered aspects of the prevailing notions of what a research talent is and how it is measured, my investigations in Chapters eight and nine arose from a basic interest in exploring what talents and abilities – in addition to scientific skills and qualifications – are actually needed to survive in the academic world.

With a particular focus on the preliminary stages of the recruitment process, Chapter 8 covered an underexposed aspect in the existing literature by focusing attention on the unresolved question of how highly formal procedures related to recruitment and selection allow space for mobilizing liminal gender networking practices. As the existing literature on gender in organizations has illustrated, formal and informal network ties often tend to be of crucial importance in such processes, and women candidates are some-

times disadvantaged by insufficient social capital and implicit assumptions made by managers about gender characteristics.

On the basis of recruitment statistics and qualitative interviews with department heads, Chapter 8 highlighted a discrepancy between the institutionalized belief among gate-keepers in the rationalized myth of the meritocracy (i.e. that all organizational actors should have the same opportunities to display their merits and rise in the ranks) and the de-facto functioning of the recruitment procedures. Despite increased emphasis on organizational transparency, 40% of the vacancies for senior research positions had merely one applicant, and nearly one fifth of the final candidates were appointed under closed procedures with clear implications for gender stratification.

The issue of informal network ties can be viewed as particularly crucial in this regard, since academic recruitment under closed procedures, as shown in the interviews, largely depends on one's reputation and visibility to the relevant gatekeepers (i.e. the department heads). In other words, appointment success under such procedures is not only a question of what you know but also who you know (Sadl, 2009).

More specifically, the interviews with the department heads revealed a number of factors and concerns adding to our understanding of how highly formal academic recruitment procedures open managerial space for mobilizing masculinities in informal network ties, through decoupling processes. In a sociological institutionalist perspective, the main theoretical point derived from this chapter concerns the inconsistencies in the managerial ethos of transparency and efficiency. While university managers today are expected to signal legitimacy by adhering to both of these "rationalized myths", this may in practice be difficult, since transparency and formalization are sometimes at odds with efficiency-driven rationales for action. Gate-keepers may therefore, decouple their activities from the university's formal procedures in order to ensure efficiency, leaving extra space for potentially gender-biased practices of informal networking.

While Chapter 8, in this sense, lends support to the argument that formalized bureaucracy may operate to advance gender equality, it also illustrates some of the difficulties that academic organizations may face in ensuring organizational commitment to formal rules in institutional environments characterized by inconsistent rationalized myths.

In addition to the gendered recruitment and selection patterns presented above, Chapter 8 also revealed that a considerable number of the local female candidates for associate professorships (8-16%, depending on year) leave Aarhus University without even applying for the vacant senior research positions. This finding has guided the framing of the last empirical chapter.

10.1.4. Self-selection and adaptive preferences

On the basis of a multi-level pluralist methodological framework, combining survey data and qualitative interviews, Chapter 9 set out to disentangle the complex interplay between structural constraints and personal strivings circumscribing early-career women's career choices at Aarhus University. Drawing on the capabilities approach and the concept of adaptive decision-making developed by Nussbaum and Sen (see, e.g., Sen, 1993 or Nussbaum, 2000), the chapter has provided a number of illuminating empirical examples illustrating how (and why) the ability of women to function as academics is not always fully redeemed under the current working conditions at the university.

Early-career female researchers face a number of marginal kicks, which keep them from fully unfolding their capabilities and doing what they have reason to value in their work-life. These marginal kicks include gender practices of pre-selection in recruitment and promotion, managerial perceptions of women's "otherness" and their incompatibility with the prevailing cultures and characteristics of the local research environments. Moreover, women face challenges in terms precarity, unclear career paths, blurry performance thresholds, the irreconcilability of lives inside and outside the university, lower job satisfaction, and weaker professional network ties. As observed by Valian (1999a), such drawbacks or "mule holes", may add up over time and become cumulative disadvantages or "mountains" influencing the career decisions of early career female researchers. As opposed to much of the existing debate, which tends to represent the opt out phenomenon in academia as either the outcome of deliberate choices made by women academics, or as manifestations of discriminatory practices forcing women to leave the academy; this study suggests that the "leaver" phenomenon is most fruitfully captured as an effect of "constrained career choices" or acts of "adaptive decision-making" formed and influenced by the particular (contingent) institutional conditions under which these choices and decisions are made.

Finally, Chapter 9 has provided informative insights into the department heads' views and interpretations of the persistent gender inequalities at department level. It has illustrated how women's attributes and qualities are often symbolically separated from the main features of the research environments, representing them as soft actors in a hard world of science epitomized by pre-given and indispensable organizational requisites, such as high levels of competitiveness, individualism and limitless work-time norms. Hence, the interpretation of gender inequality as a problem related to the women rather than the organization, not only appears to permeate the poli-

cy discourses at Aarhus University, but also manifests itself in the symbolic boundary work (Lamont, 2001) of some of its representatives.

With reference to the above mentioned question of what talents and abilities – in addition to scientific skills and qualifications – are actually needed of women to survive in the academic world, one could recapitulate the findings of Chapter 8 and nine in terms of three P's, i.e. persistence, perseverance and personal network ties. However, in view of the disproportionate obstacles that many women will encounter, and the comprehensive sacrifices they will have to make, such talents do not necessarily guarantee success in the current academic landscape.

10.1.5. Reflections on the critical realist framework and perspectives for future research

The critical realist framework has provided a useful starting point for an integrated, holistic approach with the capacity for operating across multiple levels of analysis and addressing the problem under investigation from different viewpoints and angles. By dividing the study into a number of analytically distinct explanatory components, I have attempted to illustrate the complex number of mutually constitutive generative mechanisms and factors contributing to produce and reproduce gender stratifications in university settings. What the integrated, holistic approach gains in scope and perspective, it may, however, lose in detail.

A fundamental premise of the critical realist approach lies in the idea that mechanisms “belong in separate hierarchically arranged strata of reality, where each stratum is composed of mechanisms from underlying strata” (Danermark et al. 2002, p. 70). There are, in other words, always mechanisms within other strata that lay down the conditions for the properties and powers under investigation. This makes social research a transitive process of continually revising and transforming our understandings and theories into a deeper knowledge of reality (Ibid., 2002). In consequence, while the main strength of this dissertation lies in its attempt to account for the cumulative disadvantages facing women in academia on the basis of a multi-level approach, it is obvious that the findings presented in the four empirical chapters at the same time, leave ample room for further investigations of each of the explanatory components addressed.

The first prevalent question for a future study relates to the role played by bottom-up networks in promoting women's representation, status and influence in academic organizations. As pointed out by Kantola & Ikävalko (2013), organizational activities on gender mainstreaming and gender

equality planning are often “based on bureaucratic modes of governance that in practice close off more participatory forms of policy making”. Such approaches, in other words, risk losing sight of the decisive role played by bottom-up movements in countering inequalities. Against this background, further comparative investigations of the Scandinavian universities’ different ways of combining bottom-up and top-down based approaches to gender equality seem fruitful, and this perspective may also contribute to explain some of the national and institutional variations identified in this dissertation.

Academic recruitment and selection practices, as illustrated, also tend to be playing an important part in explaining the persistent inequalities in university settings. However, since such practices may vary considerably across national and institutional contexts, a more broad-ranging European perspective on academic recruitment and selection, and the gendered practices involved, could provide informative insights into the varying nature of the gender inequality issue across countries and institutions.

Moreover, an in-depth ethnographic study illuminating each of the procedural steps in a selected number of academic recruitment processes – from the framing of the position to the appointment of the final candidate – could contribute to further elaborate and specify some of the subtle gender practices described.

The relevance of further scrutinizing what Leach et al. (2010, p. 100) describe as “the ensemble of processes through which knowledges are gathered and produced in order to inform decision-making and wider institutional commitments”, also seems pertinent. As is the case with recruitment and selection processes, the allocation of research funding in many academic disciplines tend to rely on a fixed and composite number of metrics of research excellence (e.g. journal impact scores, citation-rates, the h-index and publication trends over time). Such metrics may, if used instrumentally, be slanted in favour of mainstream research approaches and traditional career paths, with gendered implications to follow.

Academic working cultures also appear to play an important part in explaining why some research departments and fields are better at attracting, retaining and promoting female researchers than others. An in-depth ethnographic study focusing on the day to day interactions in a number of strategically selected research environments, with both high and low female representation and work-life satisfaction, could provide much needed information on why more female than male researchers end up leaving the academy. Moreover, the findings of such a study could help university managers and gender equality policy-makers to move beyond a mere focus on female representation in organizational gender equality activities. As Louise

Morley notes, the issue of female representation, while often considered a happiness formula “symbolising the inclusion of marginalised groups (...), is not always transformative and can result in new constituencies being expected to assimilate and conform to normative practices” (Morley, 2013, p. 379). Rosi Braidotti (1994, p. 120) similarly asserts that we cannot simply insert new wine in old bottles since the promotion of equality implies more profound transformations “of the very structures and images of thought, not just the propositional content of the thoughts” (cf. Morley, 2013).

Finally, the focus on how issues of gender intersect with other social categories in perpetuating inequalities in academia constitutes another underexposed area in the literature which, as mentioned by Van den Brink (2010, 2010, p. 236), “could add an extra layer to our understanding of the complex processes by which changes in social inequality occur”. In a Danish context, for instance, we know very little about ethnic minorities’ trajectories through the tertiary educational system, and the barriers they experience, when pursuing an academic career.

10.1.6. Policy implications

As I finish this chapter, a new Taskforce for Gender Equality in Research, appointed by the Danish Minister for Higher Education and Science, is working on a new set of recommendations on how to promote the scientific advancement of female academics in the Danish university system. Such a policy response, as discussed in this thesis, is likely to result in some progress. However, in order to ensure that the gender equality work of the Danish universities does not merely confine to responses to meet temporary policy requirements, there will be a need for clearer structures of responsibility facilitating continuous institutional commitment. Moreover, it is important that policy-makers and university leaders recognize that affirmative action programmes and other types of “fixing the women” strategies, while clearly helping certain women to “rise in the ranks”, leave in place the structural and cultural features of academia that made these strategies necessary in the first place. To create long-lasting gender equality change and make the revolving doors channeling freshmen students into (and out of) a future research career less gendered in their stratifying outcomes, more profound and transformative policy ambitions are required. As Harvard Professor Howard Georgi (2000) once noted on the back page of the American Physical Society (2000), “just because we have a system that produces good scientists, does not mean that the system is not eliminating many others who could be equally good”.

Summary

According to the latest European figures on gender balance in higher education, female students outnumber their male fellows by almost 60 percent to 40 percent, and, on average, achieve better grades as well. The representation of female researchers in the upper ranks of the academy is, however, still scarce. Today, only 20 percent of the European full professors and 19 percent of the Danish full professors are women. This raises fundamental questions about the universities' ability and willingness to attract and retain the increasing pool of female candidates for a research career.

In 1968, Robert K. Merton coined the term "cumulative advantage" to describe how eminent scientists that gain small advantages early in their career are able to transform these advantages into disproportionately greater scientific credit and prominence in the long run. Jonathan Cole & Burton Singer, in 1991, coined the reverse principle of the "cumulative disadvantage" to explain how issues of gender affect academic promotion and success.

This dissertation is about the cumulative disadvantages slowing down women academics' advancement and keeping them from gaining the same organisational status as their male colleagues. It is also about understanding and explaining how gender relations are reconstituted in a rapidly changing academic context characterized by increasing demands for international competitiveness, innovation, flexibility and accountability.

The thesis employs a case study approach, adopting a critical realist meta-theoretical framework and a pluralist methodology to investigate the new and persistent gender equality challenges at Aarhus University in Denmark. The overall research objective has been divided into four analytically distinct potential explanatory components, each drawing attention to a number of social mechanisms, which under certain circumstances, can be expected to be instrumental to the persistent underrepresentation of female senior researchers at the university.

The first of the dissertation's four empirical parts sets out to "unpack" and contextualize the strategies for governing and promoting issues of gender equality at Aarhus University, by investigating these in a larger comparative policy framework of six Scandinavian universities (two Danish, two Swedish and two Norwegian). On the basis of a comprehensive comparative documents analysis, it sketches out the contours of a Danish academic system, where the promotion of gender equality appears to be of relatively low priority, and where universities and policy-making bodies primarily rely on a lib-

eral approach to the promotion of gender inequality, i.e. as a problem related to the women, rather than the organization.

In the second part of the thesis, I draw attention to the gendered implications of the expanding use of individual performance indicators in academia. On the basis of bibliometric analyzes, qualitative interviews with department heads and a content analysis of appointment reports, I distil a number of subtle gender biases related to the use of quantitative performance metrics, illustrating that transparent and formalized evaluation and appointment criteria, when taking as default the publication behavior and career patterns of dominant groups, will not necessarily counter gender inequality.

The third part of the thesis covers an underexposed aspect in the existing literature by focusing attention on the unresolved question of how highly formal procedures related to recruitment and selection, allow space for mobilizing liminal gender networking practices. On the basis of recruitment statistics and qualitative interviews with department heads, it highlights a discrepancy between the institutionalized belief among gate-keepers in the meritocracy and the de-facto functioning of the recruitment procedures. Despite increased emphasis on organizational transparency, 40 percent of the vacancies for senior research positions at Aarhus University have merely one applicant, and nearly one fifth of the appointees are recruited under closed procedures with clear implications for gender stratification.

Organizational data reveal that a disproportionate share of the early-career female researchers leave Aarhus University without applying for tenure, and the fourth and last part of the thesis therefor sets out to disentangle the complex interplay between structural impediments and personal strivings forming these researchers' career choices. On the basis of a multilevel framework combining survey data and qualitative interviews, this sub-study identifies a number of "marginal kicks" keeping female researchers from fully unfolding their capabilities and doing what they have reason to value in their work-life. As opposed to much of the existing debate on gender inequality in academia, which tends to represent the "opt out" phenomenon among young female researchers as either the outcome of deliberate choices informed by other life priorities, or as manifestations of discriminatory practices forcing women to leave the academy; this study suggests that the issue of "leavers" is most fruitfully captured as an effect of "constrained career choices" or acts of "adaptive decision-making" formed and influenced by the particular (contingent) institutional conditions, under which these choices and decisions are made.

Dansk resume

Ifølge de nyeste europæiske opgørelser udgør kvinder i dag 60 procent af de indskrevne studerende ved de europæiske højere uddannelsesinstitutioner. Ydermere opnår de gennemsnitligt bedre karaktersnit end deres mandlige medstuderende. Den øgede tilstedeværelse af kvindelige studerende har dog langt fra afledt proportionale stigninger blandt ansatte på lektor- og professorniveau. Blot 20 procent af de europæiske professorer og 19 procent af de danske professorer er i dag kvinder, hvilket rejser spørgsmål omkring universiteternes og de øvrige forskningsinstitutioners evne og vilje til at tiltrække og sikre fastholdelsen af en voksende andel kvindelige forskerspirer.

Robert K. Merton introducerede i 1968 princippet om de "kumulative fordele" med henblik på at beskrive hvorledes forskere, med et marginalt forspring tidligt i karrieren, over tid genererer uforholdsmæssigt større grader af anerkendelse og ressourcer end deres øvrige fagfæller. I et forsøg på at begribe og forklare hvorledes spørgsmålet om køn påvirker akademisk advancement og succes, udviklede de amerikanske sociologer Jonathan Cole og Burton Singer, i 1991, et tilsvarende omvendt princip under termen "kumulative ulemper".

Denne afhandling belyser en række af de kumulative ulemper, som afholder kvindelige forskere indenfor dansk academia fra at avancere til de øverste akademiske stillingsniveauer i et tempo og omfang tilsvarende deres mandlige kollegers. Samtidigt er formålet at opnå en mere indgående forståelse af hvorledes kønsrelaterede spørgsmål ændrer form i et hastigt forandrende akademisk landskab, præget af stigende krav om international konkurrencedygtighed, innovationsevne, fleksibilitet og "accountability".

Afhandlingen anlægger et kritisk realistisk perspektiv og trækker på både kvalitative og kvantitative metoder i belysningen af nye såvel som vedvarende ligestillingsudfordringer på Aarhus Universitet. Mere specifikt søger afhandlingen på baggrund af fire empiriske kapitler, som hver kredser om et særligt aspekt af problemstillingen, at udforske en række sociale mekanismer, som under givne omstændigheder kan forventes at bidrage til den ovenfor nævnte træghed i kvinders advancement til de øverste akademiske stillingsniveauer.

Det første empiriske kapitel søger med afsæt i en komparativ policyanalyse af seks skandinaviske universiteters (og tre landes) arbejde med ligestillingsfremmende aktiviteter og initiativer at uddestillere de særlige karakteristika for Aarhus Universitets tilgange til spørgsmålet. Kapitlet tegner et billede af dansk academia, hvor det ligestillingsfremmende arbejde forekommer re-

lativt lavt prioriteret og hovedsageligt beror på liberale idéer om ligestillingen som et problem, der relaterer sig til kvinderne snarere end de akademiske institutioner.

På baggrund af bibliometriske analyser, kvalitative interviews med institutledere og analyser af bedømmelsesrapporter, belyses og diskuteres i afhandlingens andet empiriske kapitel en række kønnede følgevirkninger af de måder hvorpå kvantitative performancemål appliceres og fortolkes i evalueringen af individuelle forskeres videnskabelige meritter på Aarhus Universitet. Kapitlet bidrager herudover med ny viden omkring de aktuelle kønsforskelle i danske akademikeres publiceringsaktiviteter.

Kapitel 3 adresserer hvorledes kønsrelaterede spørgsmål influerer akademiske rekrutterings- og selektionsprocesser på Aarhus Universitet. På baggrund af ti års rekrutteringsstatistik og interviews med institutledere, påviser denne del af afhandlingen en klar diskrepans mellem institutledernes forestillinger om, og tiltro til, meritokratiet som akademias naturlige objektive selektionsform, og de faktiske rekrutteringsprocedurer og -praksisser på universitetet. Til trods for et øget organisatorisk fokus på at skabe transparens i de akademiske ansættelsesprocesser, har 40 procent af stillingerne opslået på lektor- og professorniveau blot én ansøger, og omtrent hver femte ansættelse finder steder under lukkede procedurer med utilsigtede ligestillingskonsekvenser til følge.

Rekrutteringsstatistikken påviser samtidig, at en uforholdsmæssig stor andel af Aarhus Universitets yngre kvindelige forskere tøver med at søge akademiske stillinger på lektorniveau. Afhandlingens fjerde kapitel søger med afsæt i denne viden at udrede de komplekse samspil mellem strukturelle vilkår og subjektive ønsker og ambitioner, som udgør rammen for de yngre kvindelige forskeres karrierevalg og færden i academia. På baggrund af omfattende surveydata og kvalitative interviews identificeres en række hindringer (eller kumulative ulemper), som på forskellig vis begrænser og afholder (nogle) kvindelige forskere fra fuldt ud at udfolde deres evner og formåen som akademikere under universitetets nuværende strukturelle og kulturelle arbejds- og karrierebetingelser. I modsætning til megen af den eksisterende ligestillingsdebat, som ofte fremstiller netop dette aspekt som et anliggende relateret til kvindernes egenrådige og velovervejede karrierevalg afledt af andre livsprioriteter (f.eks. familielivet), eller som et udtryk for kønsdiskriminerende praksisser der "skubber" kvinderne ud af academia imod deres vilje, foreslår denne del af afhandlingen, at tendensen mere frugtbart kan anskues som et udtryk for "indsnævrede karrierevalg" eller "adaptive præferencer" afledt af de givne institutionelle betingelser, under hvilke kvinderne træffer deres beslutninger.

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Appendix 1.

Written outline of discourse and text analysis presented in Paper 1

Gender, discourse and regimes of justification

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This working paper contains a written outline of the empirical analysis presented in the article '*Justifications of Gender Equality in Academia: Comparing Gender Equality Policies of Six Scandinavian Universities*'. As mentioned in the article, the analysis is based upon a data set of selected gender equality strategies, policies and other relevant documents of six Scandinavian universities. More specifically, I have investigated the documents of Aarhus University in a Scandinavian context including five other universities as a comparative analytical frame of reference.¹² These Universities are: The University of Bergen, the University of Copenhagen, Lund University, the University of Oslo and the University of Uppsala. The selected sample of texts has been gathered from the University websites in the period July-August 2012. Before presenting the analysis, I briefly touch upon a number of the central analytical concepts employed in the analysis.

Intertextuality, voice and genre

Fairclough draws a distinction between the 'external' and the 'internal' relations of a text. *Intertextuality* refers to the external level and focuses on '*the relation between a text and what has been written elsewhere*' (Fairclough 2003: 37). In the following analysis, I will draw attention to the intertextual relations combining the selected body of documents with other texts. Another

¹ This study is part of a larger case study drawing attention to the structural challenges characterising female researchers' career possibilities at Aarhus University.

² References for the complete corpus of organizational documents can be found in the bottom of the document.

important step will be to clarify the *voice of the author*. The question of *genre* also plays an important role when it comes to the question of how the text is contextualised and interpreted, and in this sense, the genre analysis serves as a useful supplement to the textual discourse analysis. According to Fairclough genres can be described as 'different ways of (inter)acting discursively' and most often, texts involve a mix of different genres (Fairclough 2003 26: 66). In this paper, I will connect the analysis of genres to the common and distinctive features characterising the texts.

Semantic and grammatical relations

On the semantic level, the analysis will focus on diathesis (active and passive form), nominalization (grammatical metaphor) modality and aspects of speech function. I will shortly introduce the main characteristics and applications of these analytical concepts, when they are put in to use in the text.

Articulations and justifications of gender equality

The following analysis reveals some noticeable disparities between the Scandinavian universities. I will start out by outlining aspects of genre, voice of author and intertextuality and move on to analyse the semantic and grammatical relations in order to answer the research question of how activities and initiatives related to gender equality are articulated and justified in the selected organisational texts.

Genre and voice of author

According to Fairclough, genre plays an important role in the governance and structuring of institutions in contemporary society. *Hybridity or genre mixing* is a common characteristic of most texts, and organisational *policy statements*³ can be considered the quintessence of *hybridized* genres. These statements are embedded in intertextual chains of genres which contribute to structure and transform language in particular ways (Fairclough 2003: 31-36, 66). In this sense, policy statements constitute a unique genre, which draws on other, more or less, established genres (Tiili 2007). I will limit the following analysis of genre, voice of author and intertextuality to the empirical framework of the six university policy statements on gender equality, leaving out related texts such as personnel policies and strategy plans.

³ When using the term *policy statement*, I specifically refer to the six gender equality action plans.

Organisational communication and CSR

The overriding communicative purpose of the selected policy statements can be divided into two separate objectives.⁴ A) To declare the organisations' commitment to the stipulations of the underlying national gender equality legislations, and B) to outline the research institutions' prioritizations of and motives for working with issues of gender equality. In this sense, the policy statements fall within the genre of *organisational communication*. This genre is characterised by the communicative goal of organisational enactment (Taylor & Cooren 1997; Tlili 2007: 287). However, the public availability of these statements through university websites exceeds the purpose of internal organisational communication and points to the existence of another genre – the genre of *corporate social responsibility*. All of the policy statements more or less contribute to promote a certain image of the organisation to the outside world. They keep gender issues prominent and communicate good will and company engagement to the challenges of society (Bhatia 2012).

Voice of Author

An important step in the critical discourse analysis is to clarify the voice of the author.⁵ As outlined below, this question has some implications with respect to the implementation and translation of the documents into action. In the following section, I will outline different aspects concerning this matter.

Table A.1.1.

Ten ideas to promote gender equality at Aarhus University

Aarhus University has appointed a task force to generate ideas for gender equality initiatives at the university and create a basis for equality action plans in the main academic areas. The aim is to create better and more attractive research environments – for both men and women (Aarhus University 2009: 1).

The sender of the Aarhus statement is a *task force* appointed by the university. By making the *task force* responsible for the development of the policy statement, it is reasonable to contend that the role and responsibility of the

⁴ According to genre analyst John M. Swales, a genre can be defined as '*a recognizable communicative event characterized by a set of communicative purpose(s)*' (Swales 1990).

⁵ Following Fairclough (2003: 12), the author is here understood as '*whoever can be seen as having put the words together, and as taking on commitments to truth, necessity and values by virtue of choices in wording*'.

university management is downplayed in the text. In this sense, the Aarhus statement constitutes a special case. The voice of the management is more clearly explicated in the rest of the statements, which either state the university management as the direct sender of the text or the organisational instance adopting the directives outlined in the text.⁶

In the example above, 'Aarhus University' functions as a *metonym* for the university management, which serves to hide its role as an active voice of the text. This way of speaking through the voice of the university is a common characteristic more or less evident in all of the policy statements. By using this rhetorical gesture, the enunciating subject of the text becomes impersonalised only to be reinstated as a *macro voice* representing the university stakeholders as a unified whole. In other terms, the different organisational wills and interests present in the texts are hereby translated into one authorized voice. According to Tlili (2007), this rhetorical gesture is borrowed from the *legislative genre*. It contributes to install an authorized *university voice* with an all-encompassing rationality and consciousness - a voice that transgresses the competing views and interests present in the organisation (Tlili 2007: 287-288).

Let us now return to the special case of Aarhus University. On the Website of Aarhus University, the policy statement on gender equality is presented as an *inspirational catalogue* developed and written by the appointed *task-force*. In this sense, the statement differs from the rest of the selected texts, which all serve the purpose of communicating a set of strategic actions adopted by the university management. However, this also seems to be the underlying purpose of the Aarhus statement. On page four of the document, a reference is made to an agreement made between the rectorate and the deans of the university. This agreement obligates the faculties to define targets for gender balance and develop local action plans including specified declarations of intent, descriptions of parties involved, costs incurred and persons responsible.

This illustrates a certain kind of dilemma. It seems that actions on gender equality at the decentralised levels of the organisation will not be taken, unless they are imposed from above. However the University management is dependent on active participation and involvement of employees at faculty

⁶ An exception is the policy statement of the University of Oslo. This text also speaks in the voice of the University without making any comments on the responsibility of the University management. However, on the University website it is stated that this document refers directly to the University's strategy plan adopted by the University Board.

level in order to attain the target of enhancing female researchers' career possibilities. Following Michel Foucault's ideas on the concept of governmentality, this way of managing organisational processes of gender equality can be described as '*conduct of conduct*' (Foucault 1982). According to Foucault, the practices of government in modern society are characterised by '*a mode of action which does not act directly and immediately on others. Instead, it acts upon their actions: an action upon an action, on existing actions or on those which may arise in the present or the future*' (Foucault 1982: 789). In regard to the policy statement of Aarhus University this means that the main areas (faculties) are set free to define and develop their own initiatives and targets on gender equality, as long as these initiatives are in accordance with the institutional obligations outlined above. Yet, the ten ideas outlined in the policy statement of the taskforce will contribute to inspire and shape the actual initiatives implemented at the decentralised levels of the organisation, by structuring the discursive positions available to the responsible actors.

As I shall return to in the forthcoming paper '*Scandinavian approaches to gender equality in academia: A comparative study*', this complementary interplay between decisions and actions taken at the central levels of the organisation and initiatives developed and implemented at faculty and department level is a recurrent characteristic of all of the universities.

The Gender equality action plan of the University of Uppsala exemplifies a stronger and more direct policy statement including standing assignments, targets and measures.

Table A.1.2.

Gender equality work at Uppsala University

The point of departure for this plan is the Discrimination Act (SFS 2008:567) and the University's Equal Opportunities Programme, and it addresses equality between women and men. The plan was adopted by the Vice Chancellor of the University and pertains to 2011-2012. The plan states standing assignments, targets, and measures, and it assigns responsibilities. The plan also designates how work is to be followed up (University of Uppsala 2011).

In this text, the voice and role of the university management is explicated in clear terms and the assigned responsibilities of the different organisational actors stand out quite distinctly like in the genre of a legal document. As mentioned in the excerpt above, the University of Uppsala have also developed an *Equal Opportunities Programme*. This document outlines the organisational motives and visions concerning aspects of diversity and equality in a broader perspective. In this sense, Uppsala differs from the rest of the Uni-

versities by separating the substantiating visions and objectives from the actual action plan on gender equality.

The journalistic interview and the memorandum

Besides the genres outlined above, I have identified two main genres influencing the structure and meaning of the selected texts. One of these constitutes a specific characteristic of the Aarhus statement, while the other inhabits the Copenhagen statement.

As already mentioned, the Aarhus statement varies from the rest of the texts with respect to matters of *voice of author* and *genre*. By representing the text in the guise of an *inspirational catalogue*, the sender is capable of drawing on genres not usually found in policy statements. On page six and seven in the statement a journalistic interview with a prominent Danish professor and director of a Centre of Excellence is featured (excerpt below).

Table A.1.3.

Active Research Management Promotes Gender Equality

One of the ways to get more women established in senior research positions is via the managers, according to the professor (xxxx). It is primarily the responsibility of research managers and heads of department to actively identify and support talented people of both sexes. This would especially benefit female research talents, who often need more management support than their male colleagues to become motivated to pursue a career in the research world (Aarhus University 2009: 6-7).

This *interview* supports and strengthens the communicative purpose of the 'inspirational catalogue' by offering concrete recommendations on the arduous question of how to approach and handle the problem of gender equality at the university. Thus, the interview is instrumental in inspiring and shaping the actual initiatives implemented in the organisation. In line with the thoughts of Fairclough, one could say that the linking of different genres (the *policy statement* and the *journalistic interview*) in this case facilitates an enhanced capacity for 'action at a distance' (Fairclough 2003: 31). In this part of the text, the voice of the university management as well as the task-force is downplayed in favour of another voice - the voice of an internationally acknowledged researcher. As I will return to later, the voice of the professor not only helps to validate the academic relevance of promoting gender equality at Aarhus University. It also articulates and justifies a certain way of approaching issues of this concern.

Unlike the rest of the policy statements, the Copenhagen text (see below) explicitly takes on the genre of an *organisational memorandum*. In short, a memorandum is a written record providing concise and comprehen-

sive information as well as convincing arguments with regards to a certain organisational project activity or initiative (Duke University 2008). The memorandum is developed in an ongoing conversation between organisational actors involved in a certain project proposal or activity. In other terms, the communicative purpose of the memorandum is to document *intra-organisational communication* (Yates 1989). The literature draws a distinction between internal and external memorandums. As stated earlier, the Copenhagen statement is available to the public via the university website and therefore falls within the subgenre of *the external memorandum*. As illustrated below, the text includes genre characteristics typically found in memorandums, such as a 'Memo' letterhead, a *standard prefix* setting the topic of the text, and an introduction describing the different steps of the intra-organisational communication process.

Table A.1.4.

MEMO

25 FEBRUARY 2008

Re: Diversity at the University – More Women in Research and Management

Introduction

At the meeting on 25 september 2007, the University Board commissioned the Rectorate to prepare an action plan with a view to increasing the number of women researchers at the University. After the Board's evaluation, the plan will be incorporated into the Strategic Action Plan to be presented to the Board in September 2008. The plan will also figure on the 2009 Budget (the Board's Strategic Pool).

In order to convince internal as well as external stakeholders of the necessity and relevance of enhancing female researchers' career possibilities, the Copenhagen statement includes a number of national and international policy- and research examples serving to contextualise and explicate the topicality and importance of the problem (University of Copenhagen 2008: 1-3). This way of contextualising and justifying organisational activities on issues of gender equality is characterised by a certain sense of *prudence* also present in the Aarhus statement. As I shall return to, these texts approach the problem of gender equality in more careful and precautionary ways, than what is the case of the Swedish and Norwegian action plans.

Intertextuality

According to Fairclough, the analysis of intertextuality focuses on '*how texts draw upon, incorporate, recontextualise and dialogue with other texts*' (Fair-

clough 2003: 17). In this understanding, intertextuality does not merely take the form of direct quotations. Elements of external texts may as well be incorporated without attribution. For instance, the headline of the Danish edition of the Aarhus statement⁷ is identical with the headline of the government's policy statement on gender equality in academia⁸ valid for the period 2005-2012. No direct reference is made between the statements, albeit the same type of assumptions regarding gender equality permeate the texts. This example helps to illustrate the difficulties in identifying non-attributed intertextual voices in policy statements. In this part of the analysis, I will mainly focus on attributed intertextuality.

Legislative documents and the voice of the government

As stated earlier, one of the overriding communicative purposes of the selected policy statements is to declare organisational commitment to the stipulations of the national gender equality legislations. Hence, it can be reasonably contended that the voices of these legislative documents, in more or less obvious ways, permeate all of the statements. However, only three of the texts refer directly to the national legislations. This is the case of Bergen, Lund and Uppsala, which all state national acts on gender equality/discrimination as starting points for developing gender equality action plans and implementing systematic initiatives and measures. In these texts, the direct attributions to the national legislations contribute to justify and legitimate the established organisational activities on gender equality.

The Aarhus statement incorporates *the authoritative voice of the government* in a less explicit way by reusing the headline of the national policy statement. The text also draws on the same type of motives for working with gender issues as well as initiatives for solving the problem, and it is reasonable to conclude that the national statement is in fact developed for the communicative purpose of being recontextualised into the gender equality action plans of the public academic institutions.⁹ Similarly to the Aarhus statement this text is presented as a catalogue of recommendations developed by a national *taskforce* appointed by the Ministry of Gender Equality.

The Copenhagen statement exemplifies another way of incorporating the voice of the government into the text. As already mentioned, this text includes a number of references to national and international policy and re-

⁷ 'Alle talenter i spil' (Aarhus University 2009b)

⁸ 'Alle talenter i spil' (The Danish Ministry of Science & The Danish Ministry of Gender Equality 2005)

⁹ I shall return to this.

search examples, which serve to explicate the topicality and importance of enhancing female researchers' career opportunities in academia. Much like the Aarhus statement, the Copenhagen statement reuses the headline of the governmental policy paper. In this case the subtitle of the document - 'More women in science.'¹⁰ However, it also connects to the text in a more explicit way.

Table A.1.5.

In an age when competition for research talent is intensified by factors such as internationalisation, the ambition of attracting and retaining more women researchers has become a key focus area – for governments, universities and university alliances. For example, in 2005, the Danish government established a think tank to consider the issue², while the US Ivy League universities joined forces in 2001 to bring this problem into focus.

Footnote: Alle talenter i spil (All talents in Play), Ministry of Science, Technology and Innovation and Ministry of Gender Equality, 2005.

As illustrated above, the Copenhagen text refers to the national policy statement, as well as activities taken by US Ivy League universities, in order to contextualise the problem of gender equality and support the relevance and necessity of retaining more female researchers. This way of substantiating the organisational activities on gender equality is a special feature of the Copenhagen statement, which also includes references to initiatives taken by the International Alliance of Research Universities (IARU) as well as a report on diversity published by the Danish agency of Science, Technology and Innovation. As I shall return to, these references not only serve to explicate the topicality of gender issues in academia. They also reflect a certain way of articulating and justifying organisational actions concerning this matter.

University strategy plans

While only some of the policy statements refer directly to the main university strategy plans, the main assumptions and objectives of these documents are easily recognized in all of the texts. Attributions to the main strategies mainly take on two distinct forms. One form serves to connect the policy statements to the overriding organisational stipulations regarding gender equality. This is illustrated in the example below.

¹⁰ The Copenhagen statement is entitled 'Diversity at the University – More Women in Research and Management'. However, the Danish editions of the documents both use the phrase 'Flere kvinder i forskning'.

Table A.1.6.

The main gender policy is formulated in the University's strategy plan 'Strategy 2020' as follows: 'An internationally leading university must conduct an active policy of equality between women and men and a recruiting policy that results in diversity and that ensures equal rights.' As part of the work of realizing the intentions in the University's new strategy plan, a dedicated action plan has been written for gender equality in 2010–2012 (University of Oslo 2010: 1).

This way of anchoring the policy statements on gender equality in the main strategy plans is used by Oslo, Lund, Uppsala¹¹, and Bergen. It defines a clear hierarchical relation between the documents, and serves to substantiate and specify the organisational will with respect to issues of gender and diversity.

B) Another way of drawing on the main university strategies is to incorporate the general visions and targets of these documents. This form of attribution is exemplified in the excerpt below.

Table A.1.7.

The University's vision is to be an internationally recognized research institution. An important prerequisite for achieving this objective is international and diverse research environments with a good gender balance and age distribution (University of Bergen 2011: 3)

As I shall outline in the following pages, the target of becoming a highly esteemed internationally leading university is present in all of the statements, with Aarhus University as the only exception. Yet, it can be reasonable contended that this overall objective is also reflected in the institutional arguments for engaging in work on gender issues at Aarhus University, although in a less explicit way. I will return to this below.

Assumptions and presuppositions

Besides the different aspects of voice and attribution outlined above, Fairclough links the analysis of intertextuality to the use of 'assumptions'. Inspired by linguistic pragmatics, he points to the relevance of investigating what is necessarily presupposed in texts.

Texts inevitably make assumptions. What is 'said' in a text is 'said' against the background of what is unsaid, but taken as given. As with intertextuality, assumptions connect one text to other texts, to the 'world texts' as one might put it (...). The difference between assumptions and intertextuality is that the former are not generally attributed or attributable to specific texts. It is a matter

¹¹ The Equal Opportunities Programme (University of Uppsala 2010).

rather of a relation between this text and what has been written or thought elsewhere, with the 'elsewhere' left vague' (Fairclough 2003: 40).

According to discourse analyst Ruth Wodak (2007), assumptions or presuppositions may often be incorporated into texts for the purpose of triggering audience consent to a particular statement or view of the world. In other terms, presuppositions contribute to excite particular interpretations of a text by representing ideologically loaded assumptions as if they were widely accepted truths (Saarinen 2008: 37). In the gender equality action plans analysed in this study, a lot is taken for granted. While notions of globalization and international competition are existentially presupposed in all of the texts, the more justice-oriented assumptions on matters of equal rights and anti-discrimination mainly recur in the Norwegian and Swedish policy statements. I will extend and clarify this perspective in the following part of the analysis by outlining the most significant disparities between the Scandinavian universities with regards to institutional argumentations for working with issues of gender equality.

Gender Equality – articulations and motives

According to Fairclough & Wodak (2010), introductory paragraphs in policy statements often express the main ideas of a discourse. This is the part of the text, where authors either state their position or approach to a given problem. The following analysis, which combines Boltanski & Thévenot's analytical model of the orders of worth with analytical approaches from CDA, will therefore mainly focus on the opening sections of the selected gender equality policies and action plans. However, relevant formulations in related texts such as organisational vision statements, strategy plans, staff policies, and research policies will also be included, as these formulations contribute to reveal the different rationalities and discourses permeating the universities' work on gender equality.

Aarhus University

As mentioned earlier, the policy statement of Aarhus University constitutes a special case in regard to genre. It is presented as an 'inspirational catalogue' developed and written by an appointed *taskforce* and the text assigns no direct responsibility to the university management. In the main title of the document - 'Drawing on all talents' - the verb (draw) is represented as a process without a subject, and in this sense, the acting agent of the text is elided. In other terms, it is not clear who is *drawing*. In light of B&T's model of the or-

ders of worth, the formulation 'Drawing on all talents' can be claimed to appeal to the industrial *cit *, as it points to the objective of enhancing quality and optimizing productivity. However, the proclaimed ambition of 'drawing on all talents' also connects to the universities' general visions of belonging to the elite of universities and contributing to the development of national and global welfare (Aarhus 2008: 4), which points to the civic *cit * and the *cit * of renown.

The last sentence of the first paragraph in Table A.1.1 conveys the only direct motive for working with issues of gender equality present in the text: '*The aim is to create better and more attractive research environments - for both women and men*'. In this formulation a grammatical metaphor nominalizes the process 'to aim', with the effect that the management/taskforce as an acting agent of the text is elided. The organisational work on gender equality is here settled within three of Boltanski & Th venot's orders of worth. While the first part of the sentence points to the purpose of enhancing the University's competitiveness (market *cit *) with respect to the international war on talent (Michaels et al. 2001), as well as improving the quality of the research carried out in the organisation (Industrial *cit *), the second part appeals to the *common good* (Civic *cit *) of the organisation by emphasising that the presented initiatives will be beneficial to both male and female researchers.

The following paragraph contextualises the organizational activities on gender equality by drawing attention to the multi-faceted characteristics affecting institutional variation with regards to aspects of gender distribution.

Table A.1.8.

<p>It should be noted that Aarhus University (AU) is a multifaceted organisation with considerable variation between individual faculties and departments/centres as regards the style of human resource management practised in the individual areas; the conditions defined by the national and international world of science for practices within individual research fields; and the degree to which gender equality issues exist – and in what form. Some of the ideas suggested in this report are therefore already being applied at some faculties/departments/centres, while they are unknown or poorly implemented in other places (Aarhus University 2009).</p>

An interesting feature of this paragraph concerns the use of passive voice, which contributes to obfuscate and elide agency and modal responsibility in the text. The abstract notion of a 'world of science' constitutes the only acting agent of these formulations, while 'practices' taken by human resource management and 'ideas suggested' by the taskforce are represented as processes without agents.

In the first sentence of the paragraph, the grammatical mood is declarative and the being verb ('is') contributes to represent the varying institutional,

national and international conditions affecting the university's work on gender equality as indispensable organizational requisites. In this way, the paragraph serves to specify and explain the varying degree to which issues of gender equality exist, by referring to structural conditions defined by the external world. It is reasonable to suggest that this way of contextualising activities on gender equality illustrates a certain sense of caution. More specifically, it helps to downplay the 'accusing finger' that these formulations might otherwise signal to the faculties, departments and centres doing less well on parameters of gender equality. In other terms, the paragraph substantiates that 'poorly implemented' activities on gender equality do not necessarily reflect discriminative and biased institutional behavior. Rather, these organizational 'variations' are caused by diverse and multifarious organizational features. However, the contextualisation outlined above also has a more practical function, as it consolidates the aforementioned strategic objective of obligating faculties' to develop local action plans, rather than complying with a top-down approach to the problem.

In addition to the introductory paragraphs analysed above, a few pivotal sentences on aspects of gender and diversity are incorporated into the main university strategy.

Table A.1.9.

<p>Competence development</p> <p>It is the university's policy that the staff should be as diverse as possible, as this is the best way to ensure flexibility and to create an inspiring and creative workplace. The University wants management at all levels to place special emphasis on the composition of its staff in terms of skills, age, gender and nationality, and it is important that the university's human resources (HR) development strategy makes allowance for complementary competences.</p> <p>The aims and objectives are:</p> <ul style="list-style-type: none"> - to compete for the best staff - to have strategic competence development schemes in place for all staff groups - to ensure greater diversity among the university staff <p>(Aarhus University 2008: 36)</p>
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According to Boltanski & Chiapello (2006), the capitalist spirit of contemporary society is configured by a plurality of *cités* in which aspects of flexibility, multifarious network relations and creativity gain in significance. It is an era distinguished by increasing demands for *product variation* and *differentiation* as central means for capital accumulation (Wuggenig 2008). In the above excerpt, the main motives for working with diversity (including gender) is casted in the grammars of the *projective cité* ('ensuring flexibility') as well as the *inspirational cité* ('to create an inspiring and creative work

place’). However, principles of competitiveness (market *cit *) and quality (industrial *cit *) also permeate the organizational motives on this matter, as illustrated in the first of the objectives.

As already touched upon, the Aarhus statement includes a *journalistic interview* with a prominent Danish professor. This interview not only serves to substantiate the relevance of enhancing the gender balance at Aarhus University. It also represents a certain way of approaching issues of this concern.

Table A.1.10.

‘Twenty five per cent isn’t a quota we’ve defined for the sake of having a quota; it expresses an ambition with a specific goal. As a society we can’t afford to neglect the talent pool that female researchers represent. Experience shows that greater diversity in the composition of research teams results in more diversity in the research carried out, and often in much better teaching. These are some of the reasons why it’s extremely important to employ more women in research positions’, says the professor. In his opinion, active research management is the way to achieve the goal. It is not an initiative to promote gender equality as such (Aarhus University 2009: 6-7).

The quote above gives priority to a strategic argument for promoting gender equality. In the second clause, the enunciating subject – the professor – shifts from speaking as a representative for the renowned centre of excellence to speaking as a representative for society as a whole. The promotion of gender equality is here stated as a means to strengthening the diversity in research and teaching for the benefit of the university as well as national welfare. In this sense, one might conclude, that the incentive for involving in issues of gender is casted in the civic *cit * (contributing to the common good) as well as the industrial *cit * (enhancing research diversity and teaching) and the project *cit * (emphasising the benefits of engaging in a diversity of social relations). The excerpt is characterized by an interesting shift between *direct reporting* (quoting), *indirect reporting*, and third-person realis statements in the voice of the author. This intertextual feature serves to obfuscate agency and responsibility in the last clause, making it unclear who is actually stating that this *‘is not an initiative to promote gender equality as such’*. However, exactly that perspective also appears to play a pivotal part in the direct quotations of the professor as illustrated in the passage below. Here, it is explicated that the managerial emphasis on promoting female research talents does not implicate any kind of positive discrimination.

Table A.1.11.

'When we identify a female researcher with obvious talent, and one we would like to employ permanent (...) at a later stage, it's important to arrange development interview and clearly inform her of our intentions (...). However, the female researcher shouldn't necessarily be recommended for the first available permanent position when it is advertised', he says. 'This implies that she has to publish a sufficient number of articles in peer-reviewed journals (...)'. (Aarhus University 2009: 7).

Another interesting feature of the interview concerns the issue of *equivalence*. According to discourse theorists Laclau and Mouffe (1985) political hegemony and social classification can be understood in terms of a 'logic of equivalence'. Equivalence is a useful theoretical concept in the textual investigation of how entities (i.e. people, organizations, objects) are categorized and how similarities and differences between them are textured and collapsed via chains of equivalence (Fairclough 2003: 88). As illustrated in Table A.1.12, the interview is structured around a number of recurring contradictions opposing male and female researchers in separate chains of equivalence.

Table A.1.12. Chain of equivalence: Journalistic interview, Aarhus University's Gender equality Action Plan

<p>Women:</p> <p>often need more management support to be motivated to pursue a career in the research world</p> <p>are often not as good at drawing attention to themselves and are therefore not considered for permanent positions</p> <p>don't dare believe in a university career and go for it</p> <p>It is also possible that women consciously chooses not to go for a research career because it often takes very long time before you get a position (...) They typically need to feel in control of their future and their career.</p>	<p>Men:</p> <p>(do not need the same management support)</p> <p>(are better at drawing attention to themselves and are therefore considered for permanent positions)</p> <p>(dare believe in a university career and go for it)</p> <p>(take risks and do not need to feel in control of their future and career)</p>
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The professor's managerial reflections on the challenges characterising women's career opportunities are perfectly legitimate. However, in the context of the Aarhus policy statement, they come to represent a certain discourse. This is a discourse in which, issues of gender equality are primarily connected to women, while aspects of structural discrimination and injustice are left unnoticed. Although it might not be the intention, the intrinsic contradictions between women and men, outlined above, serve to represent female researchers as 'soft actors' in a hard world of science – a world mainly inhabited by risk-taking and self-confident men. In other terms, female researchers are pictured as deficient agents in this part of the text. Agents that

need extra management support in order to stay motivated and keep up with the demanding standards of the academic system. The segregating structures of the academic system are here epitomized as pre-given and indispensable organizational requisites that cannot be challenged, and in this sense gender (in)equality comes to be represented as a problem related to the women rather than to the organization.

As pointed out by Lombardo & Verloo (2009) the notion 'gender equality' is not to be understood as a fixed category containing one particular meaning. Rather, it is discursively constructed in a multiplicity of ways for context-dependent purposes and goals (Lombardo & Verloo 2009: 7). In the case of Aarhus University, the rights-based and justice-oriented connotations of 'gender equality' are downplayed in favour of a more instrumental approach to the topic. As stated by Fairclough (2003) '*what is said in a text is always said on the background of what is unsaid*', and one of the striking perspectives left vague in the gender equality related documents of Aarhus University is the justice-oriented argument for working with issues of gender. While an ambition '*to ensure diversity among staff and promote equality*' is in fact integrated into one of the documents (the staff policy), no attention is paid to questions of justice, equal rights or the existence of biased and latent discriminative organizational structures.

As mentioned earlier, the Aarhus statement and the Danish national strategy on gender equality in academia (developed in 2005)¹² draw on the same type of motives for engaging in issues of gender in academia. They both give priority to resource-oriented arguments regarding international competitiveness and enhanced research quality, while leaving out the more rights-based perspectives concerning justice and equality. As I shall illustrate in the following section this one-sided approach to gender equality also permeates the statements of the University of Copenhagen.

University of Copenhagen

One of the first things to catch one's eye when reading through the Copenhagen policy statement is the complete absence of the notion 'gender equality'.¹³ Here, the notion is substituted with words such as '*more women in science*' and '*gender diversity*'. As I shall illustrate in the following pages, this choice of wording might reflect an approach to issues of gender equality,

¹² Danish Ministry of Science/Gender Equality (2005)

¹³ The term 'gender equality' is only mentioned in references to other documents.

which gives priority to arguments of competitiveness and utility, while downplaying normative questions of justice and equality.

In the introduction of the Copenhagen text, it is stated that '*... the rectorate is of the opinion that diversity should be strengthened in all areas of the university*' (University of Copenhagen 2009: 1). In opposition to the formulations of the Aarhus statement, the university management is here given direct modal responsibility. However, the underlying question of what a satisfactory organizational target on gender balance might look like is left unanswered in the text.

As mentioned earlier, the Copenhagen statement takes on the genre of an *organizational memorandum* and includes a number of references to external research policies and reports. These documents all contribute to contextualize the situation at the university and offer convincing arguments for engaging in organizational work on gender diversity. In the second paragraph of the text, presented under the title 'The situation at the University in a Wider Context', the focus on gender diversity at the University of Copenhagen is broadened out to include more general statements concerning universities' in a national as well international context.

This shift in focus is exemplified in the first sentence in Table A.1.5. In this example, an existential presupposition regarding the increased competitiveness on research talent serves to substantiate the universities' organizational work on gender diversity. Subsequently, two direct references are made to external documents, which, as stated earlier, contribute to support the relevance of this perspective. It is reasonable to contend that these formulations anchor the organizational work on gender diversity in the market *cité* by giving priority to the question of competitiveness.

However, as illustrated in the first excerpt below, the university's motives for enhancing diversity are also casted in the inspirational and project *cité*, as priority is given to the expected impact on innovation that an increased level of diversity will entail. In the second excerpt, constituent elements of a more democratic approach permeate the text. The university's responsibilities regarding gender distribution are here presupposed as universally given societal obligations. However, these formulations are subsequently connected to strategic matters of securing the impact of future research and consolidating a long-term recruitment base. In other terms, arguments anchored in the civic *cité* are here combined with perspectives situating the organizational work on gender diversity in the industrial *cité* with its founding principles of functionality, investments and progress.

Table A.1.13.

Besides the need for developing the entire talent pool, The IARU project is based on a shared belief that increased diversity creates a more inclusive and innovative working environment. In a Danish context, this is supported by for example a report published by the Danish Agency of Science, Technology and Innovation, which shows that enterprises with an even gender balance are twice as innovative as other enterprises (University of Copenhagen 2009: 2).

Finally, universities, being one of the pillars on which society is built, have a special obligation to reflect gender distribution in their surroundings. Thus, an uneven gender (or age) distribution may impact the areas researched and, especially, the long-term recruitment base within a scientific area (University of Copenhagen 2009: 3).

The aforementioned ambition of enhancing international competitiveness (market *cit *) is also reflected in the first sentence below. Another striking feature of this formulation, concerns the use of the verbs *attracting* and *retaining*. One might argue that this choice of wording serves to represent the problem of gender inequality as an effect of female researchers' deliberate decisions of opting out, rather than as a result of structural bias or discrimination. Additionally, the formulation contributes to contextualize gender inequality as a national challenge, rather than as a problem rooted in the organization.

Table A.1.14.

Analyses show that Danish universities (Including University of Copenhagen) by no means excel at attracting and retaining women research talent (University of Copenhagen 2009: 3).

Overall, the uneven distribution, however, constitutes a general problem for the University – a problem that will not solve itself (University of Copenhagen 2009: 4).

In the second sentence, the focus is once again narrowed down to concern the situation at the local level – the University of Copenhagen. An interesting characteristic of this formulation relates to the question of *problem representation*. In this case, the uneven gender distribution is represented as a problem for the university, while the question of how this problem affects the lives of female researchers is left unnoticed in the text.

In the first section of the sixth page, the university's central motives and justifications for implementing actions on gender equality are stated (see excerpt below). This passage constitutes a strong example of the universities' aforementioned rhetorical emphasis on international reputation.

Table A.1.15.

The proposal from the Rectorate should therefore be seen in the light of the Strategy Destination 2012 target that the University should become 'a highly esteemed university, and one of the absolute top universities in Europe.' This means that the University must substantially improve its ability to (also) realise the potential of women research talents – without compromising the fundamental principles of free competition and quality of research (University of Copenhagen 2009: 6).

On the one hand, it can be reasonably contended that the first sentence of this paragraphs falls within the *cit  of renown*, as the university's greatness here connects to aspects of fame, recognition and success. However, the strong rhetorical emphasis on *improvement of abilities* as well as *realisation of potential*, via the use of the deontic modal verb *must*, also calls up the industrial *cit * as a significant order of worth. In the fourth line of the excerpt, the organisational values underpinning the university's approach to gender diversity become crystal clear. Actions on gender diversity *must* be taken '*without compromising fundamental principles of free competition and quality of research*'. In this sense, the organisational action plan is anchored in the domestic *cit *, as work on gender diversity is made subject to superior institutional principles. However, the underlying question of what is meant by *free competition* and *research quality* is left unanswered in the text. As in the aforementioned example regarding the notion '*gender equality*', these so called *principles* are to be seen as discursively constructed concepts, which carry particular context-dependent meanings. For instance, one might suggest that organisational work on diversity is closely connected to the principles of free competition and research quality as it contributes to reduce gender bias in academic recruitment, promotion and funding and bring about new perspectives and solutions to the contemporary challenges of society. However, in the excerpt above the sentiment is stated the other way around. The logic here seems to be, that the organisational focus on improving female researchers' career possibilities might in fact challenge or weaken these fundamental principles.

As I shall return to in the forthcoming paper 'Scandinavian approaches to gender equality in academia' (Paper 2)', one of the pivotal initiatives outlined in the Copenhagen policy statement concerns the implementation of financial incentives for faculties and departments to hire female associate- and full professors. This initiative, already prior to its implementation, gave rise to extensive public disputes, wherefore it is reasonable to interpret the above mentioned rhetorical emphasis on the inviolability of the principles of free competition and quality of research as a pre-emptive move. In other terms the last sentence in Table A.1.15 functions as a rhetorical strategy,

which serves to ward off some of the expected elements of critique that this initiative will bring about.

No direct formulations on gender diversity are incorporated into the main strategy of the university. However, a related document, entitled 'Action Plan – The Path to 2012', includes a pivotal formulation regarding this matter.

Table A.1.16.

A strong university brings the entire talent pool into play. It is therefore a priority to identify the barriers to increasing the number of women as heads of research and professors. The only way to make the whole existing potential flourish – which favourably impact core service – is to remove these barriers (...). The objective is to achieve gender balance when filling the highest academic positions in free competition (University of Copenhagen 2008).

In the above excerpt, a *realis* statement¹⁴ with a declarative grammatical mood represents the organisational work on gender diversity as a *self-evident* necessity of the 'strong university'. As in the example in Table A.1.15, the main argument for implementing structural change initiatives here relates to the strategic objective of realising the full potential of the university's talent pool. In this sense, one might argue that the text draws on the industrial *cit * and its founding principles of efficiency and process optimization. It is also worth noting, that the introductory formulation on bringing 'the entire talent pool into play' is very similar to the title of the aforementioned national policy statement – 'Bringing All talent into play' (Danish Ministry of Science & Danish Ministry of Equality: 2005). I will now turn to the Norwegian policy statements.

University of Bergen

As mentioned earlier, the Bergen policy statement is not available in English. This evidently has some implications for the presentation of the analytical results outlined in this section. The preceding analysis has been conducted on the basis of the Norwegian document, but the excerpts and phrases included in this paper will be translated into English.

The Bergen statement is presented as an Equality Action Plan valid for the period 2011-2015. The action plan is adopted by the university board and applies an extended approach to the concept of equality including aspects of age, nationality, impaired functional abilities and gender. One chapter of the statement is dedicated specifically to issues of gender equality. In this section, I will focus on the opening vision statement of the text as

¹⁴ A *realis* statement concerns what is, what was or what has been the case. Realis statements are often denoted as *statements of fact* (Fairclough 2003: 109).

well as the introductory paragraphs of the subsequent chapter concerning gender equality. In addition to these paragraphs, the Bergen policy statement includes five pages of clarifying statements regarding; legal basis, current gender distribution, structural challenges to gender equality, as well as future targets and initiatives.

An interesting feature of the Bergen statement concerns the use of the term 'discrimination' (see excerpt below). In opposition to the policy statements of Aarhus and Copenhagen, 'discrimination' is here existentially presupposed and stated as something the university management will actively work to prevent.

Table A.1.17.

The work on equality is anchored in UiBs Strategy (2011-2015), which underlines that the university will work actively to prevent discrimination, and create inclusive work and study environments built on diversity and equality. High skills, strong interplay between academic, administrative and technical staff and efficient cooperation processes are necessary to achieve the common objectives of the University. The starting point is an extended concept of equality, including initiatives against all forms of discrimination (University of Bergen 2011: 3)
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By relating organisational work on equality to principles of *inclusion* and *active prevention of discrimination* as well as matters of efficiency and working skills, the formulation above juxtaposes arguments casted in the civic *cit * and the industrial *cit *. As mentioned already, this juxtaposition of justice-based and more resource-oriented motives for implementing gender equality is a recurring feature of the Norwegian and Swedish policy statements.

As illustrated in Tables A.1.17, A.1.18 and A.1.19, the recurring grammatical mood of the Bergen text is declarative and most of the formulations are constructed as third person *realis* statements. This way of speaking contributes to represent the arguments regarding *equality* as universally given and indispensable organisational requisites. In the first excerpt below, this is exemplified by the use of the being verb ('is'), which serves to lay out the university's vision as a state of being rather than a process of doing. International reputation is here stated as one of the central organisational motives for working with gender issues, and in this sense the argument falls within the *cit  of renown*. It is also interesting, that '*a recruitment practice that ensures equal rights*' is here stated as one of the *requisites* for achieving international acknowledgement. This reflects a more rights-based approach to the question of diversity, than what is the case at the Universities of Aarhus and Copenhagen outlined earlier.

Table A.1.18.

It is the University's vision to be an internationally acknowledged research university. An important requisite for achieving this objective is the establishment of international and diverse research environments with a good gender balance and age structure. It is also important that the university has a recruitment practice that ensures equal rights and provides all of the academic employees with time and funds for research.

An organizational culture characterized by basic values such as diversity and equal treatment, will enhance the job satisfaction and motivation among employees. If the employees feel well taken care of, their abilities as teachers will enhance and they will conduct research of high international quality. Thus, a culture of diversity is a key to a good university (University of Bergen 2011: 3)

In the second paragraph, the argument linking equality and international reputation is further outlined. Here, the *basic values* of diversity and equal treatment are combined with aspects of job satisfaction, motivation and research quality. One might argue that these motives are rooted in the civic *cit  * (job satisfaction) as well as the industrial *cit  * (research quality).

However, the aforementioned rhetorical emphasis on establishing dynamic and creative research environments also constitutes a pivotal argument for working with issues of gender equality at the University of Bergen. This is illustrated in the first sentence below, which is situated in the in the project/inspirational *cit  *.

Table A.1.19.

Gender

Improved gender balance and equality in all parts of the organisation is an important requisite for creating robust, dynamic and creative research-, education-, and work environments. The University's objective in regard to equality between the sexes is based on both a justice perspective - that men and women shall be given equal opportunities in terms of education, employment and professional development - and that we should benefit from the experiences of both sexes in the development of knowledge, research and work environment (University of Bergen 2011: 4)

Another immediately striking feature of this paragraph concerns the juxtaposition of *justice* and *difference* as complementary motives for engaging in organizational work on gender equality. The use of a deontic modal verb (*'shall'*), and the rhetorical shift from a declarative to an imperative grammatical mood after the hyphen in line three reveals, that equal opportunities have not yet been achieved. In other terms, *gender inequality* is existentially presupposed in the text, and one might argue that the rhetorical emphasis on justice is anchored in the civic *cit  *, in which an actor's worth originates from his/her capacity to represent collective interests. The last sentence of the paragraph, on the contrary, is distinguished by the Norwegian *'rhetoric/or discourse of difference'* (Skjeie 2005). A discourse, which stresses the relevance and importance of drawing attention to the gendered differences

characterising male and female actors' experiences and contributions to society. It is reasonable to suggest that this formulation introduces a more instrumental and resource-based approach to the question of gender equality and settles the argument for engaging in this matter in the industrial *cit *, where an actors' greatness connects to the principles of quality, utility and performance.

The formulations on gender equality integrated into the strategic documents of Bergen University do not add anything of substance to the perspectives outlined above, wherefore I will now turn to the policy statement of the University of Oslo.

The University of Oslo

The Oslo statement constitutes a three page document – valid for the period 2010-2012 – presented under the title 'Gender Equality Action Plan'. In addition to the introductory statements analysed here, the document includes three main chapters outlining the main goals, central actions, local actions and target figures of the university. The Oslo statement begins by defining 'gender equality'.

Table A.1.20

Work with gender equality is a strategic matter for the University of Oslo. Gender equality is an issue of diversity and equal opportunities. Gender equality is also about the quality of our activities as the country's foremost institution for research, education and dissemination, and the opportunities to achieve broad-ranging and good recruitment of competent personnel (University of Oslo 2010: 1).

The grammatical mood is declarative and comprises three propositional assumptions¹⁵ about gender equality. *First*, gender equality is represented as a strategic matter. In other terms, it relates to the identification of long term aims and interests. *Secondly*, gender equality is stated as an issue of *diversity* and *equal opportunities*. As in the case of the Bergen statement *diversity* and *equal opportunities* are here distinguished as separate concepts. While the rhetorical emphasis on *equal opportunities* obviously falls within the civic *cit *, one might argue that the concept of diversity is more ambiguous. On the one hand, *diversity* can be seen as reflecting managerial interests and ideas about how to enhance workplace productivity and creativity, while downplaying questions regarding democratic representation, anti-discrimination and justice (Edelman et al. 2001). However, diversity may also be un-

¹⁵ A propositional assumption is an assumption about what is or will be the case (Fairclough 2003: 55).

derstood as an institutional approach which acknowledges *differential treatment* as a necessary means to achieve equal opportunities (Leiva 2011). Thus, it is reasonable to conclude, that the emphasis on diversity here combines aspects of four *cités*: the civic, the industrial as well as the inspirational and the project *cit *.

In the third propositional assumption outlined above, gender equality is connected to matters of quality and recruitment. The formulation '*gender equality is also about...*' indicates that these matters should be seen as contextually rooted supplements to the overriding principles of *diversity* and *equal opportunities*. It is reasonable to contend that *quality* and *recruitment of competent personnel* is indicative of the industrial *cit * (research quality). However, the notion of *quality*, in this context, might as well relate to the aforementioned objective of serving societal needs, wherefore it is also plausible to anchor it in the civic *cit *.

The paragraph in Table A.1.6 settles the policy statement within the frame of the university's overriding strategy plan. In this excerpt, a shift in noun, from '*the University of Oslo*' to the broader category of '*the internationally leading university*', places Oslo among the international forerunners of research and higher education. Yet, it also frames the organization's work on gender equality in a global setting by making an 'active policy of equality' a prerequisite for attaining or retaining the position as an internationally leading university. The shift in grammatical mood from declarative to imperative and the use of a deontic modal verb (must), contributes to underline the necessity of this perspective, and it is reasonable to conclude, that this part of the statement is anchored in the *cit  of renown*. The use of the adjective 'active', in the last sentence, may refer to the regular development and revision of the gender equality action plans at the university.¹⁶ However, it might as well serve to communicate, that this action plan is more than just a value statement.

In opposition to the Bergen statement, this text does not include any direct reflections on gender discrimination. However, as I shall outline below, aspects of structural discrimination are existentially presupposed in the text.

Table A.1.21.

The action plan will contribute to a better gender balance in categories of positions and study programmes, and promote an organizational culture and a working and learning environment that will give women and men equal opportunities (University of Oslo 2010: 1).

¹⁶ This document is valid for the period 2010-2012.

In stating that the action plan will *'promote an organizational culture and a working and learning environment that will give women and men equal opportunities'*, it is indirectly presupposed, that aspects of discrimination – in terms of unequal opportunities – still do exist in the organization. The rhetorical emphasis on creating 'a better gender balance' might indicate that the organizational work on gender equality is considered a long term process that will not be solved in two years' time.

The above-mentioned division of gender equality into matters of *equal opportunities* and *diversity* is also evident in the personnel policy of the university.

Table A.1.22.

<p>Fundamental values</p> <p>UiO shall integrate gender equality as a conscious component in all its activities, treat all employees as equals, and counteract all forms of discrimination and unreasonable differential treatment (University of Oslo 2006, 2).</p> <p>Recruitment (guidelines)</p> <p>UiO will: make a special effort to improve the recruitment of groups that represent significant, unused potential for the university: women, various minority groups and international researchers at an early stage in their careers (University of Oslo 2006: 3).</p>

In the first excerpt above, the question of gender equality is represented as a fundamental value of the university, which is indicative of justifications casted in the domestic *cit  *. The grammatical mood is imperative and the rhetorical emphasis on gender equality as a conscious component in all of the universities activities indicates that Oslo's work on gender equality is influenced by ideas of *gender mainstreaming*.¹⁷ Here, the existence of discrimination is presupposed in a more explicit way and represented as something the university obliges itself to counteract, and the text hereby also anchors itself in the grammars of the civic *cit  *.

Another interesting feature of this clause concerns the use of the adjective 'unreasonable'. This rhetorical gesture serves to legitimate a certain approach to diversity which acknowledges *differential treatment* as a legiti-

¹⁷ According to the EU 'gender mainstreaming involves (...) mobilising all general policies and measures specifically for the purpose of achieving equality by actively and openly taking into account at the planning stage their possible effects on the respective situation of men and women (gender perspective). This means systematically examining measures and policies and taking into account such possible effects when defining and implementing them' (European Commission 2008).

mate means to achieve gender equality; and positive action measures are in fact integrated into the university policy statement.¹⁸ The second excerpt constitutes a more instrumental approach to the topics of gender and diversity. Here women are represented as *unused potentials for the university*, which is indicative of the industrial *cit *.

The university strategy plan – ‘*Strategy 2020*’- also includes a few pivotal formulations on gender equality.

Table A.1.23.

The university will have an active recruiting policy with an international focus ensuring equal opportunities for all, and with a clear profile for equality between women and men (University of Oslo 2010b: 14).

The university must have a broad base for recruiting staff, something that will require an active gender-balance and recruitment policies with equal opportunities for all. Through the recruitment process and follow-up of employees, UiO will strive for a better gender balance in the various levels of positions. Incentive schemes will be developed to promote recruitment of women to top academic positions (University of Oslo 2010b: 15).

Both formulations represent gender equality as matters of recruitment. While the first excerpt directly connects the university’s recruiting policy to rights-based matters of *equal opportunities* and *gender equality*, the second excerpt adopts a more resource-oriented approach to the topic by representing *gender* equality as a prerequisite for creating a broad base for recruitment. In this sense, the main strategy juxtaposes arguments casted in the civic *cit * and the industrial *cit *. I will now turn to the Swedish policy statements.

The University of Uppsala

As already mentioned, Uppsala’s Gender equality action plan exemplifies one of the stronger and more direct policy statements analysed in this study. The voice and role of the university management is explicated in clear terms, and the assigned responsibilities stand out quite distinctly. Uppsala’s policy statement also differs from the rest of the universities’ action plans by separating the substantiating visions and objectives regarding *equal opportunities* from the concrete actions and initiatives outlined in the gender equality plan (see Table A.1.2). I will begin this part of the analysis by drawing attention to the ‘*Gender Equality Plan 2011-2012*’ and hereafter turn to the more general visions and objectives outlined in the *Equal Opportunities Programme*.

¹⁸ I shall return to this in the paper ‘Scandinavian approaches to gender equality in academia: A comparative study’.

Gender equality plan 2011-2012

The recurring mood of Uppsala's gender equality plan is declarative and most statements are represented as *realis statements*. However, as exemplified in the first sentence in Table A.1.24, a few formulations also take on an imperative grammatical mood.

Table A.1.24.

All people must be able to work and pursue studies at Uppsala University regardless of gender. Gender equality is a quality issue for the organization. The Gender Equality Plan is formulated in gender-neutral terms, but gender-related differences in working conditions, influence, etc. within the University in general have been and still are detrimental to women, which entail consequences for the direction of work for gender equality (Uppsala 2011: 3)
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In the first sentence above, a deontic verb ('*must*') helps to represent *equal opportunities* between women and men as an important organizational obligation. The subsequent formulation involves a shift from an imperative to a declarative mood, which serves to epitomize gender equality at Uppsala as an issue of *quality*. As mentioned already, the rhetorical emphasis on *quality* is indicative of the *industrial cité*. However, it might as well relate to the question of serving collective needs of society, wherefore it is also plausible to anchor it in the *civic cité*. As in the case of the Norwegian policy statements, discrimination against women is here existentially presupposed as a problem. The use of the strong adjective '*detrimental*' in the third clause of the paragraph reveals that organizational work on gender equality is not merely a question of *quality issues* at the University of Uppsala. It also concerns rights-based matters of *justice* and *equality* appealing to the grammars of the *civic cité*.

Equal Opportunities programme

As mentioned already, Uppsala's Equal Opportunities programme (EOP) includes a number of substantiating visions and objectives regarding *equal opportunities* and provides direction for the universities systematic approach to issues of *equal treatment* (University of Uppsala 2010: 4). By *equal treatment* is here meant; '*that all individuals, without regard to sex, gender identity and/or expression, ethnicity, religion or other belief, disability, sexual orientation or age, enjoy the same prospects for performing optimally*' (University of Uppsala 2010: 4). In other terms, this document applies an extensive approach to the topic of *equal opportunities* including other focus areas than gender equality. However, the EOP still constitutes the starting point of Uppsala's work on gender equality (as outlined in Table A.1.2), wherefore I have chosen to this document in the analysis.

As illustrated below, the EOP document shifts between declarative third person *realis statements* and imperative statements with moral modality. However the document is mainly held in a declarative tone, and this grammatical feature, serves to epitomize the university's activities with regards to *equal opportunities* as indispensable organizational requisites which cannot be challenged.

The aforementioned juxtaposition between rights-based and more strategic and resource-oriented motives for working with equality also stands out as a central formulation of this document. Here, the notion '*equal opportunities*' is defined as a matter of *justice* and *quality*, which is indicative of justifications casted in the *industrial* as well as the *civic cité*. The document also draws on the *inspirational* and the *projective cité* as well as the *cité of renown* by committing the university to the overriding principles of *creativity* and *diversity* and by making international reputation and success a common matter.

Table A.1.25.

<p>Preface</p> <p>At Uppsala University, all employees and students must be able to work and pursue studies on equal terms. Everyone must be treated with equal respect and understanding. For the University, equal opportunity is a matter of both justice and quality (Uppsala 2010: 3).</p> <p>Education and learning counteract prejudice and structural discrimination. The University's modus operandi must be characterized by creativity and diversity. Together we can all help to strengthen our university in its position as a world-leading centre of learning. Knowledge, openness, empathy, respect, and collaboration are key words in our mutual work, in everyday life, in contacts with co-workers, guests, and students (Uppsala 2010: 3)</p>
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The second paragraph above includes an interesting change in modality. Here, the text shifts from speaking with impersonal authority about what is the case, to speaking on the behalf of an inclusive 'we'. This shift contributes to represent *equal opportunities* as a common responsibility involving *all* university stakeholders.

On the fourth page of the document it is stated that the university '*undertakes to draw on the talents, competencies and resources of all concerned*' (Uppsala University 2010: 4). In other terms, *equal opportunities* at Uppsala are not merely understood as matters of retaining and recruiting 'the best heads'. This way of articulating organizational activities on equality and diversity conveys a more inclusive (and less elitist) approach to the topic of equality, than what is the case in the Danish policy statements.¹⁹

¹⁹ I shall take this up again later in the analysis.

The aforementioned rhetorical emphasis on the organizational structures detrimental to women also permeates the EOP. Here, the strategies ensuring equal treatment (including the gender equality action plan) are stated as '*Action plans specific to different forms of discrimination*'. This way of articulating organizational work on equality differs strongly from the approach of the Danish Universities, where matters of discrimination and inequality are either downplayed or silenced in the text. I will now turn to the statements of Lund University.

Lund University

Lund's policy statement 'Policy for gender equality, equal treatment and diversity'²⁰ opens with the following formulation:

Table A.1.27.

Objective

Lund University's target is to be one of the very best universities in Europe. To reach that target, the knowledge and ambitions of employees and students must be utilised, and their different perspectives must be allowed to help establish a creative study, learning and research environment. Gender equality, equal treatment and diversity lead to improved quality in the organisation (Lund University 2011: 1)

As in the case of the Uppsala statement, this text shifts between declarative third person *realis statements* and imperative statements with moral modality. In the first clause, the being verb ('is') contributes to represent Lund's overriding target of becoming one of the best universities in Europe as a statement of fact, while the deontic verb ('must') in the subsequent formulation obligates the university to utilize the knowledge and ambitions of all employees. This reveals that gender equality at Lund is a strategic matter anchored in the *industrial cité* as well as the *cité of renown*. However, the rhetorical emphasis on establishing *creative* research environments also appeals to the grammars of the inspirational *cité*.

The use of a passive voice in the second clause obfuscates the modal responsibility of the university management and contributes to represent the utilization of knowledge and ambitions as a common matter involving all university stakeholders. Another interesting feature of this clause concerns the rhetorical emphasis on *utilizing the knowledge and ambitions of employees* rather than realising the potential of talents, as it is for instance formulated in the Copenhagen statement (see Table A.1.15). This might indicate that Lund University adopts a more inclusive approach to the topic

²⁰ This document also includes other focus areas than gender equality.

combining perspectives of international competitiveness with ambitions of realizing the potential of all employees. The third sentence above constitutes a declarative realis statement representing gender equality as a matter of *quality*, which is indicative of the *industrial* as well as the *civic cité*. It is important to note that the relation between *gender equality* and *improved quality* is here represented as a causal relationship – via the use of the transitive verb (lead). An alternative formulation might have read: ‘*Work on issues of gender equality (...) is instrumental to the improvement of quality (...)*.’ However, this is not the case, which might indicate that equality between the sexes is considered a self-evident and non-debatable target at Lund University.

The use of third person realis statements and passive voice also permeates the subsequent paragraphs. In the first excerpt below, *gender equality*, *equal treatment* and *diversity* are represented as founding principles of the university, and one might argue that the organizational work with issues of gender equality is here casted in the domestic *cité* giving priority to organizational dependencies, hierarchy and tradition (Boltanski & Thévenot 2006: 90). This indicates that gender equality at Lund is considered an indispensable organizational pre-requisite that cannot be challenged. It is also reasonable to assume that this way of articulating *gender equality*, *equal treatment* and *diversity* as fundamental organizational principles, arises from a broader idea about serving the ‘common good’ and the collective needs of society, which is indicative of the *civic cité*. The second sentence substantiates the prevention of discrimination as a central area of focus in the universities approach to gender equality, which also points to the grammars of the civic *cité*.

Table A.1.28.

Activities at Lund University are founded on gender equality, equal treatment and diversity – together with the strategic plan and the Discrimination Act. This means that employees and students, as well as job applicants and potential students at Lund University are to be treated and assessed without inappropriate consideration of sex (...)(Lund University 2011: 1).

Within the university there is zero tolerance of discrimination (Lund University 2011: 1).

The policy statement also includes an interesting formulation regarding gender awareness in academia. On page three it is stated, that ‘(...) gender awareness in teaching and learning will have a prominent place in the qualifying training (...) at Lund University’. In a related document it is stated that: ‘A gender perspective shall illuminate how social factors contribute to create unequal conditions for women and men’ (Lund University 2007). As I shall re-

turn to in the paper 'Scandinavian Approaches to Gender Equality in Academia: A Comparative Study' this indicates of a strong institutional emphasis on creating more gender-sensitive and inclusive environments by challenging existing academic cultures and norms. The university's main strategy plan also incorporates a few pivotal formulations regarding gender equality.

Table A.1.29.

Lund University represents fundamental human rights and democratic and academic values. We shall operate in a context of gender equality and ethnic and social diversity (Lund University 2012: 4).

We shall therefore offer professional working conditions that enable us to recruit the very best staff. Gender equality is a prioritised area (Lund University 2012: 6).

In the first excerpt, gender equality is represented as a fundamental human right and democratic value permeating the operations of the organization, which is indicative of the *civic cité*. However, the text also applies a more strategic approach to the topic, as outlined in the second excerpt. One might argue that this perspective is casted in the grammars of the industrial *cité*.

The juxtaposition between rights-based and more resource-oriented approaches to the problem of gender equality is also reflected in the university's overall research strategy. In this document an argument regarding national and international competitiveness anchored in the market *cité*, is supplemented with a normative perspective pointing towards the grammars of the civic *cité* (democratic values and gender equality).

Table A.1.30.

A coherent human-resources strategy will help enhance the national and international competitiveness of LU. (...) LU has been organising leadership programmes for younger teachers and researchers, both men and women, for a number of years (...). The leadership programme places particular emphasis on the strategic need to recruit more women to leading positions at LU (Lund University 2009: 13-14).

Our strategic plan lays down, among other things, that we should represent democratic values, tolerance, diversity and gender equality (Lund University 2009: 16).

Table A.1.31 summarizes the main analytical findings by displaying how each university legitimate and justify organizational initiatives on gender equality.

Table A.1.31. Justifications for engaging in organizational work on gender equality

Cité	University					
	Aarhus	Copenhagen	Bergen	Oslo	Uppsala	Lund
Inspiration	Inspiring environments	Innovation through diversity	Creative environments	Diversity (creativity)	Creative environments	Creative environments
Domestic		Competition and quality as inviolable principles		Gender equality as a founding principle		Gender equality as a founding principle
Renown	International reputation	International reputation	International reputation	International reputation	International reputation	International reputation
Civic	Contributing to welfare Initiatives beneficial to both women and men Diversity beneficial to society	Societal obligation (democracy)	Inclusion Prevention of discrimination Equal opportunities Justice Job satisfaction	Contributing to national welfare Counteract discrimination Equal opportunities Equal treatment	Contributing to welfare via quality Prevention of discrimination Justice & equal opportunities	Contributing to welfare via quality Non-discrimination Gender equality as fundamental Right and democratic value.
Market	Competition for research talent	Competition for research talent				International competitiveness
Industrial	Recruiting the best staff Better research environments Attractive environment Diversity beneficial to research and teaching	Long term recruitment base. Improvement of abilities Realization of potential	Enhancing efficiency and working skills Knowledge and research development	Quality Recruitment of competent personnel A broad recruitment base Diversity enhance productivity Women as unused potentials	Quality	Quality Utilizing knowledge and ambitions Recruiting the very best staff
Projective	Ensuring flexibility	Diversity	Dynamic environments	Diversity	Diversity	

The Danish rhetoric of talent

As mentioned, the Swedish gender equality statements appear to convey a more egalitarian approach to the topic of equality in research, than what is the case in the Danish statements. On the fourth page of Uppsala's gender equality plan, it is, for instance, stated that the university '*undertakes to draw*

on the talents, competencies and resources of all concerned" (Uppsala University, 2010, p. 4), while the Lund statement underlines the importance of utilizing the knowledge and ambitions of employees in general (Lund University, 2011, p.1). As illustrated below, the Universities of Bergen and Oslo include similar formulations.

A university's most important resource is the people who work and study there. Therefore, this strategy aims to provide possibilities that bring out the best in each individual. An internationally leading university must conduct an active policy of equality between women and men, and a recruiting policy that ensures diversity and equal opportunities for all (University of Oslo, 2010b, p. 5).

It is the university's vision to be an internationally acknowledged research university. An important requisite for achieving this objective is the establishment of international and diverse research environments with a good gender balance and age structure. It is also important that the university has a recruitment practice that ensures equal rights and provides all of the academic employees with time and funds for research (University of Bergen, 2011, p. 3).

In the first excerpt above, drafted from Oslo's main strategy, a direct relation is made between the organization's work on gender equality and a strategy that *'aims to provide possibilities that bring out the best in each individual'*. The second excerpt, taken from Bergen's equality plan, likewise emphasizes an inclusive perspective. In this text, a direct relation is made between the universities' overriding vision of becoming an internationally acknowledged research institution and the obligation of providing *all* of the academic employees with time and funds for research.

In oppositions to this, the statements of Aarhus and Copenhagen represent a more elitist approach to the topic. As illustrated in Paper 1, priority is here mainly given to the question of retaining and attracting the (most) talented female researchers.

A simple counting of document keywords also reveals an overrepresentation of notions and words related to the *rhetoric of talent* in the Danish statements. Table A.1.32 displays the number of times a term, similar to the examples below, have been used in each of the six universities' gender equality documents. The bracketed numbers accounts for the approximate number of pages of the given documents.

- 'This means that the University must substantially improve its ability to (also) realise the potential of *women research talents* (University of Copenhagen, 2008)

- 'To ensure that young women with *talent* and potential for a research career receive the necessary backing' (Aarhus, 2009).

Table A.1.32. Institutional variations in the rhetorical emphasis on issues of retention and attraction of research talent in the gender equality plans

	Aarhus	Copenhagen	Bergen	Oslo	Lund	Uppsala
Gender Equality Plans	9 (9)	8 (9)	0 (21)	0 (3)	0 (3)	0 (11)

As illustrated in the table, there is a clear overrepresentation of terms connected to the 'rhetoric of talent' in the statements of Aarhus and Copenhagen. Formulations similar to the examples above are mentioned nine times in each of the Danish gender equality plans, while none of the Swedish and Norwegian policy statements place emphasis on this perspective. The Danish universities' strong policy focus on gender equality (or diversity) as a matter of talent utilization raises fundamental concerns about about what a research talent is, how it is defined and identified, to what extent its prevailing conceptions intermingles with issues of gender and gender equality. Furthermore, one may question what talents – in addition to academic merits – are actually needed of a researcher to survive in the academic world? These concerns will constitute the thrust of the following three empirical chapters.

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Appendix 2: Example of procedural document used by assessment committees when evaluating candidates for senior research positions

CRITERIA FOR EVALUATING CANDIDATES FOR POSITIONS AS FULL PROFESSOR, ASSOCIATE PROFESSOR, SENIOR SCIENTIST, OR SENIOR ADVISOR

The set of criteria below may be used by:

- Evaluation committees, research committees, department heads, deans, and others who discuss the qualifications of candidates.
- Researchers to evaluate their own prospects for obtaining a position at the Faculty of Science & Technology at Aarhus University.

Candidates are judged by a balanced evaluation of the criteria. They are divided into three categories:

- A-criteria are very important.
- B-criteria are also important, but it is acceptable if some are only partly fulfilled.
- C-criteria are qualifications and experiences that are not specifically required by a candidate for this type of position. However, these count positively and may to some extent compensate for not fulfilling all A- and B-criteria.

The letters in front of a criterion, indicate the demand for a full professor, associate professor, senior scientist, and senior advisor, respectively. Some professorships have their main duties within research and teaching, while others have their main duties within research and industrial/ public sector collaboration. Hence, the professorship column splits into two alternative columns for teaching and industrial/public sector collaboration.

Words in square brackets [] only apply for full professorships, while words in curly brackets { } only apply for the other three kinds of positions.

RESEARCH (PEER-REVIEWED PUBLICATIONS)

- A AAA [Numerous] {Several} papers in high-quality journals or other high-quality publication channels.
- A AAC [Several] {Some} papers in the very best publication channels within the research area.¹
- A AAC [Many] {Some} papers with good citation numbers.¹
- A AAC [Excellent] {Good} H-index (depending on research area {and number of years after PhD degree}).
- A AAB Independent production after PhD (e.g. demonstrating ability to work in different subareas and with different people).

¹ Number depends on research area. First/communicating authorships are taken into account when relevant.

RESEARCH (NETWORK)

- A AAB [Extensive] International research collaborations (e.g. joint papers and applications).
- A BBC Programme/organising committees, editorial boards, invited lectures, peer-reviewing, etc.
- A AAB Productive stay(s) at another university/research institution preferably in another country.
- C CCC PhD-study/employment in a world-class research group.

RESEARCH (ACADEMIC LEADERSHIP/FUNDING)

- A BBC [Demonstrated] Ability to perform ground-breaking research.
- A BBC [Demonstrated] Ability to provide scientific leadership, inspiration and guidance of research colleagues.
- A BBB [Demonstrated] Ability to manage large research projects {or substantial parts of these}.
- A AAA [Demonstrated] Ability to attract [substantial] external funding.
- C CCC Experience with interdisciplinary research.
- C CCC Elite funding such as ERC.

TEACHING AND OUTREACH

- AA AAC Supervision {or co-supervision} of PhD students and Master's thesis students/bachelor projects.
- AB ACC Demonstrated ability to deliver high-quality undergraduate/graduate teaching.
- AC BCC Development of teaching plans/material.
- CC CCC Implementation/development of innovative teaching methods.
- BB CBA Public outreach, e.g. popular science lectures/articles.

INDUSTRIAL/PUBLIC SECTOR COLLABORATION

- BA BAA Collaboration with/employment in industry/public organisations or planning and management of consultancy/advisory projects or monitoring programs.
- BB BBB Providing the scientific basis for industrial collaboration or legislative/political decision-making.
- CB CBA High-quality advisory papers/technical reports, collection/analysis/modeling of large data sets, and quality assurance experience.
- CB CBB Development/application of models/analytical methods etc. for use in industry/public sector and membership of expert groups/boards in ministries/EU etc.
- CC CCC Patents/spin-off companies.

ADDITIONAL SKILLS

- A AAA Good communication skills (oral and written).
- A AAA Ability to collaborate and build relationships.
- B CCC Contribution to local administration (e.g. participation in departmental committees).

Appendix 3:
Use of scientific performance measures
at Aarhus University

Table 1: Overview of the appointment reports

Science/Technology	Health Sciences	Business/Social Sciences	Humanities
Molecular biology (2009)	Public health (2008)	Business administration (2012)	Theology (2009)
Computer science (2012)	Biomedicine (2012)	Political Science (2010)	Literature (2011)
Geoscience (2012)	Clinical medicine (2012)	Business Communication (2012)	European studies (2011)
Mathematics (2011)	Biomedicine (2011)	Business administration (2011)	French (2006)
Chemistry (2011)	Public health (2011)	Law (2013)	Aesthetics and communication (2011)
Cross disciplinary (2010)	Cross disciplinary (2006)	Business administration (2012)	Media science (2007)
Biology (2010)	Public health (2006)	Management (2007)	History (2011)
Molecular biology (2005)	Biomedicine (2007)	Business communication (2006)	History (2011)
Mathematics (2007)	Clinical medicine (2011)	Economics and business (2007)	
Chemistry (2006)	Public health (2011)	Law (2010)	
Computer Science (2008)	Clinical medicine (2012)	Economics and business (2010)	
Environment. Science (2010)	Biomedicine (2007)		
	Public Health (2005)		

Table 2: Social Sciences and Business (Appointment reports)

	Pub count	Citation count (paper/average)	h index	Impact factor	Journal rankings (prestige)	Productivity trends (increasing?)	Co-authored	Scientific Age (relative to productivity)
Business adm.	X			X	X		X	X
Political Science (Sociology)	X							
Business Com.	X				X			
Law								
Management	X			X	X			
Economics	X				X			X

Table 3: Health (Appointment reports)

	Pub count	Citation count (paper/average)	h index	Impact factor	Journal rankings (prestige)	Productivity trends (increasing?)	Author sequence (first/middle/last)	Scientific Age (relative to productivity)
Public Health	X	X	X	X	X	X	X	
Biomedicine	X	X		X	X	X	X	
Clinical medicine	X			X	X	X	X	
Crossdisciplinary	X						X	

Table 4: Science and Technology (Appointment reports)

	Pub count	Citation count (paper/ average)	h index	impact factor	Journal rankings (prestige)	Productivity trends (increasing?)	Author sequence (first/middle/last)	Scientific Age (relative to productivity)
Molecular biology	X	X	X	X	X	X	X	X
Computer science	X	X	X	X	X			X
Geoscience	X						X	X
Mathematics	X							
Chemistry	X					X		
Cross disciplinary (Physics)	X							
Biology	X	X	X	X	X		X	
Environmen. Science	X						X	

Table 5: ARTS (Appointment reports)

	Pub count	Citation count (paper/ average)	h index	impact factor	Journal rankings (prestige)	Productivity trends (increasing?)	Collaboration (solo-authored?)	Scientific Age (relative to productivity)
Theology	X							
Literature	X							
European Studies	X							
French	X							
Aesth. & Comm.	X						X	
Media Science								
History	X					X	X	

Table 6: Social Sciences and Business (Interviews)

	Pub count	Citation count (paper/average)	h index	Impact factor	Journal rankings (prestige)	Productivity trends (increasing?)	Co-authored	Scientific Age (relative to productivity)
Business administration	X			X	X			
Business communication	X				X			
Economics	X			X	X	X		
Political Science	X				X			
Interdisciplinary (Business/Engineering)	X	X		X	X	X	X	X

Table 7: Health (Interviews)

	Pub count	Citation count (paper/average)	h index	Impact factor	Journal rankings (prestige)	Productivity trends (increasing?)	Author sequence (first/middle/last)	Scientific Age (relative to productivity)
Public Health	X		X		X	X	X	
Biomedicine	X	X	X	X	X	X	X	
Clinical medicine	X	X	X	X		X	X	
Legal medicine	X							
Odontology	X		X					

Table 8: Science and Technology (Interviews)

	Pub count	Citation count (paper/average)	h index	impact factor	Journals/rankings (prestige) (conferences)	Productivity trends (increasing?)	Authorsequence (first/middle/last)	Scientific Age (relative to productivity)
Molecular biology	X	X	X	X		X	X	
Computer science	X	X	X		X			
Geoscience	X	X	X		X	X		X
Mathematics	X	X			X			
Chemistry	X	X	X				X	X
Biology	X	X	X	X	X			
Physics	X	X	X		X	X	X	
Engineering	X	X	X		X			
Agroecology	X		X	X				
Food science	X	X	X		X			
Animal science	X		X	X	X	X		X
Environmental science	X		X	X	X			

Table 9: Humanities (Interviews)

	Pub count	Citation count (paper/average)	h index	Impact factor	Journal/rankings (prestige)	Productivity trends (increasing?)	Co-authored	Scientific Age (relative to productivity)
Culture and Society	X				X			
Education	X							

Appendix 4:

Interview guide for interviews with department heads (translated)

Introductory briefing:

Purpose of interview study:

Before we start, I will briefly outline the main themes of our conversation:

As mentioned in my email request, my research focuses on similarities and differences in female and male researchers' career preferences, career paths and research interests, and this interview study has two main purposes: 1) to illuminate organizational practices related to the recruitment for research positions equivalent to associate professorships, temporary professorships and full professorships at Aarhus University; and 2) to investigate how bibliometric performance measures are used in the ongoing evaluations of individual researchers and in assessments related to recruitment and selection.

Dictaphone:?

Anonymity:

I will anonymize both name and department affiliation of all interviewees. However, since the interview study focuses exclusively on department heads at Aarhus University, this obviously involves some limitations in terms of anonymity. I therefore also find it important to emphasize, that it is up to you to modify your statements if necessary. If I choose to integrate any direct quotes from this interview in my work, you will naturally be allowed to approve these quotes before publication.

Duration

50-60 minutes

Form:

I have a number of general questions and themes that I would like for us to discuss during the next 50 to 60 minutes. I will start out by asking some open questions about the recruitment and selection practices and procedures in this department. In order reach the best possible understanding of these issues, I will ask you provide concrete examples illustrating your points and perspectives.

Do you have any clarifying questions or remarks before we begin the interview?

Interview guide:

Main themes	Sub-themes	Questions
Recruitment and selection practices	<p>Composition of assessment committee? (Role of department heads and deans?)</p> <p>Open or closed announcements?</p> <p>Development and framing of position profile?</p> <p>Communication of vacancy?</p> <p>Temporary/Permanent position?</p> <p>Appointments with merely one applicant?</p> <p>Selection of appointee?</p> <p>(Role of department heads and deans?)</p>	<p>Would you please start out by describing a typical recruitment process in this department - from the introductory steps to the final candidate is identified?</p> <p>(Associate-/ full professorships)</p> <p>Would you please describe the most recent example of a recruitment process at this department, where a vacancy was not announced publicly?</p> <p>(Associate-/ full professorships)</p> <p>Please describe the procedures related to the latest recruitment where you (plural) ended up with one or very few applicants?</p>
The 'employable' researcher	<p>Main assessment criteria?</p> <p>Research performance</p> <p>Teaching</p> <p>Dissemination</p> <p>Consultancy / Commissioned activities</p> <p>Other contributions (environment / department)</p>	<p>Please describe the assessment criteria that you consider to be the most central, when you participate in the appointment of candidates for a given vacancy (Associate professor? / Full professor?).</p> <p>What are the characteristics of the "employable researcher".</p> <p>Central criteria of the assessment committees?</p>

Bibliometric measures	Purposes and objectives? Organizational guidelines/ requirements/ documents? Parameters? Publication counts? Journal rankings? / Impact factors?/ Citations? Emergence of use? Top-down / bottom-up?	Please describe a typical example of how you (plural) use bibliometric measures in management activities at this department? (Why?) Would you please describe a recent example, where you (plural) used bibliometric measures in the assessment of an individual researcher's work/performance?
Use?		
What does a good publication profile look like? Transparency in recruitment and selection procedures		Please try to describe what a good publication profile typically looks like in the eyes of the assessment committee? Why exactly these criteria? Could you please try to describe how organizational demands of transparency and accountability influence the recruitment and selection procedures and practices in this department?
Gender	Composition of assessment committee? Institutional demands of research stays abroad? Vacancies without female applicants? Gender differences in publication profiles? Gaps in CVs?	As a final theme, I would like to touch upon the issue of gender and how it relates to some of the questions discussed in this interview. Could you please try to describe the role played by gender-related issues in: - Recruitment and selection processes and practices related to tenured positions at this department? - The use of scientific performance measures in the assessment of individual researchers?

I do not have any more questions. Do you have any additional perspectives or points before we end the interview?

Appendix 5: Invitational letter for interviews with department heads

Invitational emails for the interviews with Department heads (Translated).
(October 2013)

Dear XXXX

I am a PhD fellow at the Danish Centre for Studies in Research and Research Policy, Department of Political Science and Government, at Aarhus University. My PhD project focuses on "gender in academia", with a particular focus on similarities and differences in female and male researchers' career preferences, career paths and research interest. As part of my project I, among others, aim to investigate:

1. Procedures and practices related to the recruitment and promotion of scientific staff at Aarhus Universities' departments.
2. The use of and status given to bibliometric measures in the assessment of research performance in Aarhus Universities' departments.

I am currently conducting a number of interviews with department heads at Aarhus University, and it is due to your position as head of department at XXXX, that I contact you to ask whether you would be interested in participating in an interview. The interview will last around 45-60 minutes, and will focus on your experiences and views as a leader in regard to the abovementioned themes.

The interview could take place within the period XXXX to XXXX, for instance in your office, but I am, of course, very flexible with respect to both time and place. I sincerely hope that you would be interested in participating.

If you have any clarifying questions concerning the interview, my project or anything else, you are very welcome to contact me on mail (XXXX) or by phone (XXXX). In case I do not hear from you during the following two weeks, I will take the liberty to contact you by phone as a follow up to this mail.

Best regards

PhD fellow

Mathias Wullum Nielsen

Appendix 6: Interview guide used in the interviews with former Aarhusian postdoctoral researchers

Background questions:

1. Name?
2. Age?
3. Educational background?
4. Position at Aarhus University
5. Current work place and occupation?

Before the job change:

6. Can you briefly tell me a little about your career path at Aarhus University?
7. For how long were you employed at Aarhus University?
8. When did you leave your position at Aarhus University?
9. Which position did you hold, when you decided to leave the university?
10. Did you leave Aarhus University for your current job?
11. Did you apply for this job on own-initiative or did someone encourage (headhunt) you to apply for it?
12. What considerations did you make before resigning from your position at Aarhus University?

Motivations for leaving Aarhus University?

13. What was the primary reason for your decision to leave Aarhus University?
14. Did any other issues influence this decision?
15. What did you appreciate about your position at Aarhus University? What did you consider to be less attractive?
16. Do you think that Aarhus University was good enough as utilizing your competencies? Were you satisfied with the professional tasks of your job?
17. How was your relation with your colleagues at Aarhus University?
18. How would you describe your relationship with the management, when you worked at Aarhus University?
19. Did you feel that your colleagues and the management at Aarhus University recognized your work? How? / Why not?
20. Could anyone have done anything to keep you at the university/keep you from leaving the university? Who / What?

Your current job and future plans?

21. Could you briefly say a bit about your current job? What led you to apply for exactly this job? What did you consider to be attractive about it?

22. What does your future career plans look like?
23. [If leaving the research career for another type of job] Do you think that you at one point again would consider returning to a research position at a university? Would you consider Aarhus University as an option? Why?/Why not?

Finishing

24. Do you have anything else that you would like for us to talk about?

Appendix 7: Overview of relevant survey items from Survey Study 2



Indledning

Det følgende spørgeskema er anonymt og har til formål at undersøge AU-forskeres arbejdsvilkår og arbejdsliv samt forholdet mellem arbejds- og familieliv. Spørgeskemaet vil være inddelt i en række undertemaer. Flere af disse temaer vil blive introduceret med en kort indledende tekst, som har til formål at afgrænse og klargøre hensigten med temaets efterfølgende spørgsmål.

Betegnelsen *institut* benyttes i spørgeskemaet som et gennemgående paraplybegreb, der dækker over dit nærmeste institutionelle tilhørsforhold (eksempelvis institut, center eller andet relevant). Svarene vil desuden blive anonymiseret.

Forrige

Næste

AARHUS UNIVERSITET

1. Grundlæggende oplysninger

I det følgende beder vi dig udfylde nogle grundlæggende oplysninger om dig selv.

1.1 Køn

- Kvinde
 Mand

1.2 Alder

39

1.3 Civilstand

- Gift/samboende partner
 Ikke-samboende partner
 Single
 Andet

Forrige

Næste

1.4 Partners uddannelsesniveau

- Forsker
- Lang videregående uddannelse
- Mellemlang videregående uddannelse
- Kort videregående uddannelse
- Erhvervsfaglig uddannelse
- Gymnasial uddannelse
- Ingen
- Andet
- Ved ikke

1.5 Er din partner ansat ved AU?

- Ja
- Nej

1.6 Hvis ja, er din partner

- VIP ved AU?
- TAP ved AU?

Forrige

Næste



1.7 Har du hjemmeboende børn?

- Ja
- Nej

Forrige

Næste



1.8 Hvor mange hjemmeboende børn har du?

- 1
- 2
- 3
- 4 eller derover

1.9 Hvor gammel er dit yngste barn?

- 0-6 år
- 7-10 år
- 11-18 år
- Over 18 år

Forrige

Næste

1.10 Hvilket institut er du ansat under?

- Institut for Agroøkologi
- AU Herring
- Institut for Biomedicin
- Institut for Bioscience
- Center for Undervisningsudvikling og Digitale Medier
- Institut for Datalogi
- Institut for Erhvervs kommunikation
- Institut for Folkesundhed
- Institut for Fysik og Astronomi
- Institut for Fødevarer
- Institut for Geoscience
- Institut for Husdyrvidenskab
- Aarhus Universitet Ingeniørhøjskolen
- Institut for Ingeniørvidenskab
- Juridisk Institut
- Institut for Kemi
- Institut for Klinisk Medicin
- Institut for Kultur og Samfund
- Institut for Marketing og Organisation
- Institut for Matematik
- Institut for Miljøvidenskab
- Institut for Molekylærbiologi og Genetik
- Institut for Odontologi
- Psykologisk Institut
- Institut for Retsmedicin
- Institut for Statskundskab
- Institut for Uddannelse og Pædagogik (DPU)
- Institut for Æstetik og Kommunikation
- Institut for Økonomi
- Andet



1. 11 Hvad er din stilling?

- Professor/Professor MSO/Midlertidigt professorat
- Lektor/Seniorforsker
- Postdoc/Adjunkt/Forsker
- PhD-stipendiat
- Rådgiver
- Andet

1.12 Er din ansættelse fast eller midlertidig?

- Fast
- Midlertidig

1.13 Hvor mange år har du været ansat i din nuværende stilling?

Antal år

1.14 Hvor mange år har du været ansat ved instituttet?

1.15 Hvor mange timer bruger du i gennemsnit om ugen på arbejde?

Forrige

6. Ansættelsesvilkår

6.1 Oplever du, at AU understøtter dig i din karriereplanlægning?

- I høj grad
 I nogen grad
 I mindre grad
 Slet ikke
 Ved ikke

6.2 Føler du dig sikker i din ansættelse som forsker ved AU?

- I høj grad
 I nogen grad
 I mindre grad
 Slet ikke
 Ved ikke

6.3 Har dine nuværende ansættelsesvilkår givet anledning til overvejelser om at vælge forskerkarrieren fra?

- I høj grad
 I nogen grad
 I mindre grad
 Slet ikke
 Ved ikke

Førige

Næste



AARHUS UNIVERSITET

6.4 I hvor høj grad skyldes disse overvejelser

	I høj grad	I nogen grad	I mindre grad	Slet ikke	Ved ikke
Uklarhed omkring dine fremtidige karrieremuligheder ved AU?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usikkerhed i din ansættelse?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prioritering af din familie?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Førige

Næste



AARHUS UNIVERSITET

6.5 Ser du dig selv arbejde på AU om 5 år?

- Ja
 Nej
 Ved ikke

6.6 Hvis nej, hvorfor ikke?

|

Førige

Næste

7. Udlandsophold og forskermobilitet

International forskningserfaring betones i stigende grad som et vigtigt kriterie i rekrutteringen af VIF'ere ved AU.

7.1 Har kravet til Postdoc'ere om et længerevarende ophold ved en udenlandsk forskningsinstitution, som betingelse for en fastansættelse som seniorforsker/lektor, fået dig til at overveje at vælge en forskerkarriere ved Aarhus Universitet fra?

- I høj grad
 I nogen grad
 I mindre grad
 Slet ikke
 Ved ikke

Forrige

Næste

8. Karriereplanlægning

8.1 I hvilken grad er der hjælp at hente til karriereplanlægning

	I høj grad	I nogen grad	I mindre grad	Slet ikke	Ved ikke
På dit institut?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
På AU?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

8.2 Hvem henvender du dig til med spørgsmål om karriereplanlægning?

[Mine nærmeste kolleger]

Forrige

Næste

9. Samarbejdsrelationer ved dit institut

Følgende spørgsmål relaterer sig til de uformelle faglige samarbejdsrelationer ved dit institut.

9.1 Hvor ofte har du følt dig overset i følgende relevante faglige sammenhænge;

	Meget ofte	Ofte	En gang imellem	Sjældent	Aldrig	Ved ikke	Ikke relevant
Udarbejdelse af projektsøgninger?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sparring/diskussion omkring forskningsarbejde?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Andre typer af faglige diskussioner?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

9.2 I hvor høj grad oplever du, at dine kollegaer henvender sig til dig med faglige spørgsmål?

- I høj grad
 I nogen grad
 I mindre grad
 Slet ikke
 Ved ikke

9.2 I hvor høj grad oplever du, at dine kollegaer henvender sig til dig med faglige spørgsmål?

- I høj grad
 I nogen grad
 I mindre grad
 Slet ikke
 Ved ikke

9.3 I hvor høj grad sparrer du med dine kollegaer omkring dit forskningsarbejde?

- I høj grad
 I nogen grad
 I mindre grad
 Slet ikke
 Ved ikke

9.4 Hvor enig er du i følgende udsagn:

"På mit institut er der god mulighed for faglig sparring med mere erfarne kollegaer?"

- Helt enig
 Delvist enig
 Hverken enig eller uenig
 Delvist uenig
 Helt uenig
 Ved ikke

Forrige

Næste

10. Sociale relationer

10.1 Hvor enig er du i følgende udsagn:
"Jeg føler mig socialt involveret på mit institut"?

- Helt enig
- Delvist enig
- Hverken enig eller uenig
- Delvist uenig
- Helt uenig
- Ved ikke

10.2 Indgår du, uden for instituttet, i et socialt fællesskab med dine kollegaer?

- I høj grad
- I nogen grad
- I mindre grad
- Slet ikke
- Ved ikke

Forrige

Næste

Tak for din deltagelse i undersøgelsen!
Hvis du har spørgsmål eller kommentarer skriv gerne en e-mail til; survey@cfa.au.dk

Forrige

Afslut

Appendix 8: Invitational and follow up email for Survey Study 2 (in Danish)

Invitational email

Kære XX

Dansk Center for Forskningsanalyse, CFA, på Aarhus Universitet er ved at undersøge arbejdsvilkår, arbejdsliv og forholdet mellem arbejds- og familieliv for forskningsansatte ved Aarhus Universitet. Dette er en væsentlig del af dataindsamlingen, som skal bruges til analyser og anbefalinger for Aarhus Universitet i forskningsprojektet STAGES, som er finansieret under EUs 7. rammeprogram.

Vi vil derfor gerne bede om din hjælp til at få et dækkende og retvisende billede af forholdene, som de opleves på Aarhus Universitet indenfor undersøgelsens temaer. Vi håber meget, at du vil bruge cirka 10 minutter på at besvare vores elektroniske spørgeskema, som du kan tilgå via linket herunder:

<https://www.surveyxact.dk/answer?key=39E3R5CYY7Y6>

Vi håber på din hjælp og er meget taknemlige, hvis du vil hjælpe os. På forhånd tak. Vi ser frem til at modtage din besvarelse.

Med venlig hilsen

Evanthia K. Schmidt, Ebbe Krogh Graversen, Mathias Wullum Nielsen og Lea M. Grønfeldt

Hvis du har spørgsmål eller kommentarer, er du velkommen til at henvende dig ved at besvare denne email.

Follow up email for the survey study (In Danish):

Kære XXXX

Vi henvendte os til dig for nogle uger siden med en invitation til at deltage i en undersøgelse af forskningsansattes arbejdsliv ved Aarhus Universitet.

Da vi ikke har registreret din besvarelse, henvender vi os hermed igen for at minde dig om, at du stadig kan nå at deltage, og at vi meget gerne vil modtage din besvarelse af spørgeskemaet.

Hvis du allerede har besvaret spørgeskemaet, beder vi dig se bort fra dette brev.

Dansk Center for Forskningsanalyse, CFA, på Aarhus Universitet er ved at undersøge arbejdsvilkår, arbejdsliv og forholdet mellem arbejds- og familieliv for forskningsansatte ved Aarhus Universitet. Dette er en væsentlig del af dataindsamlingen som skal bruges til analyser og anbefalinger for Aarhus Universitet i forskningsprojektet STAGES, som er finansieret under EUs 7. rammeprogram.

Vi vil derfor gerne bede om din hjælp til at få et dækkende og retvisende billede af forholdene som de opleves på Aarhus Universitet indenfor undersøgelsens temaer. Vi håber meget, at du vil bruge cirka 10 minutter på at besvare vores elektroniske spørgeskema, som du kan tilgå via linket herunder (web-adressen kan også kopieres over i din browser).

<https://www.surveyxact.dk/answer?key=9C8F57KD27Q2>

Vi håber på din hjælp og er meget taknemlige, hvis du vil hjælpe os. På forhånd tak, vi ser frem til at modtage din besvarelse.

Appendix 9: Written outline of background document analysis presented in Paper 2

This document summarizes the national legislative frameworks and policy initiatives, which I refer to in the article *Scandinavian approaches to gender equality in academia: A comparative study*. Additionally it offers a brief introduction to each of the six universities' strategies for governing and promoting issues of gender equality as well as the related organizational interventions.

1. Scandinavian legislations and policies on Gender Equality in academia

Denmark

In the Danish Gender Equality Act (2000), the mainstreaming obligations of public organizations are stipulated as follows: "Public authorities shall within their respective areas of responsibility seek to promote gender equality and incorporate gender equality in all planning and administration" (part 4). The implementation strategy of this provision, however, is unclear, and there are no binding sanctions if public organizations fail to fulfil their responsibilities (Borchorst 2008, p. 12; Emerek & Jørgensen 2011, p. 25). One of the initiatives already implemented is a measuring tool obligating state institutions and state-owned undertakings with more than 50 employees to report their status on gender equality every second year. This obligation was facilitated to collect information on institutional gender equality initiatives and monitor gender distributions across job categories (Danish Gender Equality Act 2000, Part 5.1). Aside from this, a statutory instrument introduces a legal opportunity for employers, authorities and organizations to:

... take experimental- and development initiatives for a period of up to 2 years to attract the under-represented sex. It is lawful to establish courses or training activities of up to 6 months duration if the aim is to promote gender equality in employment, training and management. In advertisements it is lawful to en-

courage the under-represented sex to apply for employment or training (European Commission, 2005).

Even though this instrument is rarely used, there are some recent examples relevant to this study. The Universities of Copenhagen and Aarhus have been taking positive actions to promote the representation of female researchers in associate and full professorships (I return to this below).

In the period 2008-2009 the Danish Council for Independent Research allocated an amount of 13.9 million euros (104 million DKK) specifically directed at female research managers. These resources were granted for talented female senior researchers in order to support their qualification for professorship positions (Danish Ministry of Science, 2009). In 2010, the council established another research programme under the name "Sapere Aude". The main objective of this programme has been to encourage and retain the most talented young researchers (men and women) in the fields of academia. However, in the first years of this research programme very few female researchers applied for grants, and in order to overcome this problem, women are now specifically encouraged applying for funding via this programme. Since 2008, the Danish council for strategic research has also committed the steering groups of the strategic research centers and strategic research alliances applying for research funding to include representatives of both sexes (Bergman, 2013).

Norway

The Norwegian Higher Education Act from 2000 stipulates that "Universities and university colleges shall make active, targeted and systematic efforts to ensure gender equality in all categories of employment at the institution" (Norwegian Act relating to University and University Colleges 2005, Section 6-2). This provision binds the Norwegian universities to develop institutional gender equality action plans, while a related stipulation in the Norwegian Gender Equality Act obligates the institutions to report recent gender equality activities as well as gender balance numbers on an annual basis (Act relating to Gender Equality 2005, section 1a). The Norwegian "Ombud" for equality and discrimination (henceforth LDO) is responsible for ensuring that the public universities comply with these stipulations. More specifically, LDO has the option of monitoring the annual reports, and if the content of a report is deficient, it may ultimately lead to the imposition of a fine (NOU 2011, 47). It is, however, relevant to note that LDO is not empowered to sanction any breach of the provision binding universities to develop action plans (NOU 2011, p. 47).

A national Committee for gender equality in science with an annual budget of approximately 400,000 euros (3 million NOK), was established in 2004 to support research institutions in the implementation and promotion of gender equality initiatives and activities. Additionally, the Ministry of education and research has launched an incentive system aiming to promote the share of women researchers in senior lecturer, associate- and full professor positions within the academic fields of math, science and technology (NOU 2011, p. 73).¹ This initiative was introduced on a three year trial basis (2010-2012) and involved an annual budget of approximately 1,330,000 euros (10 million NOK) (Aukland, 2012). In 2007-2011 the Ministry of Education and Research also introduced an annual Gender Equality award aimed at encouraging research and higher education institutions to prioritize and strengthen their work on gender equality (Gender Balance in Research 2012). The Gender Equality award included a grant of approximately 266,600 euros (2 million NOK) for the Norwegian university making the biggest effort to promote gender balance in research.

Additionally, The Research Council of Norway recently launched the so-called *BALANSE programme*. The initiative aims to enhance the proportion of women in research management positions and involves an expected budget framework of approximately 7.8 million euros (58 million NOK) for the period 2013-2017 (Norwegian Research Council 2013/2013b). The Research Council of Norway has also initiated a number of structural change initiatives aimed at increasing the share of grants allocated for female researchers. These initiatives, among others, include the establishment of more gender balanced evaluation committees and the introduction of moderate gender quotas in the allocation of research grants. According to the council, the initiatives have been very successful leading to an increased share of female applicants as well as grant receivers (Norwegian Research Council, 2009).

As stipulated in the first paragraph of section three in the Norwegian Gender Equality Act "The Act shall promote gender equality and aims in particular at improving the position of women". This section opens an opportunity for universities to promote affirmative action in favour of female researchers. The provision, however, is to be interpreted in accordance with the directives of the European Commission² curtailing the application of affirmative action to include situations where two applicants are equally qualified for a

¹ This incentive system currently includes nine research institutions.

² This directive is included in the European Economic Area Agreement (EEA) through its article 70 and therefore includes Norway.

position (European Commission 2012, article 2 [4]). In the period 1998-2004, the Norwegian government, on the basis of this provision, earmarked eighty post-doctoral research grants and 20 professorships exclusively for female researchers within male-dominated research disciplines. These initiatives led to a legal controversy with The European Free Trade Associations (EFTA) survey authority (Schutter 2010, p. 669), and in January 2003 the EFTA court ruled that Norwegian Universities were no longer allowed to earmark professorships exclusively for women. In the wake of this verdict, affirmative action and economic incentives have been reserved to include recruitment procedures that are in accordance with the EU directives outlined above.

Another provision in the Higher education act stipulates that “If one sex is clearly under-represented in the category of post in the subject area in question, applications from members of that sex shall be specifically invited” (Act related to University and University Colleges Section 6-3). The act also prescribes that both sexes shall be represented in expert assessment committees, and commits universities to take gender equality into consideration when appointments for research positions are made.

Sweden

In the Swedish Higher Education Act, the institutional mainstreaming obligation is stipulated as follows: “In the activity of universities, equality between women and men shall always be taken into account and promoted” (Swedish Higher Education Act, 2011), and in accordance with the Discrimination Act from 2008, Universities and other educational institutions “shall actively work to promote equal rights and prevent and interfere harassment related to gender (...)” (Swedish Discrimination Act 2008, Chapter 2). More specifically, all institutions with at least 25 employees are obligated to review gender pay differentials and develop specified gender equality action plans including practical measures promoting equality and preventing harassment every third year. The national Discrimination Ombudsman is responsible for ensuring that the universities comply with these stipulations and succeed in developing systematic and targeted action plans. If this is not the case, fines can be imposed on the employer (DO, 2012).

In addition to this, the Discrimination Act opens an opportunity for positive action “if the treatment of the person concerned is part of an effort to promote equality in working life (...)”. Much like the case of Norway, the Swedish Government has been embroiled in a legal controversy with the European Court of Justice over initiatives of affirmative action. In the year 1995, 32 full professorships and 73 postdoctoral fellowships were created by the Swedish

government to boost the share of women in the upper ranks of academia. Male researchers were allowed to apply for these positions but could only be employed if no suitable female candidate was available. This measure was turned down by the European Supreme court in 2000 on the basis of the so called “Abrahamsson case” (Numhauser, 2001; CORDIS, 2001).

A glance over the most recent Swedish higher education policy initiatives also reveals that the Swedish Government has been very active; especially during the former electoral period (2006-2010) (Nyberg, 2010). In February 2007, the Swedish Government appointed a temporary committee (2007-2010) to promote gender equality in higher education. The committee had a budget framework of approximately 7.2 million euros (60 million SEK) at its disposal for the purpose of supporting organizational gender equality initiatives and activities (Swedish Ministry of Integration and Gender Equality, 2009). In addition to this, the Swedish Innovation Agency has earmarked a budget of 35 million³ euros (300 million SEK) for the period 2007-2014 to an implementation programme promoting female researchers’ mobility and qualification routes in Science and Research (Vinnova, 2007). The Swedish Research Council has also initiated new measures aimed at enhancing the gender balance in the allocation of research grants. Among others, these measures include an establishment of more gender balanced evaluation committees, a continuous monitoring of gender distributions among research applicants, and a number of potential initiatives aimed at recruiting research applicants of the underrepresented sex.

2. Gender distributions at the six universities

Table A.9.1 below provides an overview of the women currently employed in research at the six Scandinavian universities. It is relevant to note that the Norwegian and Swedish research systems include a number of academic positions that do not comply exactly with the international position categories outlined in Table A.9.1. The Swedish research system, for instance, includes the position categories “docent” and “amanuens”. These employment titles are used for academic as well as administrative staff with a doctorate education. The translation of unclear academic position categories into international position categories has been done in correspondence with the local gender equality consultants of each university. However, this translation may represent a smaller degree of uncertainty in regard to the comparability

³ Including co-financing, the programme constitutes an impressive budget of approximately 60 million euros.

of the numbers. In addition, Copenhagen has estimated its gender distributions in full-time equivalents, while this is not the case for Aarhus, Bergen, Copenhagen, Lund and Uppsala. This difference may also represent a smaller degree of uncertainty.

Table A.9.1. Share of female research staff at the six Scandinavian Universities, 2012 (percent)

	Aarhus	Copenhagen	Bergen	Oslo	Uppsala	Lund
PhD	51	56	57	55	48	46
Post doc-level	43	45	55	47	44	49
Associate professors	31	34	39	43	40	40
Professors	15	21	24	27	24	23

3. Central and local approaches to gender equality

Denmark

Aarhus University’s main gender equality action plan is presented as an “inspirational catalogue” developed and written by an appointed “taskforce”. The overriding purpose of this document is to commit the local organizational entities (faculties and departments) to engage actively in gender equality issues. The action plan includes a few cross-university measures initiated at the central level of the organization, and on the fourth page of the document a reference is made to an agreement obligating the faculties to define targets for gender balance, and develop local action plans including specified declarations of intent, costs incurred and persons responsible. A search through the university website and sub-sites, however, reveals that no documents specifying the targets or measures of the main areas (faculties)⁴ are available. With the exception of an incentive programme offering financial support for academic environments promoting female researchers (this programme extends from 2010-2014 and involves a budget of approximately

⁴ This lack of faculty-level initiatives may be due to the recent comprehensive organizational transformation changing the university structure from nine faculties to four closely connected main areas. Obviously, this structural transformation has had some consequences for the gender equality activities taken at faculty and department level, as faculties have been merged, and new allocations of responsibility are therefore needed.

1.1 million euros, Aarhus University allocates no funding for activities initiated at the faculty or department level (Aarhus University, 2009).

The University of Copenhagen's main gender equality action plan (2009) mainly focuses on three comprehensive measures taken at the central level of the organization, while a supplemental statement developed by the university task force for gender equality outlines a larger catalogue of ideas directed at the faculties and departments. This document also offers suggestions for cross-university initiatives. Additionally, a formulation in the supplemental statement underlines that initiatives should be implemented at faculty and department level. The document states that "it is the remit of HR and Organizational Development to ensure that faculties and departments implement specific initiatives to fulfil the University's overall objective of more women in associate professorships and professorships" (University of Copenhagen, 2009). A formulation in the main gender equality action plan also underlines that initiatives should be implemented at faculty and department level (University of Copenhagen, 2009). The statement, however, does not include any further specifications on the responsibilities delegated to these entities. In the period 2008-2012 the university earmarked approximately 268,000 euros for faculty-based talent development-programmes. Moreover, a comprehensive amount of resources have been allocated for gender equality related activities initiated at the central level of the organization (University of Copenhagen, 2009). A search through the university website reveals that only two out of six faculties have developed specified up-to-date action plans. A 2011 evaluation report, however, reveals that local actions on gender equality have been initiated at all of the faculties (University of Copenhagen, 2011).

Sweden

Lund University's gender equality action plan is structured around a number of main action areas, which create the basis for systematized and strategic work at faculty and department level (Lund University, 2011). The university has also developed a supplemental document outlining specified examples on how to translate the general statements of the main action plan into specified actions and initiatives at department and faculty level (Lund University, 2010). As pointed out in Lund's pan-university action plan, the organizational work on gender equality "adheres to the university's decentralized model for decision making" (Lund University, 2011). Lund, in other words, does not allocate strategic resources for gender equality work at the decentralized levels of the organization. Instead, the university's policy framework

suggests that these investments should be integrated into the annual budgeting of the faculties and departments. However, a cross-university initiative including an overall amount of 4.5 million SEK (0.54 million euros) has recently been earmarked for co-financing visiting professors of the underrepresented gender (Lund University, 2013). Despite a 2011 organizational policy stipulation committing the university management to prepare specified annual statements concerning recent gender equality developments at faculty and department level, such documents are still absent (Lund University 2011).⁵ Yet, a search through the university's website reveals that specified and up-to-date action plans are available at all faculty websites and at a number of the department sub-sites.

The Uppsala GE action plan reveals one of the most extensive and systematized approaches found in the study (Uppsala 2011). The assigned responsibilities connected to the institutional targets and measures outlined in this document stand out quite distinctly, while a comprehensive annual report follows up on the activities initiated by the faculties and departments. This document, among others, follows up on the objectives and measures stated in the local action plans and include detailed descriptions of the gender equality related activities taken at faculty level (e.g. Uppsala 2012). In 2011, Uppsala distributed approximately 21,600 euros for local initiatives promoting gender equality and gender awareness,⁶ and in the period 2008-2011, an annual amount of approximately 540,000 euros was allocated as direct financial support for female researchers in academic environments with a skewed gender distribution (Uppsala 2012). A search through the university's website reveals that specified and up-to-date action plans are available at most of the faculty websites as well as at a number of the department sub-sites.

Norway

At the Universities of Oslo and Bergen the faculties are also obligated to develop local gender equality action plans containing measures and recruitment objectives based on local challenges. Much like Uppsala, the Oslo's gender equality policy framework indicates an extensive and systematized organizational approach to the topic. The pan-university action plan distinguishes between central and local actions and includes specified targets re-

⁵ It is however relevant to note that the development of such documents, according to the university's gender equality consultant, will be initiated in 2013.

⁶ For instance, the university has granted funds for the development of a teaching material on gender awareness in research supervision (Uppsala, 2011b).

lated to both levels of action (Oslo, 2010). As in the case of Uppsala, the university prepares annual reports on gender equality issues including information about the most recent activities and developments at faculty level (e.g. University of Oslo, 2012). Bergen's gender equality plan revolves around a number of general organizational commitments and targets. At the same time, these commitments can be viewed as suggestions for institutional interventions at faculty and department level (Bergen, 2011). Bergen also prepares annual statements on the preceding years' work on gender equality.⁷ These statements, however, are less specified and do not include reflections on faculty level activities. A search through the university websites reveals that up-to-date faculty action plans are available for 6 out of 8 faculties at the University of Oslo, whereas this is only the case for 3 out of Bergen's 6 faculties.

Both of the Norwegian universities have adopted a GE governance model combining a number of centralized interventions with a strategy that I have coined *incentive-based compliance*, encouraging the faculties to engage in local activities of this concern. More specifically, this means that the centralized funding of local university initiatives requires a 50% faculty co-financing. In this sense, the local entities are encouraged to allocate their own funds for this purpose. In 2011, the University of Oslo allocated approximately 336,000 euros for local GE initiatives, while the University of Bergen allocated circa 450,000 euros in 2012. This means that the overall share of resources spent on local initiatives at these universities amounts to the double (University of Oslo, 2012).⁸

⁷ These statements are included in the annual report following up on the university's strategic work and accomplishments (University of Bergen, 2011).

⁸ The 2012 numbers are based on an email correspondence with the GE consultant of Bergen University.

4. Outlining institutional activities on gender equality⁹

Aarhus University

As mentioned already, the action plan of Aarhus University is presented as an *inspirational catalogue* including an agreement obligating the faculties to develop local action plans. However, a few concrete actions initiated at the centralized level of the organization are also included in the document. These initiatives aim at a) creating the basis for a more equal gender representation on councils, boards and committees, b) implementing a mentoring programme for both sexes, and c) creating a meal scheme enabling university staff to order and purchase food to take home after work (Aarhus University, 2009).

Additionally, the university, in 2010, initiated an incentive programme offering financial support for academic environments promoting female researchers. This programme included an advertisement of ten new associate professorships and temporary professorships. More specifically, the university management covered expenditures related to one year of initial appointment as postdoctoral researcher for each of the ten associate professorships, and in addition to this offered a one-off payment of 100,000 DKK (13,408 euros), intended for release time for independent research activities. Each of the 10 permanent professorships came with two and a half year of financial support covering the departments' expenses for salaries (Aarhus University, 2010, p. 11).

University of Copenhagen

Copenhagen's gender equality statement is presented as a 3-point action plan (see outline of the action plan in Section 5, Table A.9.2). This means that the statement mainly focuses on three measures initiated at the central level of the organization. The 3-point plan extends over five years (2008-2013) and includes the following measures: a) financial incentives for faculties and departments hiring female senior researchers, b) internationalization scholarships directed at young female researchers and c) the establishment of talent and leadership development programmes directed at potential female

⁹ As mentioned earlier, most of the pan-university action plans offer a comprehensive number of suggestions for activities and interventions at the decentralized levels of the organizations (see Section 5, Tables A.9.2-A.9.7). However, this presentation limits its focus the most central pan-university gender equality interventions.

candidates for positions as dean, head of faculty or head of department. Additionally, the university has developed an interdisciplinary mentoring programme for young female researchers (University of Copenhagen, 2008).

The University of Copenhagen's incentive programme is built around a "reward principle" releasing extra professorships (woman or man) for faculties appointing female professors. Moreover, the university has set up a central bonus pool offering additional rewards for each of the faculties increasing the ratio of newly hired female professors by 5 percentage points compared to the year before the initiation of the 3-point plan. This bonus reward includes an amount of 3 million DKK (402,268 euros) for the Life Sciences, Health and Science, 2 million DKK (268,179 euros) for the Humanities and Social Sciences, and 1 million DKK (134,089 euros) for Theology, Pharmaceutical sciences and Law.

The University of Copenhagen has also allocated an annual amount of approximately 12 million DKK (1,609,075 euros) for the establishment of 16 internationalization scholarships directed at female post docs, assistant professors and associate professors. A cross-university development pool of 2 million DKK (268,179 euros) has also been allocated for financing local talent development programmes for female researchers (University of Copenhagen, 2009).

Lund University

As outlined in Table 3 (Section 5), Lund University's gender equality action plan is structured around a number of main action areas which create the basis for systematized and strategic work at faculty and department level. Moreover, the university has developed a supplemental document outlining specified examples on how to translate the general statements of the main action plan into specified actions and initiatives at department and faculty level (Lund University, 2010). In opposition to the rest of the universities, Lund does not allocate strategic resources or funding for gender equality work at faculty and department level. As emphasized in the supplemental document mentioned above, these investments should be integrated into the annual budgeting of the faculties and departments. The faculty of science at Lund University has, for instance, introduced a local incentive programme including a 100% financial aid for departments and centers hiring female professors. A recent cross-university initiative including an overall amount of 4.5 million SEK (0.54 million euros) has also been earmarked for (co-)financing visiting professors of the underrepresented gender

Gender awareness in teaching and leadership

An interesting feature of Lund's work on gender equality concerns the focus on gender awareness raising initiatives. On page three in the gender equality action plan it is stated, that "(...) gender perspectives and gender awareness in teaching and learning will have a prominent place in the qualifying training (...) at Lund University", and in a related document specifying the details of Lund's gender awareness initiatives it is stated that "[a] gender perspective shall illuminate how social factors contribute to create unequal conditions for women and men" (Lund University, 2007) (my translation). In other terms, Lund expands the usual approaches to gender equality by combining specified organizational interventions related to matters such as recruitment and leadership with a long-range aim of creating more gender-sensitive and inclusive environments through specified teaching and learning approaches.

The leadership programme "AKKA" (Academic Women's Responsibility) represents another pivotal pan-university initiative related to the long-range aim of creating more gender-sensitive and inclusive environments. This programme aims to increase postdoctoral researchers' knowledge on academic leadership. The programme includes an integrated perspective on research management focusing attention to the different conditions and opportunities characterising male and female researchers' work-life and career paths at Lund University. The AKKA initiative started out as a women-only programme with a capacity of 30 participants per year. However, in the latest phase of the programme, male researchers have also been allowed to participate (Lund University, 2011b).

Uppsala University

As outlined in Table 4 (Section 5), Uppsala's work on gender equality constitutes one of the most extensive and systematized approaches found in this study. The assigned responsibilities connected to the institutional targets and measures presented in the gender equality plan stand out quite distinctly, while a comprehensive annual report follows up on the activities initiated by centers, faculties and department and in this sense serves to document and monitor the ongoing efforts to promote gender equality within the organization. One might suggest that the clear and systematized structure of Uppsala's work to promote gender equality indicates that a high degree of direct responsibility is delegated to the local entities. This assertion is also consistent with the concrete faculty activities outlined in the comprehensive annual reports.

In 2011, Uppsala distributed approximately 180,000 SEK (21,640 euros) for local initiatives promoting gender equality and gender awareness. The university, for instance, granted funds for the development of a cross-university teaching material on gender awareness in research supervision (Uppsala, 2011b). In the period 2008-2011, an annual amount of 4.5 million SEK (541,000 euros) was also allocated as direct financial support for female researchers in academic environments with a skewed gender balance. These resources were, among others, spent on leadership programmes for women, and financial incentives encouraging faculties to hire female senior researchers. In addition, female associate professors were given financial support for further qualification, and women undertaking research management tasks were offered release time for research (Uppsala University, 2012)

Uppsala has also developed a web-database providing indicators on key gender topics. The main purpose of the database is to offer information on organizational statistics in a gender perspective. The gender equality indicators are available to all employees and students as a self-assessment tool highlighting the cross-university as well as local gender distributions (Uppsala University, 2012).

University of Bergen

Bergen's gender equality work can be divided into three main areas of action (for an outline of the action plan see Table 4, Section 5), a) recruitment of permanent female research personnel, b) integration of the gender perspective into all management activities, and c) a more gender balanced distribution of research funds.

According to the latest report documenting Bergen's annual activities and achievements (Bergen, 2012) 4.5 million NOK (604,368 euros) have been allocated for various types of institutional gender equality initiatives in 2011.¹⁰ Centralized funding for local initiatives requires a faculty co-financing of 50%, and in this sense, the local entities have also been encouraged to allocate their own funds for this purpose.

¹⁰ The numbers outlined in Table A.1.1. (Appendix 1) in the article *Scandinavian approaches to gender equality in academia: A comparative study* refers to the Bergen's allocation of funds for gender equality activities in 2012. According to the university's gender equality consultant, Bergen allocated 0.55 million euros for centralised activities and 0.45 million for faculty activities in 2012. This presentation will focus on the activities taken at Bergen up to and including the year 2011.

Allocation of funds

As in the case of the University of Uppsala, Bergen has implemented a number of initiatives which aim at qualifying female researchers for positions as full professor. These initiatives include allocation of funds for release time from teaching and administrative responsibilities and financial recovering of travel expenses. Moreover, the university has initiated a career development programme directed at female researchers.

Changing recruitment practices

In the period 2007-2009, the Bergen also allocated incentive funds covering 50% of the first year expenses when faculties with less than 40% female researchers appointed women for positions as part time or temporary professors. In addition to this, the departments received an amount of 100,000 NOK (13,430 euros) in financial support each time a women was hired for a senior research position (University of Bergen, 2007). The current gender equality action plan also urges the academic environments with low shares of female researchers (40% or less) to advertise academic positions as associate professorships rather than full professorships in order to ensure the widest possible range of female applicants. An interesting feature of Bergen's recruitment practice also concerns the use of "moderate gender quotas". On the university website it is stated, that employees shall use moderate gender quotas when choosing applicants for research positions announced in academic fields with a skewed gender distribution (40% women or less).¹¹ Additionally, the university commits faculties with a skewed gender balance to use "search committees" in order to recruit relevant female applicants when permanent academic positions are announced.

University of Oslo

As outlined in Table 6 (Section 5), the University of Oslo has developed a comprehensive action plan including two main action areas directed at enhancing gender equality among research staff. These main actions areas aim to a) increase the share of women in academic positions, and b) make gender equality a clearer management priority. The Oslo action plan distinguishes between central and local actions and includes specified targets related to both levels of action. As mentioned earlier, the university prepares

¹¹ According to Bergen's gender equality consultant, moderate quotas are used 2-3 times a year.

annual reports outlining the recent year's gender equality activities as well as statistical developments in the gender distributions from PhD level to full professorship level.

Allocation of funds

According to the latest annual gender equality report (University of Oslo, 2012), the university has allocated 2.5 million NOK (335,760 euros) for local gender equality initiatives. As in the case of Bergen, Oslo's allocation model requires a faculty co-financing of 50%, which means that the overall amount of resources spent on local initiatives approximately amounts to the double. A big share of Oslo's centralized resources for gender equality has been spent on initiatives directed at qualifying female researchers for full professorships.¹² For instance, the university has allocated funds for release time, financial support for expenses related to travelling, and research assistance, while several of the local entities have established network related activities and mentoring schemes. The university has also allocated 1.5 million NOK (201,456 euros) for a financial incentive programme promoting female senior researchers within the academic areas of Science, Health and Technology (University of Oslo, 2012).

Changing recruitment practices

Similar to the University of Bergen, Oslo also urges academic environments to implement gender equality measures related to recruitment practices. Faculties with a skewed gender distribution are for instance recommended to advertise academic positions as associate professorships rather than full professorships, and a recent report evaluating the faculty practices shows that all of the faculties actually make use of this possibility (62% always, 29% often and 9% sometimes) (University of Oslo, 2013).

In the main action plan it is also stated, that "Position plans must be drawn until 2020 for announcements and recruitment to permanent academic positions, based on expected departures and the gender composition of academic environments, and the recruitment base" (University of Oslo 2010, p. 1). According to the above mentioned evaluation report, approximately 62% of the faculties are currently including a gender perspective when developing recruitment plans for the years to come.

¹² In 2011, 20 women researchers received a qualification grant at the University of Oslo.

The university also opens up the opportunity for faculties to use moderate gender quotas, and according to the annual gender equality report (2012), it is reasonable to assume that this measure is employed by several of the faculties. As in the case of Bergen University, Oslo also commits male dominated faculties to use search committees in order to recruit relevant female candidates when permanent academic positions are announced. According to the 2013 evaluation report, 53% of the university's decentralized entities make use of this possibility (University of Oslo, 2013).

5. Outline of institutional gender equality action plans

The tables below summarize the gender equality related activities and initiatives taken by the six universities. Most actions are presented in their original state; however a few descriptions are presented in a summarized form.

Table A.9.2. Aarhus University (2009-2015)

Size of Staff: 11,000

Enrolment: 40,000

Recommended initiatives (Local level)	<ul style="list-style-type: none"> - Flexible workplaces - making home office resources (computers, online access and remote network access available to staff) - Career development interviews for temporary positions - Coaching schemes (career consulting - both women and men). - Further education (project management etc. – both women and men). - Compensatory time (PhD supervision + post doc & Ass. Prof. supervision). - Collegial supervision - Assessment of academic production (taking time available into account – e.g. parental leave etc.). - Establishing child care facilities - Subsidy for taking spouse and children abroad - Management training (Including awareness on gender equality in general administrative and professional management training).
Initiatives already launched (Central level)	<p>Action plan</p> <ul style="list-style-type: none"> - More equal representation on councils, boards and committees - Mentoring scheme for both sexes - Meal scheme enabling university staff to order and purchase food to take home after work <p>Other</p> <ul style="list-style-type: none"> - Financial incentives for hiring female researchers 10 associate professorships: One year pay for each researcher + 100,000 DKK for release time for research. - 10 MSO-professorships (2.5 year pay per researcher)

Delegations at faculty level	An agreement made between the rectorate and the deans obligates the faculties to define targets for gender balance and develop local action plans including specified declarations of intent, descriptions of parties involved, costs incurred and persons responsible.
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Table A.9.3. University of Copenhagen (2009-2013)

Size of Staff: 7,000

Enrolment: 35,000

Recommended initiatives (Local level)	<ul style="list-style-type: none"> - Advertising strategic professorships - Advertising strategic associate professorships - Creating strategic assistant professorships without time limit - Special recruitment positions for women (in areas where women are underrepresented). - Career planning - Specific managerial talent programmes for women - Mentoring scheme - Department bonus for hiring female researchers - Retaining women ass. prof. and full prof. - Assessment of academic production (taking time available into account – eg. parental leave etc.). - Exemption from teaching (one full time research term). - Women on evaluation committees - Awareness of gender when establishing academic committees and research committees - Advertised research positions (non-advertised positions tend to go to men). - Gender awareness in appointment of doctorates, prizes etc. - HR delegated to ensure implementation of specific initiatives at faculty/department level - Work environment assessment (including gender perspective) - Maternity fund (for employees on external benefits)
(Cross-university level)	<ul style="list-style-type: none"> - Improved and updated statistics on gender distribution (in terms of applicants, appointments and salaries).
Launched initiatives (Central level)	<ul style="list-style-type: none"> - Financial incentives for departments/faculties (appointment of women professors by a faculty releases an extra professorship - for a period of five years). - Central bonus pool (faculties, increasing the ratio of newly appointed women professors by 5 percentage points in two years receive a DKK 1-3 million bonus).
Implemented over a five year horizon (2009-2012)	<ul style="list-style-type: none"> - 16 internationalisation scholarships are established, equivalent to approx. DKK 12 million p.a. for 5 years). - Interdisciplinary mentoring scheme - DKK 2 million development pool (for funding talent development of the underrepresented gender). - Leadership development programmes (for positions as head of department, dean, head of faculty).
Delegations at faculty level	Many of these initiatives need to be implemented at faculty and department level, and it is going to be a long haul. To speed up the process of increasing the number of women researchers, and on the basis of a catalogue of ideas presented by a specially appointed task force, the Rectorate has prepared the "3-point plan" described below as a supplement to the local initiatives.

Table A.9.4. University of Lund (2011-2012)

Size of Staff: 7,200

Enrolment: 47,000

Action areas	<ul style="list-style-type: none"> - Discrimination: All students and employees must be knowledgeable about the content of the action plans against discrimination as harassment and sexual harassment. - Equal treatment: Systematic and purposeful efforts to increase gender equality and diversity when recruiting and accepting students. - Recruitment and promotion: - Active recruitment and career planning contribute to diversity and an even gender distribution. Career planning and promotion, special training initiatives are implemented on an ongoing basis. - Leadership: - Continued investments will be made in leadership development, particularly for the underrepresented gender, as a means of achieving gender equality and diversity. - When appointing faculty management positions including executive committee appointments, consideration shall be given to gender equality and diversity. - Persons with leading positions will be educated on the Discrimination Act and its practice, as well as be given the opportunity to develop their expertise in terms of gender equality, diversity and equal treatment at Lund University. - Pay rates and other terms of employment: - Work to create equal terms of employment for the underrepresented gender will continue. This means that: <ul style="list-style-type: none"> - pay rates adhere to the university's pay policy programme - more women are to be employed as professor - short-term contracts among the underrepresented gender will be particularly monitored - staff appraisals will highlight issues of career planning - when planning and locating work, opportunities for combining parenthood and employment at Lund University will be given special consideration - Gender perspective and inter-sectional perspective: - Gender perspectives and gender awareness in teaching and learning will have a prominent place in the qualifying training in higher education teaching and learning at Lund University. <p>Targeted and systematic work towards gender equality, equal treatment and diversity is carried out at the university.</p>
Delegations at local levels	<p>Allocation of responsibility adheres to the university's decentralised model for decision-making and responsibility.</p> <p>Systematic and targeted work to achieve gender equality, equal treatment and diversity requires regular evaluation, follow-up and analysis of the set policy. The results will be presented annually in a gender equality declaration.</p>

Table A.9.5. University of Uppsala (2011-2012)

Size of Staff: 6,200

Enrolment: 23,000

Standing assignments (Central)	<p>Gender equality work at Uppsala is integrated into all university activities. The work primarily consists of standing assignments in various parts of the organization. The action plan includes a list of activities formulated as standing assignments to various entities and officers responsible. These assignments are formulated in general terms in order to be applicable to all operations. How the assignments have been made more concrete is to be accounted for in the annual follow-up.</p>
	<p>The Gender Equality Committee</p>
	<p>The Committee shall:</p>
	<ul style="list-style-type: none">- prepare gender equality matters in advance of meetings of the Vice Chancellor and of the University Board, etc..- take part in overarching cooperation regarding gender equality issues within and outside the University.- maintain contact with the Ministry, the National Agency for Higher Education, the Discrimination Ombudsman, and other universities/university colleges.- initiate its own evaluations of activities in accordance with the Gender Equality Plan and the demands of the government.- develop proposals for the University Board regarding the Gender Equality Plan, including annual follow-ups and revisions.- allocate economic grants for activities to promote gender equality within the University.- work to ensure that all employees have equal rights to competence development regardless of gender.- work to ensure that male and female employees receive equal pay for work of equal value.- work to ensure a work environment free of harassment, sexual harassment, and discrimination based on gender.- work to ensure a study environment in which students, regardless of gender, are offered good opportunities to pursue their studies and to encounter teachers of both genders at all levels.
	<p>Human Resources</p>
	<p>The Human Resources Division shall:</p>
	<ul style="list-style-type: none">- analyse regulations and practices regarding pay and other terms of employment applied within the University every three years, as well as pay differentials between women and men performing work to be regarded as the same or equivalent. The purpose of this survey is to discover, remedy, and prevent unfair differences between women and men.- draw up an action plan for equal pay in which it reports the results of the survey and analysis described in Sec. 10, and carry out and revise the pay analysis and pay survey under Ch. 3 Sec. 11.
	<p>Equalities office</p>
	<p>The Equalities Office shall:</p>
	<ul style="list-style-type: none">- offer competence-enhancing training in issues involving practical gender equality work- inform heads of departments/equivalent about this Gender Equality Plan- cooperate with University Administration in matters involving gender equality.- provide information, advice, competence development, and training in the field of gender equality for departments, faculties, and University leadership, as well as for students and employees.

	<p>Planning Division</p> <p>The Equalities Office shall:</p> <ul style="list-style-type: none"> - integrate gender equality work into the University's quality work. <p>Work and study conditions</p> <ul style="list-style-type: none"> - Opportunities to combine studies, research, and other work at the University with caring for children must be provided for both men and women. Special guidelines have been established for this purpose and are available in the Uppsala University Parental Policy. - Students at Uppsala University must encounter instruction from teachers/supervisors of both genders. This applies to entire study programmes and subject studies worth 30 credits. Departure from this regulation must be justified in writing in connection with the annual follow-up of the gender equality plan. <p>Leadership positions, investigative and decision-making bodies</p> <ul style="list-style-type: none"> - Nominations for investigative and decision-making bodies must be preceded by discussions about what competence and what qualifications are needed, how assignments can be distributed among more individuals, and what specific methods are to be applied to recruit more individuals of the underrepresented gender - Uppsala University must achieve gender balance in leading positions and in investigative and decision-making bodies. Those nominating individuals for boards must not designate which nominee(s) are to be regular and deputy members respectively. When only one individual is to be nominated for a board, one man and one woman must be put forward. Departure from these nominating regulations must be justified in writing. - In collegial elections via an assembly of electors, where the ultimate decision is to be made by a superior instance, the assembly of electors must be charged with nominating at least one candidate of each gender, in order to provide the deciding instance with latitude for selection. <p>Recruitment</p> <ul style="list-style-type: none"> - In each recruitment group/equivalent at the University, one member must be assigned special responsibility for monitoring gender equality matters. - Vacant positions must be described in gender-neutral terms. The announcement should be done in such a way as to attract a broad spectrum of applicants. Prospective applicants of the underrepresented gender should be actively sought. Each body at the University that submits proposals for employing a specific individual must provide a written account of how the gender equality aspect has been considered. - In employment procedures requiring expert panels, both women and men must be appointed as experts. Departure from these regulations must be justified in writing
<p>Standing assignments (Local)</p>	<p>Targets 2011-2012</p> <p>By the end of the period 2011-2012, the following high priority targets complementing the standing assignments must have been reached:</p> <p>Work and study conditions</p> <ul style="list-style-type: none"> - A template for drawing up gender equality plans at disciplinary domains/faculties/departments/equivalents must have been created and implemented in operational planning work. - Routines for economic support for faculties organizing formal networks, mentoring, or buddy systems for doctoral candidates who are women must have been created and implemented. - Evaluation of the University's gender equality indicators must have been carried out and possible improvements implemented. <p>Gender awareness in teaching</p> <ul style="list-style-type: none"> - A function as developer of gender awareness in teaching, with subject expertise in the various disciplinary domains, must have been created. Further development of the gender

perspective in the basic course in tertiary-level teaching, training for supervisors, and other aspects of activities at the Division for Development of Teaching and Learning must have been implemented.

Recruitment

- An impact analysis of the implementation of the employment form 'general fixed-term employment' from a gender equality perspective must have been completed.
- Training in equal recruitment primarily for members of recruitment groups and routines for raising the competence of members in recruitment groups must have been developed and implemented.
- Follow-up of measures taken in connection with the initiative (Power Pack for Gender Equality) must have been completed for possible revision and continuation.
- Measures from the report (Recruitment Processes at Uppsala University in a Gender Equality Perspective) and routines for competence-based recruitment must have been developed and implemented.

Measures 2011

- create templates for gender equality plans for disciplinary domains/faculties/departments/equivalents. Officer in charge: Director of Human Resources
- create routines for allocation of economic support for faculties that organize formal networks, mentoring, or buddy systems for doctoral candidates who are women. Officer in charge: Director of Human Resources.
- complete, evaluate, and arrange training about the University's web-based gender equality indicators. Officer in charge: Director of Human Resources
- create forms for and launch a Gender Helpdesk function sited at the Equalities Office and disseminate information about this function throughout the organization. Officer in charge: Director of Human Resources
- create a platform for the creation of and begin trial activities for a function as developer of gender awareness in teaching. Officer in charge: Director of Human Resources in collaboration with the Director of the Division for Development of Teaching and Learning
- devise forms for continuous exchange with the Division for Development of Teaching and Learning regarding further development of the gender perspective in the Division's programmes/course offerings and other activities. Officer in charge: Director of Human Resources in collaboration with the Director of the Division for Development of Teaching and Learning
- develop training in gender-balanced recruitment primarily for members of the University's recruitment groups and formulate measures based on the report (Recruitment Processes at Uppsala University in a Gender Equality Perspective). Officer in charge: Director of Human Resources in consultation with the heads of the disciplinary domain offices

Measures 2012

- perform follow-up of measures implemented in the Vice Chancellor's initiative (Power Pack for Gender Equality) for possible revision. Officer in charge: Director of Human Resources in consultation with the Planning Director and heads of the disciplinary domain offices
- implement template for gender equality plan in work with operational planning. Officer in charge: Director of Human Resources
- implement routines created for allocating economic support for faculties that organize formal networks, mentoring, or buddy systems for doctoral candidates who are women. Officer in charge: Director of Human Resources
- implement routines to ensure that the web-based gender equality indicators are used in University activities. Officer in charge: Director of Human Resources
- evaluate the first year of the Gender Helpdesk function. Officer in charge: Director of Human Resources
- evaluate trial activities for the function as developer of gender awareness in teaching. Officer in charge: Director of Human Resources in collaboration with the Director of the Division for Development of Teaching and Learning
- initiate measure for gender-balanced recruitment based on the report (Recruitment

Processes at Uppsala University) Officer in charge: Director of Human Resources in consultation with the heads of the disciplinary domain offices

Delegations at local levels	<p>Each department/equivalent must appoint a gender equality group and a gender equality officer.</p> <p>Each faculty and department/equivalent with at least 25 employees must draw up a gender equality plan every three years. It must be grounded in the pan-University plan, and, for departments, the corresponding faculty-level plan. The gender equality plan must be made available via the department/equivalent website.</p>
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Table A.9.6. University of Bergen (2011-2015)

Size of Staff: 3,000

Enrolment: 16,000

Central actions	<p>Main goal A: Recruitment of permanent female research personnel</p> <ul style="list-style-type: none"> - A clearer profiling of the university as an attractive work place for both sexes in all phases of life. - Allocate funds for release time / operating grants for female researchers with extraordinary responsibilities with regards to teaching, work in committees and supervision. - Making female professors role models and mentors. - Organize courses in promotion applications for female associate professors. - Mentoring scheme for female post docs - Quality assurance of announcement texts and appointment processes with regards to gender equality - In academic environments where women are underrepresented among research staff, academic positions must normally be announced as associate professorships rather than professorships to ensure a wide range of applicants and effective new hiring. - Organizing search committees in relation to announce permanent research positions and management positions in order to recruit female candidates. - Integrate considerations on gender equality into the strategic planning of research. <p>Main goal B: Recruitment of women for top management positions and integration of gender</p> <ul style="list-style-type: none"> - Promoting women's participation in management programmes directed at future research managers. - Integrate an introduction to the universities gender e - Ensure that new managers are familiarized with the institution's central and policies on gender equality - Integrate considerations on gender equality into all university strategies and plans. - Take maternal leave into account when assigning research awards as well as grants. <p>Main goal C: A more balanced distribution of research funds</p> <ul style="list-style-type: none"> - Devise an overview of female researchers' management of or participation in externally funded projects. - Organizing courses on application processes for research funding. It is the managers' responsibility that female researchers are encouraged to participate. - Developing statistics on gender equality with regards to research funding - Ensure that considerations on gender equality are integrated into the strategic planning of research. - Devise an overview of women's activities as supervisors or co-supervisors.
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Targets	<p>Main goal A</p> <p>At least 50% of all appointments for research positions at all faculties must be directed at women during the period (2011-2015).</p> <p>Main goal B</p> <p>Management at all levels must promote the objectives of the university's policy on gender equality.</p> <p>Main goal C: A more balanced distribution of research funds</p> <p>The University should work systematically to prevent an unequal distribution of research funds among male and female research staff.</p>
Delegations at faculty level	All faculties (as well as the museum and the university library) must develop local gender equality action plans on the basis of the university's main strategy on gender equality.

Table A.9.7. University of Oslo (2010-2012)

Size of Staff: 7,000

Enrolment: 27,000

Central actions	<p>Main goal A: Increasing the share of women in academic positions</p> <ul style="list-style-type: none"> - Profiling of the University as an attractive and female-friendly workplace. - Allocate funds for release time / operating grants for women who hold the position of associate professor. - Organize courses in promotion applications for female associate professors. - Execute a mentoring/coaching programme for female postdoctoral fellows and associate professors. - Organize a management development programme that focuses on increasing the recruitment of women to academic management positions. - Allocate central gender equality funds for locally-initiated recruitment measures directed towards academic staff. <p>Main goal B: Gender equality must be a clearer management priority</p> <ul style="list-style-type: none"> - Management development programme that provides academic and administrative management general competence on gender and equality. - Ensure that managers, employees and students are familiarized with the institution's central and local action plans, and measures for gender equality, and against sexual harassment. - Ensure that managers at all units that contribute to recruitment, selection, qualification assessment and appointment to academic positions exploit every opportunity for moderate quotas of qualified women, and that all deviations are reported. - Ensure that the gender equality perspective is a routine part of the writing of all strategy and planning documents at every level of the organization. - Ensure that gender equality is a set topic at strategic management meetings
Local actions	<p>Main goal A: Increasing the share of women in academic positions</p> <p>Local actions</p> <ul style="list-style-type: none"> - Position plans must be drawn until 2020 for announcements and recruitment to permanent academic positions, based on expected departures and the gender composition of academic environments, and the recruitment base. - In academic environments where women are underrepresented among research staff, academic positions must normally be announced as associate professorships rather than professorships to ensure a wide range of applicants and effective new hiring.

- Use "search committees" for all announcements of permanent academic positions and academic management positions to identify and recruit relevant national and international female applicants.
- Motivate and actively facilitate conditions for women holding the position of associate professor who want to qualify as a professor.
- Motivate and facilitate conditions for women who want to qualify for permanent positions.
- Ensure that the gender equality aspect is taken into consideration when making decisions regarding research strategy.

Main goal B: Gender equality must be a clearer management priority

- Execute an introductory programme for all new employees that includes the University's gender equality policy and goals.
- Use performance reviews actively also as a gender equality policy measure.
- Use leaving interviews to chart why female researchers leave the University.
- Offer newly-hired female associate professors and postdoctoral fellows a personal mentor / contact person.
- Assess local mentoring schemes for women in recruitment and associate professor positions.

Targets

Main goal A: Increasing the share of women in academic positions

- The share of women among permanent employees in academic positions must increase to 40 % during the period.
- The share of women among adjunct professors / associate professors in a part-time position (20 %) must increase.
- The share of women in academic management positions must increase.
- The share of women who qualify as a professor must increase.

Main goal B:

- The University's follow-up of its responsibility for gender equality will be charted in 2012.
- All units on the faculty level, museums and centres under the responsibility of the Board must have gender equality action plans, and annual reports must be submitted on work with gender equality.
- All central management courses must provide an introduction to gender equality policy and rules.

Delegations at faculty level

All units on the faculty level, museums and centres under the responsibility of the Board must have gender equality action plans, and annual reports must be submitted on work with gender equality.

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Appendix 10:

Gender composition at department level, Aarhus University

Table A.10.1. Female share of post docs, associate professorships and full professorships distributed on the departments of Arts (ultimo 2012), percent

Department	Full professors	Associate professors	Assistant professors
Culture and Society	27	32	41
Education	50	50	77
Aesthetics and Communication	35	52	

Source: Nielsen et al. (2013b).

Table A.10.2. Female share of post docs, associate professorships and full professorships distributed on the departments of Health (ultimo, 2012), percent

Department	Full professors	Associate professors	Assistant professors
Biomedicine	11	37	44
Public Health	20	46	80
Clinical Medicine	10	29	50
Odontology	40	47	50
Legal Medicine	67	33	0

Source: Nielsen et al. (2013b).

Table A.10.3. Female share of post docs, associate professorships and full professorships distributed on the research departments of the School of Business and Social Sciences (ultimo, 2012), percent

Department	Full professors	Associate professors	Assistant professors
AU Herning (interdisciplinary)	33	20	20
Law	26	42	67
Business Administration	7	30	44
Psychology	20	38	57
Political Science	17	17	50
Economics	11	24	20
Business Communication	50	69	78

Source: Nielsen et al. (2013b).

Table A.10.5. Female share of post docs, associate professorships and full professorships distributed on the Departments of Science and Technology (ultimo, 2012), percent

Department	Full professors	Associate professors	Assistant professors
Agroecology	XX*	29	43
Bioscience	4	18	43
Computer Science	6	12	9
Physics and Astronomy	20	3	28
Food Science	17	57	78
Geoscience	11	11	21
Animal Science	50	47	75
Engineering	0	30	33
Chemistry	9	8	9
Mathematics	14	4	8
Environmental Science	50	36	0
Molecular Biology	0	21	32

*Agroecology in 2013 held neither male nor female professors.

Source: Nielsen et al. (2013b).