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Ulla Weber (ed.)

Fundamental Questions

Gender Dimensions in Max Planck Research Projects

Nomos

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PREFACE:
Gender-Sensitive Research at the Max Planck Society

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Some people might assume that gender research, or gender-sensitive research, and basic research do not go together. A look inside the Max Planck Society over the last five to six years provides a different picture and reveals a close connection between both fields. One will find three levels in which gender research leads to crucial findings which can be used to optimize the framework conditions for research, the quality of research, and the impact it has on improving our society.

GENDER RESEARCH: BASIS FOR A SMART GENDER EQUALITY STRATEGY

Although it is well known, and almost everyone wants to do something about it, the scientific community still displays gender inequality in terms of personnel, which works to the detriment of female scientists and leads to a significant gender imbalance.[1] Research organizations, including the Max Planck Society, have been addressing female under-representation in the sciences since the early 1990s with a wide range of gender equality measures. Initially, these were mainly affirmative action measures for women, such as women-only positions, mentoring, training, and coaching —measures that were specifically aimed at "fixing" the women. All these

1 The structural discrimination of women in the labor market is not limited to science. The quantitative findings are numerous and sobering. Despite the continuous increase in the proportion of women in science as a whole, this figure drops dramatically the higher one climbs the career ladder, and the over-representation of male scientists in universities and research organizations is considerable. The A level professors and directors in German research organizations are 84 percent male, in universities 80 percent male. These figures are reflected in the number of publications and authorships, in the gender distribution among Nobel laureates, and even on Wikipedia women scientists are significantly less represented than their male colleagues.

tools and programs were based on the assumption that females are somehow unfit for a scientific profession—unrelated to scientific knowledge, but focusing on strategic competencies. Our research organization implemented a leadership program, a fund to finance scientific positions for females only, a mentoring network, and various soft skill seminars to empower female scientists. Then, some years ago, the Max Planck Society changed their gender equality strategy, based on research findings.

Three observations led to this. First, there was the change of societal thinking at that time. Since then, various scientific studies have demonstrated the influence of gender stereotypes on performance evaluation and personnel selection in science. Second, it became obvious that although measures designed to support individual women achieved some good results in terms of the individual development of these women, and increased the number of female scientists in the short term, they do not change circumstances and achieve gender balance in the long term. Third, the Max Planck Society had to recognize that affirmative action was no longer on the cards—neither for female scientists, nor for the institutes. There was a decrease in demand for programs that were exclusively available to female scientists.

Max Planck Management therefore commissioned external researchers to conduct two studies. The aim of the first study was to internationally benchmark the portfolio of Max Planck gender equality measures. Furthermore, it explored the question of what tools the "big players" in international research had already implemented.[2] The second project investigated the gender equality status quo at Max Planck by means of a survey that was conducted among junior researchers, the results of which indicated a greater need for action to achieve equal opportunities between men and women.[3]

Though starting from two completely different approaches, the results of both studies suggested the same—namely, a change of course for the

2 *Dethloff, Nina (2015). Chancengleichheit in der Max-PIanck-Gesellschaft. Vergleich mit ausgewählten internationalen Forschungseinrichtungen. Internal report commissioned by the Max Planck Society.*

3 *Fraunhofer Gesellschaft (Martina Schraudner et al.) 2014.* Chancengleichheit und Nachwuchsförderung in der Max-Planck-Gesellschaft. Ergebnisse quantitativer und qualitativer Befragungen unter Nachwuchswissenschaftlerinnen und Nachwuchswissenschaftlern. More than one thousand Max Planck junior scientists participated in an online survey. The investigation was supplemented by interviews with a number of Max Planck directors and scientists who had left the Max Planck Society.

Max Planck gender equality strategy whereby the Max Planck Society should focus less on the individual, and more on the cultural characteristics of an organization. The findings revealed that the scientific community still displays gender bias when it comes to recruitment processes and performance evaluation, which disadvantage female scientists. Once more, the findings draw our attention to the fact that a sustainable gender balance at all scientific career levels will not be achieved as long as society and decision makers consider women less fit for science than men.

In order to overcome this issue, both researchers recommended not only supporting female scientists through financial and training measures, but also by using additional approaches to increase the objectivity of important career procedures. One proposed solution was the roll-out of comprehensive gender awareness training for decision makers and co-workers. A second promising instrument was the use of "behavior design". Instead of de-biasing people's attitudes, this instrument aims to decouple personal attitudes from organizational structures and procedures.[4]

Specialist knowledge is vital for the successful implementation of all these approaches. Which stereotypes are the ones that hinder the career development of women scientists? How do they ingrain themselves into the structures and procedures of the scientific community? Which measures are suitable for overcoming blind spots and discrimination? Which measures are actually counterproductive and tend to produce and reinforce stereotypes? What standards must procedures and processes meet to be immune to such distortions? The more we know about the influence of stereotyping in science, the faster we can know how to dispel traditional myths that exclude certain people and groups. To obtain such data, the Max Planck Society has been involved in various research projects. These include "Neue Wissenschaftskarrieren" and "FlexiShip" at the national level, and "GENERA" and "LeTSGEPs" at the European level.[5]

4 *Bohnet*, 2016.

5 Neue Wissenschaftskarrieren BMBF-Projekt (Programm Frauen an die Spitze) 2013-2015, https://www.gender-diversity.tu-berlin.de/gdo/projekte/abgeschlossene_projekte/wissenschaftskarrieren; Flexship 2015-2016, Projekt der EAF Berlin, https://www.eaf-berlin.de/projekt/flexibel-arbeiten-fuehrung/; GENERA - Gender Equality Network in the European Research Area 2015-2018 funded by the European Commission (Horizon 2020), genera-project.com; LeTSGEPs - Leading Towards Sustainable Gender Equality Plans in research performing organizations—funded by the European Commission (Horizon 2020) 2020-2024, https://letsgeps.eu/

Based on such benchmarks, and by comparing our own strategy with those of other national and international scientific institutions, the research society has been able to reflect on its own status and employ tailor-made measures and programs that are customized to Max Planck's professional and organizational culture. A perfect match is crucial for the success of the tools being used. However, research can do far more than just provide evidence-based measures to improve the science system.

IMPROVING RESEARCH BY INTEGRATING GENDER ASPECTS

Within engineering and applied science, one can find numerous examples of the need to integrate a gender dimension into different research designs. For example, research on the risks of osteoporosis in men has long been neglected. It is now known that about one third of men are affected and require effective therapies. Another breakthrough was the recognition that crash test dummies, designed according to male body models, do not adequately represent injury risks for females. On the other hand, a few years ago, research was able to show that the essential factor for an appropriate model of a knee implant has less to do with gender, as was long assumed, and more to do with the characteristics of height, ethnicity, and body composition. Impressive examples of the complexity of integrating gender aspects into technical and scientific developments can also be found at international and intercultural level. In these settings, it becomes clear how gender roles and gender-specific attributions may change the link with other culture-set categories. For example, the sustainable improvement of water infrastructure in some African countries can only be achieved by taking into account the role of the women who are responsible for fetching water there.[6]

As we have learned, integrating a gender dimension into applied science has improved, and will continue to improve, the well-being of societies world-wide enormously. Of course, the quality of applied science depends on the quality of basic research, because the former benefits from the findings of the latter. Conversely, almost every finding in basic research has implications for applied science. Therefore, it is crucial to understand the

6 More detailed information about these findings, and more examples for the successful integration of the gender dimension into science, can be found at the Stanford Website "Gendered Innovations in Science, Health & Medicine, Environment, and Engineering" at http://genderedinnovations.stanford.edu/. Last accessed: June 18, 2020.

impact of gender aspects on all research fields. Basic research can help uncover the "gender data gap"[7] which has to be closed in order to develop gender-equitable technology, medical treatment procedures and environmental solutions. Needless to say, the quality of scientific findings increases when a multitude of perspectives and approaches are taken into account.

With reference to this insight, the German Research Society (DFG) recently embedded gender and diversity dimensions into its "Guidelines for Ensuring Good Scientific Practice". They added a section on the relevance of gender and diversity to the funding application guidelines. In the future, applicants need to indicate whether, and to what extent, gender or other personal and social characteristics are relevant to methods, work programs and objectives of a research project. This information is required with respect to the scientists involved in the project, project participants, any persons affected by the research results and all other aspects.

FUNDAMENTAL QUESTIONS. GENDER DIMENSIONS IN MAX PLANCK RESEARCH PROJECTS

This book presents a selection of gender-sensitive research at the Max Planck Society—a selection that reflects the diversity of the Max Planck Institutes. The spectrum of contributions compiled for this anthology is broad. It contains a wide variety of approaches, topics, issues and methodological procedures. Some chapters deal with gender-specific research issues and some integrate gender equality aspects into certain research questions. Others examine the influence of gender aspects on research questions and results (Gendered Innovations). There are chapters which discuss gender participation in science, and chapters that reflect a gender-sensitive and gender-political research perspective. Not only do these chapters cover a broad range of topics, they also come from a wide variety of research fields. Most of the contributions come from the humanities, including law, art history, and the history of science. However, there is also an article on neuroscience and another on computer science.

Isabel Valera's contribution (Max Planck Institute for Intelligent Systems) deals with the highly charged topic of discrimination in algorithmic decision-making. Given that automated and data-driven decision-making processes are becoming more and more prevalent (spam filtering, product

7 *Criado-Perez,* 2019.

personalization, pre-trial risk assessment, mortgage approvals, etc.), the researchers around Isabel Valera are asking for tools and methods to reduce discrimination towards people from certain demographic groups (e.g., gender) and the impact of stereotypes within algorithmic decision-making. They are developing new definitions of what "fairness" means and are helping with the development of new algorithmic solutions by developing standards for the design of fair and differentiating classifiers. Julia Sacher and Rachel Zsido (Max Planck Institute for Human Cognitive and Brain Sciences) highlight two areas where gender has not been taken into account in neuroscience and present a strong case for this to be addressed immediately. Many basic and clinical neuroscience studies do not include equal numbers of females in their samples, and even fewer present a sex-specific analysis of their data. The strategies presented by Sacher and Zsido open up promising new perspectives on the diversity of human cognition and brain plasticity.

The Humans Sciences Section of the Max Planck Society is the source of a very different topic. Lisa Hanstein (Kunsthistorisches Institut in Florenz – Max Planck Institute) examines the professional and private life of Edyth von Haynau (alias Rosa Rosà) and the impact of her multidisciplinary artwork—drawings, paintings, ceramics, novels, and photographs—on art, society and politics in the 20th century.

Two more contributions in this compilation are provided by researchers from our art history Max Planck Institutes. Philine Helas and Giorgia Gastaldon are both located at the Bibliotheca Hertziana in Rome. Giorgia Gastaldon looks at the discrimination of female artists in Italy in the 1960s. She focuses on the potential link between art made by women and the rise of feminist movements in Italy at that time. Gastaldon's research can be taken as a starting point for conducting broader research on the impact of gender stereotypes in the world of art.

Philine Helas also looks at gender roles in art—not as artists, but as subjects. Her research focuses on how different genders are represented in 14th and 15th century Italian art in the context of healthcare and taking care of the poor; topics that were frequently the subject of art during the Middle Ages. Based on the assumption that images and representational conventions tend to be transported and transformed over very long periods of time, Helas looks at the meaning behind, and impact of, the Max Planck Society's self-representation through the use of Minerva as its emblem.

Birgit Kolboske (Max Planck Institute for the History of Science) also refers to the culture of our research organization. Titled "Hierarchies", her contribution provides an overview of a research project on the history of women and gender equality in the Max Planck Society. The project high-

lights two facts: first, there are very few women working as scientists, and second, the majority of women work in administrative roles and support male scientists.

Marina Chugunova (Max Planck Institute for Innovation and Competition) and her colleagues provide an overview of the latest empirical research on the gender gap in knowledge-intensive occupations from an economics perspective. Bringing together different scientific approaches with their own research, they conclude that it is imperative to fight the gender gap with well-tailored policies and to support gender equality at the institutional and individual level.

The article written by Elifcan Çelebi (Max Planck Institute for the Study of Societies) provides another fascinating look at gender aspects within the labor market. Celebi strengthens the link between policy studies and gender research by comparing gender related labor market policies in Turkey before and after the Justice and Development Party (AKP) came to power in 2002. She concludes that there has been a paradigm shift regarding labor market policies targeted at women.

Esra Sarioglu (Max Planck Institute for Human Development) also deals with gender equality in Turkey. Sarioglu puts the topic of vigilantism under the microscope in order to ask the bigger questions about the link between violence against women and sexism in Turkish society, where women face hostility from men.

Discrimination and violence against women is also the topic of Ju Young Lee from the Max Planck Institute for Biological Cybernetics. The author investigates the marginalization, sexualized objectification, stereotyping, and exclusion of women in science by analyzing cases of sexualized discrimination and harassment that took place at science high schools in South Korea. Ju Young Lee calls on the scientific community—not only in Korea, but worldwide—to undertake efforts to implement an inclusive culture in the scientific community.

Gunda Wössner (Max Planck Institute for the Study of Crime, Security and Law) provides an overview of research projects at the Institute's Department of Criminology which investigate issues related to dealing with sex offences. She focuses on a project which evaluates the treatment of convicted sex offenders, identifies risk factors for reoffending, and looks at the lives of sex offenders after their release from prison.

Luisa Stella de Oliveira Coutinho Silva (Max Planck Institute for European Legal History) is also a legal scholar. She scrutinizes the handling of the category "gender" in women's legal historiography. Using the historical writing of the Brazilian state of Paraíba as an example, she demonstrates that women's legal history in colonial Brazil cannot be understood

without interlacing gender, religion, social position and status. Against this background, she develops a unique approach for women's colonial legal history.

It might seem that this collection of articles has been compiled in a rather random manner. On the contrary, it represents the wide range of research fields and topics that are to be found under the umbrella of the Max Planck Society. To illustrate both the immense diversity of the individual projects and their relation to the direct research environment, a brief presentation of each researcher's institute and the current research framework accompanies each of the contributions.

Furthermore, this anthology is not designed to be an exhaustive, or even representative compilation of Max Planck research projects that include a gender dimension. Rather, the aim of this publication is to encourage the continuation of an increasing attention for gender aspects in basic research and within the Max Planck Society.

Ulla Weber

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Discrimination in Algorithmic Decision Making

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ABSTRACT
As automated data analysis supplements, and even replaces, human supervision in decision making, there are growing societal concerns about potential unfairness of these systems. This article summarizes recent advances and challenges of fair machine learning. First, we discuss the design of automatic decision systems that incorporate a fairness definition in their training step to avoid discrimination towards particular groups of people sharing certain sensitive attributes, such as gender or race, while providing clear mechanisms to trade off fairness and accuracy. Then, we discuss some of the main limitations of existing approaches within the Fair ML community, stressing the need for interdisciplinary collaborations.

1. INTRODUCTION

Algorithmic decision-making processes are increasingly becoming automated and data-driven in both online (e.g., spam filtering, product personalization) as well as offline (e.g., pre-trial risk assessment, mortgage approvals) settings. However, as automated data analysis increasingly supplements, and even replaces, human supervision in decision making, there are growing concerns from civil organizations, governments, and researchers about potential unfairness of these algorithmic decision systems towards people from certain demographic groups (e.g., gender or ethnic groups).

To alleviate these concerns, a number of recent studies in the emerging field of fair machine learning (ML) have proposed and analyzed mechanisms to ensure that algorithmic decision systems do not lead to unfair outcomes, or perpetuate historic biases and harmful stereotypes. However, by simply taking a snapshot of media reports regarding algorithmic bias and discrimination, we can clearly observe that these concerns are still far from being alleviated.

As an example of algorithmic gender bias, we can easily find news articles discussing Amazon's AI recruitment tool, which was shown to be biased against women.[1] The recruitment tool was trained using the resumes submitted to Amazon over a 10-year period, where most of the applicants were white males. Using such data, the algorithm learnt to recognize word patterns in the resumes, which resulted in penalizations to resumes containing the word "women's", and thus, a bias against women.

Other examples of algorithmic gender bias include biased word associations. Researchers from Princeton University found that the words "women" and "girl" were more likely to be associated by ML systems with the arts instead of science and math, which were more likely connected to males.[2] Machine translation is one of the main applications of word associations, where gender biases have also been pointed out. In December 2018, Google claimed to have resolved gender bias in its neural machine translation tools.[3] However, the implemented solution has been recently revisited as it suffered from issues when scaling to a greater number of languages.[4] Unfortunately, machine translation is not the only application of word associations where algorithmic bias remains unresolved. If one performs a Google image search of words such as "nurse" or "secretary", most of the top images belong to women, while word searches such as "director" or "professor" result mostly in male images.

Importantly, algorithms have shown not only gender biases but other discriminative biases. For example, the COMPAS (Correctional Offender Management Profiling for Alternative Sanctions) algorithm, which assists judges to make their decisions about pre-trial bail, was found to be biased against African-Americans, according to a report from ProPublica.[5] Similar issues have motivated the recent Facebook initiative to launch a new investigation into potential racial biases in its systems.[6]

In this article, we provide a summary of the main advances made by the research community on fair machine learning to address the above issues. Subsequently, we discuss some of the main technical challenges that explain why, despite the enormous effort made by both researchers and industry partners, algorithmic bias and discrimination remains a challenge.

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1 *Hamilton*, 2018.
2 *Hadhazy*, 2017.
3 *Bond*, 2020.
4 *Bond*, 2020.
5 *Larson/Mattu/Kirchner/Angwin*, 2020.
6 Facebook to Launch New Investigation to Study Potential Algorithmic Bias In Its Systems, 2016.

Through the article, we focus on the widely studied problem of algorithmic consequential decision-making, where decisions may have long-term effects on the lives of individuals.[7] Examples of consequential decisions include pre-trial release decisions, loan approvals and fraud detection.

2. TECHNICAL ADVANCES IN FAIR MACHINE LEARNING

Literature on fair algorithmic decision making assume historical data that collect both non-sensitive information (e.g., education level, income, etc.) and sensitive information (e.g., gender or race) of individuals, as well as access to the values of the target quality the algorithm is trying to predict (e.g., whether they repaid the loan or not, or they reoffended, usually known in the ML literature as labels). Such information is often presented as tabular data, where each individual corresponds to a row of data, and the columns collect the features summarizing the individual's information. Additionally, each individual's label is represented as a binary output variable, which is only available during the training step of the ML algorithm. The goal of the algorithm is thus to provide an accurate prediction of the label, which will then be used by the decision maker (bank or law court) to inform its decision. Hence, the first question that arises is: How is it possible for predictions of machine learning algorithms to be biased?

In order to answer such a question, we should first bear in mind that the information that the algorithm "sees" about individuals is a set of features, which may be less informative or not as representative for individuals belonging to minority groups. Moreover, the amount of data collected from minority groups is often significantly smaller than for majority groups. For instance, in the example above of Amazon's recruiting tool, most of the resumes belonged to males (majority group), while female applicants (minority group) where not representative. As a consequence, a prediction algorithm solely trained to maximize expected accuracy (or to minimize expected loss) of the training data, will lead to higher prediction errors for the minority group, as the prediction error decreases as more data is collected. The algorithm makes its prediction by finding patterns in the data; for example, common feature patterns of individuals that repay the loan or do not reoffend. Unfortunately, when the collected data contains historical human biases or stereotypes (e.g., most Amazon engineers are white males), the algorithm may learn such biases and exploit them to

7 *Kilbertus/Gomez-Rodriguez/Schölkopf/Muandet/Valera*, 2020.

make predictions. Even if sensitive information is not used as an input to the algorithm, the algorithm is often able to find proxies for the sensitive information. For example, the zip code may act as a proxy for race, and the individual's height and weight act as proxies for gender.[8]

A great deal of work on fair ML has been done to avoid discrimination in predictive machine learning algorithms that have been trained using potentially biased data. Such work has focused on introducing: i) definitions of fairness that apply to different contexts where decisions are informed by algorithms; ii) measures that translate a definition of fairness into a quantifiable metric that can be evaluated using data; and, iii) mechanisms to enforce a given fairness measure in the predictions outputed by the algorithm.

2.2. *DEFINITIONS, MEASURES AND MECHANISMS FOR FAIR MACHINE LEARNING*

As previously mentioned, most of the work on fair machine learning has focused on a particular definition of fairness—or rather unfairness—namely, discrimination. According to the definition by Altman,[9] discrimination is to "wrongfully impose a relative disadvantage on persons based on their membership in a salient social group". Of course, the next question that arises here is: What does "wrongfully" mean in each application domain of algorithmic decision-making?

In this context, and as we discussed in an earlier paper,[10] three of the most popular definitions of discrimination used in the machine learning literature are as follows:

- *Disparate treatment* (or direct discrimination), which occurs if individuals are treated differently according to their sensitive attributes (with the rest of the non-sensitive attributes being shared). To avoid disparate treatment, one should not inquire about individuals' sensitive data ("fairness by unawareness"). While this approach is intuitively appealing, the sensitive features, as previously mentioned, may often be accurately predicted (reconstructed) from non-sensitive features (proxies).
- *Disparate impact* (or indirect discrimination), which occurs when the outcomes of decisions disproportionately benefit or hurt individuals

8 *Zarsky*, 2014.
9 *Altman*, 2015.
10 *Zafar/Valera/Gomez-Rodriguez/Gummadi*, 2019.

from subgroups sharing a particular sensitive feature value. Much of the recent work done on fair learning has focused on approaches to avoid various notions of disparate impact. Specifically, *demographic parity* demands that the proportion of people in each sensitive group receiving the positive prediction must be equal.

- *Disparate mistreatment*, which occurs when the algorithm achieves different classification accuracy (or conversely, error rate) for different social groups. A decision-making system suffers from disparate mistreatment if individual misclassification rates (e.g., false positive rate, false negative rate) are different for groups of people sharing different values of a sensitive feature. This notion has also been referred to as "equality of opportunity",[11] which equalizes the true positive rates across groups.

The above definitions have been translated into statistical measures of fairness, which depend only on the joint distribution of predictor outcome, protected attribute, and label, and can be quantified from the observed data. Other definitions and measures of fairness exist in the context of algorithmic decision making, which often focus on fairness at the individual level and rely on causal reasoning to better understand and mitigate unfairness in algorithmic decision-making.[12]

Most of the articles on fair machine learning have focused on providing mechanisms to ensure that the predictor is fair according to a given definition of fairness. The majority of them fall into three categories: pre-processing,[13] in-processing,[14] and post-processing.[15] Pre-processing approaches are often limited to disparate impact, as they do not account for the predictor when removing unfairness. In comparison, both in-processing and post-processing can handle disparate impact and disparate mistreatment notions. However, Woodworth et al. have shown that in-processing of a potentially unfair predictor often produces better results than post-processing.[16]

11 *Hardt/Price/Srebro*, 2016.
12 *Barocas/Hardt/Narayanan*, 2019.
13 *Feldman/Sorelle/Friedler/Moeller/Scheidegger/Venkatasubramanian*, 2015.
14 *Zafar/Valera/Gomez-Rodriguez/Gummadi*, 2019.
15 *Hardt/Price/Srebro*, 2016.
16 *Woodworth/Gunasekar/Ohannessian/Srebro*, 2017.

3. TECHNICAL CHALLENGES OF FAIR MACHINE LEARNING

The vast amount of work done on creating fair predictive models could suggest that the problem of fair ML learning is solved. While one may think that training the ML algorithm may resolve any unfairness coming from the bias in the data, this is unfortunately not the case. As discussed in the introduction, there are plenty of examples showing that achieving fair machine learning is not as easy as it may look like. In the following section, we discuss some of the technical aspects that explain why training fair ML algorithms is not so easy.

The first and most obvious reason is that, in general, there is a trade-off between the algorithm's accuracy and fairness.[17] Such a trade-off depends on the definition of fairness that applies to the considered scenario, the training data, and the ML model to be trained. Importantly, it is not possible to know a priori what this trade-off looks like. Only when the model is trained (with or without fairness constraints), can one evaluate both its accuracy and fairness. Moreover, up to the best of my knowledge, there are no general approaches to estimating the Pareto frontier between accuracy and fairness for a given family of ML models. As a consequence, most of the existing approaches aim to maximize accuracy, subject to fairness constraints that enforce, for example, demographic parity. Unfortunately, enforcing such constraints may lead to underwhelming performance (accuracy) and thus be unacceptable in terms of business objectives.[18] As a result, the algorithm unfairness level is often compromised in favor of accuracy, as an inaccurate algorithm may be disadvantageous for all the stakeholders involved. This opens up the question of what accuracy and fairness trade-off is socially, or even legally, acceptable.

Second, there is, in general, little agreement on what fairness definition is appropriate for each scenario.[19] Thus, the practitioner may either opt to select a unique definition of fairness to be enforced or, alternatively, choose to enforce several fairness definitions. However, there are several pieces of work, summarized in Barocas et al.,[20] which prove that it is impossible to simultaneously enforce two different definitions of fairness, and to avoid both disparate impact and mistreatment.[21] Such an impossibility shows the inherent trade-off between different fairness criteria, and

17 *Zafar/Valera/Gomez-Rodriguez/Gummadi*, 2019.
18 *Zafar/Valera/Gomez-Rodriguez/Gummadi*, 2019.
19 *McMahon*, 2010.
20 *Barocas/Hardt/Narayanan*, 2019.
21 *Barocas/Hardt/Narayanan*, 2019.

thus should discourage practitioners to impose a single fairness definition without additional checks on other fairness criteria. For example, it might be undesirable to equalize error rates across groups at the cost of amplifying the demographic disparity (i.e., the differences between positive rates) in the data.

Finally, it is important to check the validity of the assumptions made through the overall design of the ML algorithm; keeping in mind that such assumptions start with the data collection process. Observed features are indirect, noisy and potentially biased measurements of the "state of the world". Thus, it is vital to assess which features used as input for the algorithms may trigger unfairness issues,[22] as well as to consider the underlying causal structure in the data to incorporate causal pathways into fair training procedures.[23]

Additionally, one should check if there are feedback loops during the data collection process. Most of the existing work on fair ML assumes that the available data is a representative sample of the population, that is, it is an independent and identically distributed (i.i.d.) sample of the population. However, as we discussed in our recent work,[24] such an assumption does not hold true for many of the algorithmic consequential decision-making scenarios, where the individual's label is collected only when a favorable decision is made. For example, only if bail is approved, can we observe if the individual reoffends; similarly, only if a loan is approved, can we observe whether they repay the loan. As a consequence, the labeled data used to train predictive models often depend on the decisions taken, leading not only to suboptimal performance (accuracy) for the justice system (or bank), but also potentially amplifying the unfairness/biases that exist in the training data. As a consequence, the fair ML problem in such cases should be reformulated as a learning-to-decide task rather than as a learning-to-predict task. Unfortunately, the latter is usually an easier task than the former.

The above examples summarize some of the technical challenges of fair ML in the context of algorithmic decision-making systems. However, one may expect that similar issues arise when considering other application domains, such as the word association example discussed in the introduction. Remarkably, as we discuss in the next section, the challenges of a fair de-

22 *Grgic-Hlaca/Zafar/Gummadi/Weller*, 2016.
23 *Barocas/Hardt/Narayanan*, 2019.
24 *Kilbertus/Gomez-Rodriguez/Schölkopf/Muandet/Valera*, 2020.

ployment of ML algorithms in the real world go way beyond these technical aspects.

4. DISCUSSION

So far, we have seen that although significant advances have been made in the context of fair ML, we have only scratched the surface of the problem. In particular, we have discussed fairness in consequential algorithmic decision-making problems, and seen that even in such a simplistic scenario, there are significant technical issues that need to be addressed. For example, although we have used the terms "unfairness" and "discrimination" interchangeably in this article, it may be important to consider fairness concepts that go beyond discrimination. For example, China's Social Credit Scoring System penalizes video gamers,[25] which, as far as I am aware, are not recognized as a salient social group according to discrimination laws. However, one may still consider it unfair to penalize individuals based on how they spend their spare time. Other real-world scenarios—for example, word association problems such as translation and information recovery—would also require careful analysis in order to define and mitigate unfairness.

However, the analysis of every scenario where ML plays a role should not be performed by ML engineers and practitioners in isolation. As ML becomes ubiquitous in society, there should be societal agreement and legal policies that determine the scope in which algorithms can be applied, either independently or under human supervision. Similar to other fields, such as medicine, the ML community may need to consider making it obligatory to perform an ethical assessment during the overall design of a new ML-based system. However, in order for practitioners to be able to properly assess the ethical aspects of their systems we should first be able to provide them with guidelines and protocols to question and justify any assumption made during the process. Perhaps that would prevent issues like the one recently under debate in an open letter to the Springer Editorial Committee, where several AI researchers urged Springer not to publish a paper on algorithmic criminal risk prediction based on face images.[26] The fact that something seems technically possible to do does not mean that it is the right thing to do.

25 *Nittle*, 2018.
26 *Coalition for Critical Technology*, 2020.

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Isabel Valera is a full Professor at the Department of Computer Science of Saarland University in Saarbrücken, and an independent group leader at the Max Planck Institute for Intelligent Systems in Tübingen. Prior to this, she held a German Humboldt Post-Doctoral Fellowship, and a Minerva Fast Track Fellowship from the Max Planck Society. She obtained her PhD in 2014 and MSc degree in 2012 from the University Carlos III in Madrid (Spain), and worked as a postdoctoral researcher at the Max Planck Institute for Software Systems (Germany) and at the University of Cambridge (UK). She is an active researcher of the European Laboratory for Learning and Intelligent Systems (ELLIS – https://ellis.eu/en), involved in the ELLIS program on Robust Machine Learning, and a faculty member of the ELLIS institutes in Tübingen and Saarbrücken. She is area chair of the main conferences in machine learning (NeurIPS, ICML, AISTATS, AAAI and ICLR), and has been program chair of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases 2020 (ECML-PKDD 2020). Isabel's research focuses on developing machine learning methods that are flexible, robust, interpretable and

fair. Flexible means they are capable of modeling complex real-world data, which are often heterogeneous in nature and collected over time. The group's research also aims to improve the robustness of algorithms. An algorithm is considered robust when it is able to point out "what it does not know". Finally, the group is researching ways to make algorithms interpretable and fair; if they are part of important decision-making processes, the outcomes should be explainable and fair.

ABOUT THE INSTITUTE

Max Planck Institute for Intelligent Systems, CPTS/Probabilistic Learning Group

The research presented in this article is on the topic of fair machine learning (ML), which aims to ensure that the outcomes of algorithmic decision-making system do not discriminate individuals based on their membership of a salient social group; for example, based on their gender. The discussion presented in this article summarized the research on fair ML carried out by the Probabilistic Learning Group led by Isabel Valera at the Max Planck Institute for Intelligent Systems (MPI-IS), in Tübingen. The MPI-IS covers AI related topics such as computer vision, robotics, control, the theory of intelligence, and machine learning, which is the main field related to this research. In addition, the Probabilistic Learning Group closely collaborates with the Social Computing Department at the Max Planck Institute for Software Systems, led by Krishna Gummadi, and researchers from the Cluster of Excellence of Tübingen on "Machine Learning for Science", in order to access expertise in the social and ethical aspects of artificial intelligence. In terms of potential future collaborations, this line of research would benefit greatly from collaborations with other Institutes, such as the Max Planck Institute for the Study of Societies and the Max Plank Institute for Innovation and Competition, as they complement the societal and legal aspects necessary for developing artificial intelligence that is aligned with the goals and values of our society.

Time to Rethink the Default Settings in Neuroscience: Hormonal Transition Periods as Natural Experiments and Why Sex Matters.

Rachel G. Zsido[a], *Julia Sacher*[b]

ABSTRACT

Diversity drives scientific discovery. Yet, many basic and clinical neuroscience studies fail to include equal numbers of females in their samples, and even fewer present sex-specific analysis of their data. We propose the following strategies to overcome this bias: (1) increase numbers of female study participants, (2) consider sex as a primary variable, and (3) when justified, study all-female samples to provide a more in-depth understanding of female-specific experiences such as the menstrual cycle as well as sex-specific risk trajectories and pathologies. In our research program, we study the influence of sex and sex hormones on brain states in health and disease. We strive to explain the mechanisms underlying the unique vulnerability of women to depression and dementia. Our ultimate goal is to improve brain health for both sexes. By applying scientific expertise in neuropharmacology, quantitative neurochemical imaging and sex differences to traditional research questions in the cognitive sciences, we provide novel perspectives on the diversity of human cognition and brain plasticity.

Knowledge gaps and missing data are often the primary driving force behind the development of scientific breakthroughs. The curiosity and ur-

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gency to discover answers when navigating an uncharted scientific landscape is viewed as a guiding principle for, and defining characteristic of, a scientist. But there remains a persistent lack of inclusion of the female population in research studies and standards, despite the translational relevance of these basic scientific data for over half the population. For example, the 1958 Baltimore Longitudinal Study of Aging on "normal human aging" did not include any women in the first 20 years.[1] The 1982 Physicians' Health Study[2] and 1973 Multiple Risk Factor Intervention Trial,[3] two clinical trial studies on intervention of cardiovascular diseases, included thousands of men but no women. This systematic bias is not simply an issue of the past; even in 2016, only 54% of public health studies, 43% of clinical medicine studies, and 30% of basic biomedical research reported females and males.[4]

Of the studies that do include female subjects, sex is still not regularly considered as a primary factor and is often regressed out as a covariate (reviewed in Galea et al.[5]). Mersha and colleagues[6] illustrated the potential oversights resulting from this approach by conducting both sex-specific and sex-combined analyses to test genomic associations with asthma risk. They found that over half of the key genetic variants were overlooked in sex-combined versus sex-specific analyses. Sex bias can exist unintentionally as well: Pirastu and colleagues[7] investigated sex-specific study participation bias, revealing that large-scale, population-based studies are not always representative of the general population. Performing a genome-wide association study (GWAS) of sex with over 3 million participants, the authors demonstrated that a sex-differentiated participation bias in certain studies can result in spurious associations and inferences. All of these examples lead to lost opportunities in terms of informing basic scientific discovery; and without basic knowledge on the biological underpinnings of sex differences, we cannot address critical sex-driven differences in pathology. The current coronavirus disease 2019 (COVID-19) pandemic represents a topical example of the importance of recognizing and investigating such differences—there are prominent sex differences surfacing in mortality and

1 *Shock*, 1984.
2 *Steering Committee of the Physicians' Health Study Research Group**, 1989.
3 *Multiple Risk Factor Intervention Trial Research Group*, 1982.
4 *Sugimoto/Ahn/Smith/Macaluso/Larivière*, 2019.
5 *Galea/Choleris/Albert/McCarthy/Sohrabji*, 2020.
6 *Mersha/Martin/Myers/Kovacic/He/Lindsey/Sivaprasad/Chen/Hershey*, 2015.
7 *Pirastu/Cordioli/Nandakumar/Mignogna/Abdellaoui/Hollis/Kanai/Rajagopal/Parolo/Baya*, 2020.

vulnerability that appear to characterize the disease[8] but remain far from understood.

Another example of the critical potential to advance knowledge through proactive acknowledgement of sex differences is within technological breakthroughs, such as the use of artificial intelligence (AI) for healthcare and biomedical diagnosing. In a recent review,[9] the authors emphasize how AI algorithms need to actively take into account sex and gender differences in order to make the most precise diagnoses and to recommend the most tailored and effective treatment, while avoiding unnecessary discrimination. Undesirable sex and gender discrimination often manifest unintendedly in training datasets. For example, Larrazabal and colleagues demonstrated the consequences of using sex-imbalanced medical imaging datasets, showing that algorithms performed significantly worse in female patients if the training dataset underrepresented female patients.[10] And while the inverse was also true, the reality is that there is a critical lack of female participant availability in existing biomedical research datasets. Regardless of whether training and benchmarking datasets are biased by unrepresentative data or data that were never collected to begin with, the consequences can be devastating; whether that be for sex-specific pathology knowledge, clinical diagnosis purposes, or even chance of survival following an automobile accident.[11]

Neuroscience is particularly lagging[12], with the male brain implicitly employed as the "default model" and only a minority of basic science and clinical neuroscience studies including a female sample. An analysis of neuroscience research articles in 2017 concluded that "male sex bias remains a persistent and perhaps even intensifying phenomenon in the neuroscience literature".[13] Given robust sex differences in neuropsychiatric

8 Takehiro/Iwasaki, 2021; *Global Health 5050*, 2020; *Guan/Ni/Hu/Liang/Ou/He/Liu/Shan/Lei/Hui*, 2020; *Chen/Zhou/Dong/Qu/Gong/Han/Qiu/Wang/Liu/Wei*, 2020; *Wenham/Smith/Morgan*, 2020; *Chakravarty/Nair/Hammouda/Ratnani/Gharib/Wagaskar/Mohamed/Lundon/Dovey/Kyprianou*, 2020.

9 *Cirillo/Catuara-Solarz/Morey/Guney/Subirats/Mellino/Gigante/Valencia/Rementeria/Chadha*, 2020.

10 *Larrazabal/Nieto/Peterson/Milone/Ferrante*, 2020.

11 See *Holder*, 2019, for female injury and fatality repercussions of historically using male-type crash test dummies; https://www.bloomberg.com/news/articles/2019-07-18/why-women-are-likelier-to-be-hurt-in-a-car-crash.

12 *Beery/Zucker*, 2011; *Will/Proaño/Thomas/Kunz/Thompson/Ginnari/Jones/Lucas/Reavis/Dorris*, 2017.

13 *Will/Proaño/Thomas/Kunz/Thompson/Ginnari/Jones/Lucas/Reavis/Dorris*, 2017.

and neurodegenerative disease risk,[14] brain anatomy[15] as well as response to pharmaceuticals,[16] neglect of women in neuroscientific research directly and detrimentally affects the health of women. This female underrepresentation may partially explain why women typically report more adverse event reactions to pharmacological interventions as compared to men.[17] In the United States between 1997 and 2001, eight of the ten drugs that had to be withdrawn from the market had significantly higher health risks for women than for men. To identify biological contributors relevant to sex-specific effects, we must acknowledge and address this sex and gender data gap.[18] Specifically, we need to promote scientific excellence by increasing the number of female participants, by considering sex and gender as primary variables in analyses, and—when justified—recruiting all-female samples to provide a more in-depth understanding of sex-specific risk trajectories and pathologies. This includes, but is not limited to, studies designed to investigate sex-specific mechanisms in topics where sex differences have already been observed, as well as female-specific experiences such as menstruation, hormonal contraceptive use, pregnancy/postpartum, and menopause— in which a male comparison group would not be scientifically meaningful. In this report, we will review some recent studies of the Emotion & Neuroimaging (EGG) lab to investigate sex-specific risk trajectories on brain and cognitive health as well as the unique vulnerabilities of women to depression and dementia, including suggestions for future neuroscientific research on the intersection of sex and sex hormones in health and disease.

Sex differences in depression and dementia risk underscore the need to consider sex-specific mechanisms as a deliberate aim in human neuroimaging studies. In the EGG lab, Dr. Julia Sacher leads an interdisciplinary team of psychiatrists, psychologists and neuroscientists who focus on the distinct susceptibility of women to depressive symptoms across the lifespan. Through the use of multimodal neuroimaging techniques, our research aims to provide a mechanistic understanding of the interplay between sex hormones, brain structure and function, and female mental and

14 *Kessler/Berglund/Demler/Jin/Koretz/Merikangas/Rush/Walters/Wang*, 2003; *Bromet/Andrade/Hwang/Sampson/Alonso/De Girolamo/De Graaf/Demyttenaere/Hu/Iwata*, 2011; *Ruitenberg/Ott/van Swieten/Hofman/Breteler*, 2001; *Carter/Resnick/Mallampalli/Kalbarczyk*, 2012.

15 *Liu/Seidlitz/Blumenthal/Clasen/Raznahan*, 2020.

16 *LeGates/Kvarta/Thompson*, 2019.

17 *Simon*, 2005; *Tharpe*, 2011; *Light/Lovell/Butt/Fauvel/Holdcroft*, 2006.

18 *Perez*, 'Invisible Women', 2019; *D'Ignazio/Klein*, 2020; https://data2x.org/.

cognitive health. A major focus of the lab is to identify what neurochemical changes occur in the brain during hormonal transition phases across the lifespan, and determine if these changes may explain why women have the highest vulnerability towards depressed mood when sex hormones fluctuate and decline rapidly.[19] Positron emission tomography (PET) can be used for in-vivo quantification of such neurochemical changes,[20] potentially allowing for early identification of biomarkers of mood disorders. One critical hormonal transition period is the postpartum period, during which estrogen levels drop up to 1000-fold after delivery.[21] This immense hormonal disruption and the subsequent neurochemical consequences may underlie the "baby blues" experienced by up to 80% of mothers within days of delivery, or the more severe clinical form (postpartum depression [PPD]) experienced by approximately 15% of mothers and occurring within a month of delivery.

Sacher and colleagues used PET to measure monoamine oxidase A (MAO-A) levels in women who had given birth within 4–6 days, and found that greater MAO-A levels and activity were associated with both lower estrogen levels and greater symptom severity.[22] Women who developed PPD within a month had sustained high levels of MAO-A.[23] This interaction between MAO-A density, depressed mood and sex hormones is critical, as MAO-A metabolizes key monoamine neurotransmitters, such as serotonin, and excessive removal of such monoamines can have detrimental effects. This project provides insight into the uniquely female-specific neurobiology of the early postpartum period that remains underrepresented in neuroscientific literature. And while studies in these populations are challenging, the concerns can be addressed with thoughtful study design (see suggestions in Zsido et al.[24]) and the outcomes have clear implications for informing treatment options. For example, as treatment in these women should be compatible with breastfeeding, the results of this study suggest taking dietary supplements of monoamine precursors to maintain sufficient balance of monoamines during the early postpartum period.

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19 *Zsido/Villringer/Sacher*, 2017; *Deecher/Andree/Sloan/Schechter*, 2008; *Freeman/Sammel/Boorman/Zhang*, 2014; *Frokjaer/Pinborg/Holst/Overgaard/Henningsson/Heede/Larsen/Jensen/Agn/Nielsen*, 2015.

20 *Zsido/Villringer/Sacher*, 2017.

21 *O'Hara/Schlechte/Lewis/Wright*, 1991; *O'Hara/Swain*, 1996; *Nott/Franklin/Armitage/Gelder*, 1976.

22 *Sacher/Wilson/Houle/Rusjan/Hassan/Bloomfield/Stewart/Meyer*, 2010.

23 *Sacher/Rekkas/Wilson/Houle/Romano/Hamidi/Rusjan/Fan/Stewart/Meyer*, 2015.

24 *Zsido/Villringer/Sacher*, 2017.

Beyond these extensive hormonal shifts during the postpartum period, there are also more subtle hormonal fluctuations that can pre-dispose women to depressive symptoms, such as during the menstrual cycle. Approximately 8% of women during their reproductive years will develop premenstrual dysphoric disorder (PMDD), which is characterized by symptoms such as irritability, depression and anxiety.[25] As these core symptoms occur exclusively in the late luteal phase before menstruation and when hormones are rapidly decreasing, the immediate assumption was that ovarian hormones such as estradiol were independently driving the depressed mood. Indeed, previous work has shown that fluctuations in estradiol levels around a woman's own mean is the strongest risk factor for developing symptoms.[26] Yet, women suffering from PMDD do not have differences in absolute levels of ovarian hormones compared to healthy controls,[27] suggesting another variable to be involved. We do know that, firstly, the most effective clinical treatment for PMDD currently is the use of selective serotonin reuptake inhibitors (SSRIs), and that, secondly, estradiol interacts with the serotonergic system. This is why we hypothesize that women suffering from PMDD have a more pronounced sensitivity of the serotonergic system to physiological fluctuations in estradiol. Through the use of functional and structural magnetic resonance imaging (MRI) and PET, we tested if estradiol fluctuations are associated with depressed mood in women suffering from PMDD, and whether this relationship is moderated by changes in serotonin transporter binding. This study provides the first quantitative neurochemical dataset in vivo to identify a mechanistic biomarker for a newly recognized psychiatric disorder.[28]

As not all women will experience depressive symptoms associated with these endogenous sex hormone fluctuations, it is also critical to build highly characterized, well-controlled models in healthy controls to better understand how subtle fluctuations in endogenous hormones may already influence brain microstructure and structural connectivity. In an exemplary

25 *American Psychiatric Association*, 2013.

26 *Frokjaer/Pinborg/Holst/Overgaard/Henningsson/Heede/Larsen/Jensen/Agn/Nielsen*, Role of Serotonin Transporter Changes in Depressive Responses to Sex-Steroid Hormone Manipulation: A Positron Emission Tomography Study, in: Biological psychiatry 2015, 534-43.

27 *Bäckström/Andreen/Birzniece/Björn/Johansson/Nordenstam-Haghjo/Nyberg/Sundström-Poromaa/Wahlström/Wang*, The Role of Hormones and Hormonal Treatments in Premenstrual Syndrome, in: CNS drugs 2003, 325-42.

28 *Association*, 2013; *Reed/First/Kogan/Hyman/Gureje/Gaebel/Maj/Stein/Maercker/Tyrer*, 2019.

study, Barth and colleagues[29] measured gray matter density changes and white matter microstructure in a single woman across the entire menstrual cycle (30 time-points). The authors found that estradiol levels correlated with both measures in the hippocampus on a day-by-day timescale, suggesting a remarkable degree of hippocampal plasticity in response to sex hormone fluctuations. As this study demonstrated the feasibility and importance of a longitudinal MRI study design to test joint dynamics of the menstrual cycle and the brain, we have now extended this study through the use of ultra-high field 7-Tesla MRI to assess subtle changes in hippocampal subfield volume, white matter microstructure, resting state activity, and endogenous sex hormone fluctuations in a larger sample of women at six critical time-points across the menstrual cycle.

In addition to studying specific hormonal transition states in pathology and in health, another broader approach is to assess sex differences in risk trajectories for neurodegenerative and neuropsychiatric risk across the lifespan. In this third line of work, Zsido and colleagues[30] investigated associations between structural patterns of brain aging, visceral fat as a metabolic risk factor for structural brain atrophy, and estradiol levels in 473 women and 501 men (19–79 years old). The study found that visceral fat was associated with compromised brain network structure and worse cognitive performance in both men and women, but that estradiol may protect the brain against these structural patterns of atrophy in women only. The authors also observed that women appeared to accumulate the risk factor of visceral fat at the fastest rate during midlife—a time window when estradiol levels rapidly fluctuate and decrease in women during perimenopause. As visceral fat increases and estradiol decreases during the midlife transition, perimenopause may represent a window of increased risk for cognitive health and thus a critical time for possible prevention of late-life cognitive decline. To further explore this sex-specific finding, the authors conducted a follow-up analysis in the midlife female cohort and found that, although the groups did not differ by age or visceral fat levels, women with lower estradiol levels displayed less healthy patterns of brain structure and weaker memory performance. A complementary study[31] reported an interaction between unfavorable metabolic states, sex hormones, and menopause status, indicating that elevated testosterone levels and

29 *Barth/Steele/Mueller/Rekkas/Arélin/Pampel/Burmann/Kratzsch/Villringer/Sacher*, 2016.

30 *Zsido/Heinrich/Slavich/Beyer/Masouleh/Kratzsch/Raschpichler/Mueller/Scharrer/Löffler*, 2019.

31 *Stanikova/Zsido/Luck/Pabst/Enzenbach/Bae/Thiery/Ceglarek/Engel/Wirkner*, 2019.

changes in body weight have differential effects on depression susceptibility depending on whether a woman is pre-menopause or post-menopause. These findings have important clinical implications for developing sex-specific strategies to promote a healthy cognitive and brain aging trajectory.

A central aim of the EGG lab is not only to understand individual depression risk but also to inform and improve relevant clinical strategies. A current project includes a longitudinal model of how selective serotonin reuptake inhibitors (SSRIs), the first-line treatment for the majority of patients with depression and anxiety, influences brain activity and neurochemistry. Over half of major depressive disorder patients have inadequate responses to initial antidepressant therapy,[32] leading to weeks of trial and error in an attempt to find the right medication. Given that women are twice as likely to suffer from depression as men are,[33] as well as the highly variable response rates and reported sex differences in response to SSRIs,[34] there is a critical need to understand the electrophysiological mechanisms underlying SSRI action in women and identify a neurophysiological biomarker to predict individual responsivity to SSRI intake. We administered a commonly-prescribed, fast-acting, clinically-relevant dose of 20mg escitalopram for one week to assess how escitalopram affects brain function, cortical excitatory/inhibitory balance, and neurochemical shifts in the healthy brain using multimodal techniques: functional and structural MRI, electroencephalography (EEG), and MR spectroscopy, respectively. Given the continuously rising number of prescribed antidepressants[35] and the increased risk of depression in women worldwide, establishing this model in healthy women provides a well-timed preclinical framework for future translational research in clinical populations and a crucial next step towards informing pharmacological treatment strategies at an individual level.

Depression is a multifaceted disease. Sex hormones are not the sole contributing factor but rather part of a complex and dynamic interplay of neurotransmitters, metabolic risk factors, hormones, psychosocial stress, and possibly an inflammatory response.[36] Additionally, while the studies mentioned thus far discussed fluctuations in *endogenous* hormones, it is also known that emotion and mood are influenced by *exogenous* manipulations

32 *Bschor/Kern/Henssler/Baethge*, 2016.
33 *Kessler/Berglund/Demler/Jin/Koretz/Merikangas/Rush/Walters/Wang*, 2003.
34 *Gaynes/Warden/Trivedi/Wisniewski/Fava/Rush*, 2009; *LeGates/Kvarta/Thompson*, 2019; *Bschor/Kern/Henssler/Baethge*, 2016.
35 *Iacobucci*, 2019.
36 *Slavich/Sacher*, 2019.

of sex hormones, such as the use of oral contraceptives.[37] The essential message is that, when studying risk trajectories for neurodegenerative and neuropsychiatric disorders, particularly those with prominent sex differences in risk rates, it is important to investigate sex differences and the role of sex hormonal environment. This can be through analyzing sex as a primary variable in a half-male half-female population, or in a single-sex study explicitly designed to further delineate a previously observed sex-specific effect or sex-specific experience (e.g., PMDD, pregnancy, oral contraceptive use, menopause).

Recognition of the importance of sex and gender is contributing to a paradigm shift in the neurosciences. The National Institute of Health (NIH) released their first Research Project Grant on sex and gender in November 2019 and leading scientists are defining how female brain health warrants its own scientific discipline.[38] Major scientific journals such as *The Lancet*, *Nature* and *Science* are increasing discussions surrounding the consequences of missing female representation in scientific research, creating more inclusive editorial policies and expectations for study designs, and dedicating entire issues and projects to sex- and gender-specific advances in scientific discovery.[39] Finally, research on academic inclusion and success is emerging to address gender imbalance in who gets funded, invited as peer reviewers, and cited in neuroscience research.[40] In conclusion, robust evidence for sex differences in the neurobiology of the brain exists.[41] The topic is sensitive and controversially discussed because such findings are often misused to perpetuate gender stereotypes and sexist beliefs. Gender equality and lifting barriers for women in our society are ethical imperatives, and not causally linked to the presence or absence of biological sex differences. Attempts to root gender equality in biology are therefore misguided. Not actively pursuing this line of research will hinder scientific discovery and can be detrimental to the quality of healthcare for women. We encourage the investigation of sex and gender as variables of interest and the use of this knowledge as an opportunity to increase gender equality in the basic sciences and in clinical application.

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37 *Lewis/Kimmig/Zsido/Jank/Derntl/Sacher*, 2019.
38 *Galea*, 2019.
39 *Shansky*, 2019; *Mogil*, 2020; Editorial in Nature, 2020; Editorial in The Lancet, 2020; Takehiro/Iwasaki, 2021.
40 *National Institutes of Health*, 2020; *Dworkin/Linn/Teich/Zurn/Shinohara/Bassett*, 2020; Chawla, 2018.
41 *Liu/Seidlitz/Blumenthal/Clasen/Raznahan*, 2020.

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Selected Publications:

Zsido, Rachel G, Matthias Heinrich, George M Slavich, Frauke Beyer, Shahrzad Kharabian Masouleh, Juergen Kratzsch, Matthias Raschpichler, Karsten Mueller, Ulrike Scharrer, Markus Löffler, Matthias L Schroeter, Michael Stumvoll, Arno Villringer, A Veronica Witte, and Julia Sacher. (2019). Association of Estradiol and Visceral Fat With Structural Brain Networks and Memory Performance in Adults. *JAMA Network Open*, *2*(6), e196126. https://doi.org/10.1001/jamanetworkopen.2019.6126

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ABOUT THE INSTITUTE

Max Planck Institute for Human Cognitive and Brain Sciences, Emotion & Neuroimaging Lab

Research at the Max Planck Institute for Human Cognitive and Brain Sciences revolves around human cognitive abilities and cerebral processes, with a focus on the neural basis of brain functions such as language, emotions, human social behavior, music and action. Through the use of multimodal neuroimaging techniques, such as Positron Emission Tomography (PET), Magnetic Resonance Imaging (MRI) and electroencephalography (EEG), the Emotion & Neuroimaging (EGG) Lab, an independent research group, led by Dr Sacher, investigates how sex hormones affect brain and behavior across the adult lifespan and strives to identify the mechanisms underlying the unique vulnerabilities of women to depression and dementia.

Edyth von Haynau, Edyth Arnaldi and Rosa Rosà: One Woman, Many Souls

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ABSTRACT
In an atmosphere marked by the rise of feminism, the search for a renewal in art, and a strong fascination for paranormal phenomena, Edyth von Haynau created works of art including drawings, paintings and ceramics. She also wrote various articles in which she analyzed the positive change in the role of women.
The project focuses on how von Haynau used literary and artistic strategies to take up highly topical issues of her time and to reflect these scientific, technological and spiritist discoveries in a new female ideal. It aims to completely document and reconstruct her works beyond her Futurist phase in order to recontextualize von Haynau's impact on the renewal of the image of women and on the artistic trends of her time.

Studying a woman who was successfully practicing art in Italian Futurism (1909–1944),[1] inevitably leads to gender-related questions since this avant-garde movement had long been considered misogynous. It was not until the 1980s that an increasing number of studies on female Futurist artists could revise this image by revealing the surprisingly high level of participation of women from many different nationalities in the movement.[2]

1 As this is a description of an ongoing project, the content will overlap with: Hanstein, "Edyth von Haynau"; Hanstein, *Der Geist der Moderne*; and Hanstein, "Durch Rosas Brille". I would like to thank the grandchildren of the artist, Cristina, Luca and Ranieri Fornari, for their kind permission to publish the works of Edyth von Haynau.

2 See *Berghaus*, 2015, pp. XI–XXII. An extensive review of the literature on female Futurist artists can be found in the same volume by *Meazzi*, 2019, pp. 450–464. The current state of research on female Futurists in Italy and Russia as well as publications on this topic are documented by *Re/Douglas*, 2019, pp. 47–66.

Filippo Tommaso Marinetti (1876–1944) hoped that the provocative ideas and the aggressive tone of the Founding Manifesto proclaiming Futurism on 20 February, 1909, would be a wake-up call for Italy's youth. He was partly successful; his glorification of the "disdain for women" caused particular outrage and was discussed in many respects.[3] Marinetti's "negative attitude towards women" was reflected by his contemporaries as well as by scholars and could eventually be put into perspective as it addressed an outdated, firmly established perception of femininity.[4]

While some female artists felt disgusted by the harsh ideas expressed in the manifesto, others saw its radical nature as an opportunity to distance themselves from the predominant female ideals in Italy at the time and they supported the departure from traditional values and clichés.[5] Later on, Marinetti himself was to recognize and support these women as "potential allies in the explosion and destruction of the bourgeois family and the entire existing order."[6] Curiously, many of the women who were interested in Futurism for its anti-bourgeois sentiments were not Italian.[7]

One of these artists was Edyth von Haynau (1884–1978).[8] She experimented with *Parole in libertà* (Words in Freedom)—a Futurist innovation which increasingly focused on the visual aspect of writing and which

3 "Noi vogliamo glorificare la guerra - sola igiene del mondo - il militarismo, il patriottismo, il gesto distruttore dei liberatori, le belle idee per cui si muore e il disprezzo della donna", Filippo Tommaso Marinetti, *Manifesto del futurismo* (Le Figaro, February 20, 1909). Point 9 was one of the most famous proclamations of the founding manifesto. In the following point, Marinetti explicitly opposed feminism.

4 For further reading, refer to Lucia Re who was among the first to investigate the complex relations of "Marinetti's paradoxical support for the suffragist movement. " See *Re*, 1989, p. 258. An overview on the state of research on this topic is provided by *Berghaus*, 2015, pp. XIV–XX, and *Re/Douglas*, 2019, pp. 49–51.

5 On the cultural, political, and social situation of the early 19th century and the hesitant evolution of feminism in Italy as well as on the developments in Russia, see also: *Re/Douglas*, 2019, pp. 47–66.

6 See *Re/Douglas*, 2019, p. 51.

7 Also argued by *Re*, 2011, p. 2.

8 Her Futurist pseudonym Rosa Rosà was most likely based on the name of the small town Rosà (Veneto) which she duplicated. On Edyth's biography and this interpretation of her artist's name, see *Salaris*, 1981, pp. 27–28. This information cannot be confirmed by any sources and comes from interviews with the artist's descendants. At this point, I would like to thank Claudia Salaris for providing me with this piece of information. After her Futurist experience, Edyth signed her works mostly with "Edyth Arnaldi". Dr. Simonetta Proietti was the first scholar to provide an official document with the artist's death certificate; however, this contained an Italian variant of the name (Edith de Haynau). Her husband's death cer-

blurred the lines between literature and the visual arts. She also wrote several short stories and a novel, was active as a painter, illustrator, ceramist and photographer. It would appear that she was also actively involved in the art of sculpture, which, unlike the applied arts, was still considered a male domain in 1939.[9] Unfortunately, the whereabouts of any of her surviving sculptures and ceramics is unknown. Two of the artist's letters to Emilio Settimelli (1891–1954) confirm that ceramics was an important art form for Edyth.[10] In Futurist art houses, such as Fortunato Depero's *Casa del Mago* in Roverto and the *Casa Balla* in Rome, many women were significant contributors to the applied arts. Apart from Benedetta (Cappa Marinetti 1897–1977), who became a famous Futurist painter, and the female artists associated with the periodical *L'Italia Futurista*, women were mostly overshadowed by their male colleagues or relatives and not appreciated by academia until later.[11] For some female Futurist artists, their interest in designing Futurist fans, carpets and clothes posed a dilemma as they felt obliged to deliberately distance themselves from these areas in order to not propagate stereotypes and clichés.[12] Edyth, however, lived out her artistic creativity in many areas, reflecting the spirit of Futurism. She also took a feminist stance in both her creative and critical writings, as emphasized by Lucia Re.[13] Her talent was appreciated by her colleagues and the founding father of Futurism even called the Viennese artist a brilliant genius.[14] Nevertheless, for a long period of time, Edyth almost fell into obscurity. This was due in part to the focus on the artistic work of her male colleagues by scholars of Futurism. According to Berghaus, male critics of art and literature were not interested in most of the female Futurists. Women were neither mentioned in the general literature on twentieth century art nor in studies focusing on Futurism.[15] Another reason for her

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tificate, though, gives another version of the name: Editha De Haynau. I would like to thank Dr. Proietti for forwarding these documents.

9 On women and sculpture see *Grasso*, 2001, p. 137.

10 The letters are stored in the archive of the *Fondazione Conti in Fiesole* (FC/ES.C 143-145 CAM A).

11 See *Ruta*, 2019, p. 186–187.

12 Among others, *Zoccoli*, 2019, p. 148 points at this problem.

13 Lucia Re argues this and calls Edyth the only female Futurist author who decisively opposed Marinetti's misogynist attitudes, see *Re*, 1989, p. 263.

14 In a conversation with Maria Ginanni, Marinetti called Edyth "*la geniale Viennese*" ("the brilliant Viennese lady"), documented by *Marinetti*, 1992, p. 130.

15 Furthermore, later Feminist studies sought distance because of Marinetti's "misogynist" rhetoric and his proximity to Fascism. See *Berghaus*, 2015, p. X.

obscurity is the loss of the majority of Edyth's art works, as well as the fragmentary pieces of information on her life.[16]

Nevertheless, the artist's early years are relatively well-documented. Due to her "typically female" interest in drawing and music, she met the ideal of a young Austrian woman at the turn of the century.[17] Edyth was part of the Viennese aristocracy and was educated at home.[18] At the age of 13, she witnessed the formation of the Vienna Secession which rebelled against the established concept of art. In order to be able to pursue her artistic education, Edyth, against her parents' wishes, attended the "Kunstschule für Frauen und Mädchen" (Academy of Arts for Women and Girls) in Vienna.[19] It was not until 1920 that female students were admitted into the Academy of Fine Arts Vienna.[20] In order to counteract the discrimination against female artists, women took action by founding the "Verein der Schriftstellerinnen und Künstlerinnen in Wien" (Association of Female Authors and Artists in Vienna) in 1885, which still exists today.[21]

Thus, Edyth grew up in an environment marked by revolutionary changes, the rise of feminism and the quest for a renewal of art. In addition, a strong interest in paranormal phenomena was characteristic for the Viennese society of the early twentieth century. Spiritism was particularly popular among scientists, artists and members of the Vienna upper class

16 As reported by Salaris, Edyth's immediate family criticized her association with Futurism and thus, most of her works were lost after her death, as quoted in *Salaris*, 2001, p. 53.

17 The image of the "Angel in the House" was, in addition to the image of "femme fatale" and the "femme fragile", the dominating stereotype, see *Re*, 2001, p. 2. On women's roles as artists in Vienna see also *Plakolm-Forsthuber*, 1994.

18 Such biographical information can be found in *Salaris*, 1981, p. 27.

19 The "Wiener Frauen Akademie" ("Women's Academy of Vienna"), as it was latter called, was founded by the painter Prof. A. F. Seligmann on December 1, 1897, who was the only teacher. http://www.onb.ac.at/ariadne/vfb/ms_kfmw.htmMore information on the history of women studying at the Academy of Fine Arts Vienna can be found on the Website of the Academy http://www.akbild.ac.at/Portal/akademie/uber-uns/Organisation/arbeitskreis-furgleichbehandlungsfragen/geschichte. Investigation into the archives has revealed that Edyth enrolled neither at the University of Music and Performing Arts Vienna nor at the University of Applied Arts Vienna (formerly Vienna School of Arts and Crafts).

20 It was at a relatively late point in history that the Ministry of the Interior and Education officially allowed women to study at the Academy of Fine Arts Vienna, c.f. http://www.akbild.ac.at/Portal/akademie/uber-uns/Organisation/arbeitskreis-fur-gleichbehandlungsfragen/geschichte. For a historical overview of the development of women studying at the University of Vienna, refer to *Heindl/Tichy*, 1990.

21 On the tasks and goals of the society see *Harriman*, 1989, p. 27, as well as the information provided on: http://www.onb.ac.at/ariadne/vfb/fv_vsk.htm.

around 1900.[22] Due to Edyth's aristocratic background, it is likely that she witnessed discussions on this highly topical theme. Spiritism was not only relevant for modern art[23] but also concerned with social issues. According to Astrid Kury, spiritism was also crucial for the increasing emancipation of women, as their role had already been reconceptualized in spiritist circles of the late 19th century.[24] I believe that young female artists who were open to this trend found it easier to join Futurist circles.

In Italy, spiritist tendencies also had an effect on modern art and, surprisingly, many female Futurists showed an interest in occultism. Silvia Contarini assumes that Marinetti and Valentine de Saint-Point (1875–1953)—who wrote the *Manifesto of the Futurist Woman* in 1912 and thus formulated a new female ideal—met in Paris at different spiritist séances.[25] Benedetta, a student of the Futurist artist Giacomo Balla (1871–1958) and wife of Marinetti, was also attracted by occultism, which is particularly evident in her abstract novel *Le forze umane* (The Human Forces, 1924).[26] She, in turn, was close friends with the Czech artist Růžena Zátková (1885–1923) who was to approach Futurism in Rome after 1914. Detailed entries in Růžena's diary document her interest in paranormal phenomena, Rudolf Steiner's Anthroposophy, theosophic teachings and in the spiritist activities of the communities she frequented.[27] She also organized séances in her home, and among the guests was also Balla, who lived in Rome.[28] Balla's spiritist background, his contact with General Ballatore and the impact of these interests on his paintings and sculptures have been convincingly demonstrated in several studies.[29] Balla's house, in turn, was a meeting point for Futurists. For example, the brothers Ginna (Arnaldo Ginanni

22 Explained in-depth by *Kury*, 1998, p. 390.

23 The role of spiritism in modern art is impressively analyzed in another study by *Kury*, 2000. The influence of occultism on modern literature was convincingly described by *Pytlik*, 2005.

24 This was also due to the implementation of Charles Fourier's Socialism, see *Kury*, 1998, p. 396.

25 See *Contarini*, 2015, p. 94.

26 *Marinetti Cappa*, 1924.

27 Documented by *Giorgini*, 2012, p. 113.

28 On Růžena's relationship to Futurism and her sojourn in Rome, refer to *Pomajzlová*, 2011, in particular p. 287. Balla's presence at a séance taking place in Růžena's house is also documented by *Giorgini*, 2012, p. 115.

29 Carlo Ballatore (1839–1920) was president of the Theosophic Group in Rome which was founded in 1897 and which became part of the Theosophical Society in 1907, see *Benzi*, 2007, p. 121. As early as 1967, Calvesi pointed to the theosophical background of some of Balla's works, see *Calvesi*, 1967. Later studies confirmed his approach.

Corradini, 1890–1982) and Corra (Bruno Ginanni Corradini, 1892–1976), members of the group associated with the Florentine periodical *L'Italia futurista* (1916–1918), which was to become very important for Edyth, discussed occult phenomena at this location.[30]

In 1908, Edyth married the Italian author Ulrico Arnaldi (1878–1956) and moved to Rome with him. There, she most likely encountered an atmosphere similar to Vienna in which paranormal phenomena were discussed. It seems likely that Edyth moved in similar circles to Růžena and Balla, and attended events of the *Associazione Artistica Internazionale* in the famous Via Margutta where she kept a studio like so many other foreign artists.[31] However, a direct connection has not been confirmed so far.[32] Furthermore, there is no evidence of her first contact with the Futurist circle in Florence. Yet, it was mainly throughout her Futurist period as Rosa Rosà and her contributions to the periodical *L'Italia futurista* that she became famous.

The women involved with *L'Italia futurista* were united by a Feminist agenda as well as by their interest in the paranormal.[33] Men of the main group associated with the periodical also shared this interest since a need for renewal could clearly be felt in Florence, which was derided by Futurists as just another "passatist"[34] city of museums. Investigating unknown

30 *Poggianella*, 1995, p. 461. The periodical *L'Italia futurista* is part of the project *Pro Firenze Futurista – Digital archive on Futurism in Florence* of the Kunsthistorisches Institut in Florenz – Max-Planck-Institut and can be consulted online: http://futurismus.khi.fi.it/.

31 Between 1909 and 1915, Edyth and Ulrico had four children, see *Salaris*, 1981, p. 27. She was most likely introduced into Roman society during this period. Balla and Boccioni are listed as members and visitors of the *Associazione Artistica Internazionale*, see *Moncada di Paternò/Salmeri*, 2012, p. 314. The information on Edyth's studio in the Via Margutta is also confirmed by *Verdone*, 1971, p. 56. This reference can possibly be traced to the artist herself. But her name is not mentioned in an extensive study on artists in the studios in Via Margutta, see *Moncada di Paternò/Salmeri*, 2012.

32 So far, there is no evidence for connections with Růžena Zátková. I am grateful to Marina Giorgini for this important piece of information.

33 Of interest is Chapter 3 "Le veggenti del Futurismo: Le donne de "L'Italia futurista" tra esoterismo e diritti femminili", in *Mosco*, 2009, pp. 87–133.

34 Condemning everything not modern to be old and unnecessary, the Futurists labeled several things "passatist" (from "passato" = "past") to contrast with the name of their own movement.

phenomena was a means of achieving this.[35] In the early twentieth century, it was commonly believed that space was permeated by invisible natural forces. The discoveries of hitherto unknown radiation, energies and magnetic waves highlighted the obvious limitations of human perception. Scientific discoveries and occult phenomena were often connected, as they could now be "proven" by science. Thanks to new technological means, perception exceeded the capabilities of the naked eye. Exactly the same was supposed to be achieved by the refined eye of the sensitized artist who visualized the invisible through art.[36] This phenomenon pervades Edyth's otherwise very disparate works that were created between 1917 and 1918, and mainly published by *L'Italia futurista* or others in its circle . She evokes, for example, the vision of a modern city in which "the almost visible rays, the emanations of the brains, the awareness of virtues, the bright passions hover in the air."[37] Edyth's words describe the energies that are not visible to the naked eye, which had been discovered by the sciences and enthusiastically adopted by the parasciences. The title of Edyth's novella *Romanticismo sonnambulo* (Somnambulistic Romanticism, 1917), by contrast, confirms her interest in the phenomenon of sleepwalking.[38] In addition, there are parallels to the practice of automatic writing and the theosophical principle of reincarnation with gender changes.[39]

In the *Parole in libertà* titled *Ricevimento-thé-signore-nessun uomo*[40] (Reception-Tea-Ladies-No Men, 1917, Fig. 1) the artist's interest in invisible forces again becomes evident. The plate can be interpreted as a simplified floor plan of a salon. At its center, a small table with sandwiches and drinks is indicated by a circle. Asterisks, triangles and squares mark three discussion groups that are arranged around this circle and scraps of conversation radiate from them as wavy lines. The general mood between the

35 Simona Cigliana illustrates the general atmosphere in Florence as well as the special role of Futurists around the periodical *L'Italia futurista*, see *Cigliana*, 2002, pp. 47–66 and pp. 269–296. On the influence of the esoteric and occult on the contents of *L'Italia futurista* see also *Notte*, 2002, pp. 414–416. Besides the subscribers of the manifesto *La scienza futurista* (The Futurist Science), female artists such as Maria Ginanni and Irma Valeria shared their interest in the unknown, invisible and occult. The spiritist trend was rejected, though, by *Magamal*, 1917, p. 3.

36 See *Dalrymple Henderson*, 1995, pp. 13–31. *Asendorf*, 1989, also shows that the fascination for occult forces was not limited to Futurism. On the realization in Futurist art see also *Hanstein*, 2015.

37 See *Rosà*, *L'Italia futurista 2*(9), 1917, p. 3.

38 The text was also published in *L'Italia futurista*, *2*(17), 1917, p. 3.

39 See *Notte*, 2002, p. 414.

40 Depicted in *L'Italia futurista 2*(35), 1917, p. 3.

ladies in the room—marked by malicious gossip—is visualized in the main themes mentioned and by three flowing currents (Fluidi) that move between the groups: "Impertinenza" (impertinence), "Fluidi ostili" (hostile vibrations) and "Noia sbadiglie represse" (suppressed bored yawns). An "ugly family picture" (brutto quadro di famiglia) completes the scene. The author's location is indicated in the lower corner on the left as being in front of the door. The arrow as well as the phrase "mi pare che ne ho abbastanza" (I think I've had enough) show that she intends to leave the scene. Thus, the atmosphere in the room and Edyth's state of mind, her aversion towards the tea receptions typical of her social class and time, are clearly depicted. As the work's title accentuates, traditionally only women participated in such events. The social setting shown by Edyth's *Parole in libertà* was traditionally the domain of women and therefore contrasts strikingly with the setting of experimental séances, which were also organized in the salons of the high society, but which were mainly attended by men.

Edyth's novel *Una donna con tre anime* (A Woman with Three Souls, 1918), an early example of Feminist science fiction,[41] also takes up topics such as esotericism, mediumism and telepathy.[42] The author's critical attitude towards the bourgeois society and the traditional role of women emerges again[43] as she describes the successive transformation of a housewife into three radically new models of femininity triggered by the touch of "spores from the future."[44] Capturing multiple personalities was also a popular issue in contemporary literature resulting in descriptions of fluent transitions of the self.[45] A particularly vivid example is Luigi Pirnadello's novel *Uno, nessuno, centomila* (One, None, One Hundred Thousand, 1926)—parts of which had been previously published with Edyth's drawing *Danzatrice* (Female Dancer, Fig. 2)—so she must have been familiar with

41 See entry on Science Fiction by *Pizzo/Somigli*, 2006, pp. 1717–1718.

42 *Bello Minciacchi*, 2007, p. 162.

43 The novel connects Futurist principles with a fantastical quest for gender identity and occult topics. See *Salaris*, 1981, pp. 12–14. Additional information in *Sica*, 2004. The English edition of the novel by Lucia Re und Dominic Siracusa sparked new interest and international popularization, see *Rosà*, 2011, also available online: http://www.escholarship.org/uc/item/7k625747.

44 See *Rosà*, 1981. Salaris already grounded the number of different souls on Rosà's interest in occult sciences and the teachings of Rudolf Steiner. The theosopher had suggested a tripartition of the elements which constituted the human being (physical body, astral body, etheric body), see *Salaris*, 1981, p. 13.

45 On the representation of this topic in literature, see *Asendorf*, 1989, p. 78.

it.[46] Engaging with polypsychism was naturally interesting from a psychological point of view. The spiritists, however, were to delve deeply into the possibility of duplicating the body and the soul and Futurist artists later on reflected on this phenomenon in their works.[47] Edyth not only took up this notion in *Una donna con tre anime*, but also in her illustrations for Bruno Corra's novel *Sam Dunn è morto* (Sam Dunn is Dead, 1917)[48] which visualize invisible natural forces, vibrations and various states of mind. In her drawings for Mario Carli's volume *Notti filtrate* (Filtered Nights, 1918), she successfully captures the atmosphere of the juxtaposed poems way beyond the written word.[49] What is also special about these illustrations, according to Zoccoli, is that they "anticipated the automatic writing of Surrealism" as the artist's hand traces "the flow of sensations surfacing from her inner depths" like a seismograph.[50] The homogenous composition of text and image in pure shades of blue intensifies the somnambulistic impression suggested. Furthermore, this could be a reference to Edyth's and Mario Carli's unusually strong abilities of perception: infrared-photographs show that human perception is limited with regards to the color scale—an insight which was to change the world view of that time and which was to find its way into the works of some Futurists.[51] A preliminary drawing, possibly by Edyth (Fig. 3), for the fifth image in the book

46 Pirandello had started working on this novel as early as 1909. The final version, however, was not published until 1926. Accompanied by Edyth's drawing it was published in Anton Giulio Bragaglia's magazine *Cronache d'attualità. Arte, scienza, letteratura, teatro, mode, sport, mondanità*, Rome, May 1921, Ser. 3, 5, p. 4.

47 On the possibility of the multiplied human and the externalization of the will, see also *Marinetti,* 1983, p. 256 ff. In occultism, the idea of an ethereal doppelganger is connected with the concept of multidimensionality. The Futurist Luigi Russolo, for example, reflected on this in his 1938 book *Al di là della materia* (Beyond Matter) and in some of his paintings. See *Russolo*, 1938.

48 *Corra*, 1917. For a detailed analysis of the drawings, refer to *Hanstein*, 2015 and *Hanstein*, 2019.

49 *Carli*, 1917.

50 See *Zoccoli*, 2019, p. 381.

51 This can be compared with the recently discovered ability to see laser light which lies beyond the visible spectrum and was therefore considered to be invisible to the human eye. On this see *Palczewska et. al*., 2014. According to Boccioni, blue and purple shades were to represent a purely spiritual perception of the modern world as an expression of a deeper understanding of reality. See *Schiaffini*, 2002, p. 82. Boccioni partly applies Hugo Magnus's theory in order to express the movement of the future, see *Meighan*, 1998, pp. 212–213. On the development of the perception of color, see *Magnus*, 1877; as well as the contribution by *Schöntag*, 2005, in particular pp. 297–300.

Notti filtrate (no title, Fig. 4) might refer to the previous use of colors which was abandoned in favor of the more innovative version in blue.[52]

Edyth, however, not only worked as an artist. In her articles published in *L'Italia futurista*, she analyzed the positively changing role of women resulting from the absence of men who had been sent to the front.[53] In addition to its fascination for occult sciences, the group around *L'Italia futurista* was characterized by an unusually high number of women.[54] The Florentine periodical contained many articles, poems, reviews or *Parole in libertà* by Fulvia Giuliani, Irma Valeria, Eva Kuhn Amendola (alias Magamal), Emma Marpillero, Enif Robert, Mina della Pergola, Fanny Dini, Enrica Piubellini and Marj Carbonaro. Furthermore, the writer Maria Ginanni (1891–1953) was also the editor of *Edizioni de l'Italia futurista* which published Futurist books. The debate on gender among Futurists could also be understood as a reaction to Marinetti's *Come si seducono le donne* (How to Seduce Women, 1917), a controversially discussed book. Mari Annetta (alias Comtesse du Aubrun), for example, wrote a parody titled *Come si seducono gli uomini* (How to Seduce Men, 1918).[55] The lively discussion created a new column in the *L'Italia futurista,* called *Donne-amore-bellezza* (Women-Love-Beauty). It is remarkable that the women who published in this column did not express a uniform opinion. Instead, they described very diverse ideas of the new "image of women". Edyth's reflections also

52 So far, this four-color drawing has not been dealt with in Futurist research. It is only due to an entry on the artist in the archive of Artglobal that the author is familiar with it: http://www.artglobal.cn/artist/readit.php?newsid=1803 (accessed on December 12, 2012). Unfortunately, this page can no longer be accessed. It cannot be said for sure whether this drawing is a forgery.

53 See also *Re*, 1994, p. 319. Edyth's texts were published in 1917: "Le donne del posdomani" (The Women of the Day after Tomorrow), in: *L'Italia futurista*, No. 18 (June 17, 1917), p. 1; "Risposta a Jean-Jacques" (Reply to Jean-Jacques), ibid. No. 20 (July 1, 1917), p. 2, and "Le donne cambiano finalmente" (Women Finally Change), ibid. No. 27 (Aug. 26, 1917), p. 2. Valentina Mosco also provides a profound analysis of Rosà's texts in her subchapter "Rosa Rosà, futurista protofemminista?", in: *Mosco*, 2009, pp. 116–121; Re, 1989,pp. 263–269, as well as *Re*, 2014, pp. 184–187. Renate Berger also addressed the situation of women who tried to establish themselves as artists, see *Berger*, 1982.

54 A very rare phenomenon at that time which also characterized the artistic group AENIGMA founded in Munich (1918–ca.1928). Their works, in turn, were strongly influenced by anthroposophical thinking. Reinhold J. Fäth argued this in his lecture "Artists within and around the group AENIGMA (1918–ca. 1928)", delivered on Sept. 27, 2013 at the conference *Enchanted Modernities: Theosophy, Modernism and the Arts, c. 1875–1960,* in Cambridge.

55 *Marinetti*, 1917, and *Annetta*, 1918.

opposed the female ideal of the housewife and mother glorified by the regime of Benito Mussolini. Nevertheless, she participated in the exhibitions *Associazione Nazionale Fascista Donne Artiste e Laureate* during the 1930s.[56]

The artist herself reflected on the impressive complexity of her situation by stating that she was "not a Feminist but 'an -ist' for which the first part of the word has yet to be found".[57] Elaborating on this thought, she may well have refused to be called a "Spiritist" even though spiritism played a major role in her life. Also, the denomination "Futurist" seems out of the question for her. Yet, her participation in the Futurist movement turned out to be quite successful, even though she was an Austrian living in Italy at the beginning of World War I and a wife and mother of four children. Certainly, her connection to Italian Futurism helped her overcome the boundaries of her bourgeois life and to become a versatile, self-transforming woman "with many souls." The way to achieve all this, as I suggest, was paved by her interest in spiritism. Several studies from different perspectives have examined the artist and her work; however, a monograph of her complete works still remains a desideratum.[58] This is complicated by the fact that only a small number of her works are extant, some of which are in part only documented by correspondence, photographs or auctions.[59] For example, the colored drawing, *Mona Vanna* (Fig. 5), presumably done in the 1920s, has not yet been studied by Futurism scholars. It may have been the artist's attempt to include the meaning of color tones, but unfortunately only a black and white picture has so far been found.[60] The predominantly abstract drawing is reminiscent of some of Gustav

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56 These documents are mentioned by *Pancotto*, 2004, p. 28. Edyth's anti-Fascist attitude culminated in 1943 when she was prosecuted and arrested for having helped a Jewish family. This is documented by *Proietti*, 2017, p. 40. On the activities of the *Associazione Nazionale Fascista Donne Artiste e Laureate* and the strained relationship between the female artists and Mussolini's regime, see *Spinazzè*, 2001.

57 *"Lei vede, non sono femminista. – Sono un'<ista>, percui la prima parte della parola ancora non è trovato*", see *Rosà*, 1917, *L'Italia futurista 2*(20), p. 2.

58 See for example *Salaris*, 1982; Bello *Minciacchi*, 2007; *Bentivoglio/Zoccoli*, 2008; *Carpi*, 2009; *Verdone*, 1971; *Verdone*, 1995; *Salaris*, 1981; *Hanstein,* "Edyth von Haynau", 2015; *Hanstein* 2019; *Proietti*, 2017. Lanza's publication reads more like a narrative than a scientific study, see *Lanza*, 2014.

59 A direct view of an abstract painting by Edyth is only provided by a photograph from 1919 which shows the artist working on the picture titled "Bandiere", reproduced in *Salaris*, 1981, p. 26. Maria Luisa Fiumi documents the expressiveness of several paintings which were exhibited in the Lyceum, see *Fiumi*, 1922, p. 23.

60 The drawing was listed in an auction of the Munich auction house Neumeister, see Neumeister, 1994. For more information, see also *Hanstein*, "Edyth von Hay-

Klimt's (1862–1918) depictions of women. Strongly simplified, the painting shows the silhouette of a woman with her arms bent, leaning slightly to the right. To her left, the same representation appears from another angle. The oval forms surrounding the women are painted in different sizes and densities, which evoke an association with eyes. This could be interpreted as another example of Edyth's visualization of a modern woman, as the title can be understood as an allusion to the play Monna Vanna (1902) by Maurice Maeterlinck (1862–1949), which introduced a new type of woman.[61] The play's overturning of traditional role models and depiction of a self-determined woman would be perfectly in line with Edyth's interests. In another book, Maeterlinck analyzed the figure of the medium and his extrasensory abilities—in a similar vein to the novel *Sam Dunn è morto* —and thus, it is likely that Edyth was familiar with him.[62]

Later on, Edyth was to produce colored drawings for two fairy tale books by Ernst Roenau, albeit without any Futurist elements.[63] The only oil painting known to this day, *Anticolana alla fonte*, probably created before 1935, shows a woman with a headscarf carrying a clay vessel.[64] The motif of working women can also be found in some of Edyth's photographs held by the Alinari Archive—this attests to the artist's lasting interest in the depiction of women.[65] Working into old age, Edyth produced several novels and drawings before she died in Rome in 1978.

Examining her artistic and literary works as a whole is the prerequisite for an international treatment of her body of work. Therefore, traces of her lost works will be sought in archival materials and auctions, and will be analyzed against the backdrop of her post-Futurist work and the rarely

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nau", 2015, pp. 353–354. At the same auction, three other drawings by Edyth were for sale ("The Widow", "Salome" and "Cherchez la femme"). Unfortunately, the new owner has not been identified yet which is why the authenticity of the works remains in question.

61 For more on this play, see the observations in *Goldman*, 1914, pp. 129–137.

62 Růžena's interest in Maurice Maeterlinck's book *L'Hote inconnu* from 1917 (original English edition: 1914) is documented, see *Giorgini*, 2012, p. 113.

63 *Roenau*, 1922; *Roenau*, 1923.

64 Reproduced in *Pancotto*, 2004, p. 54.

65 Ferruccio Malandrini's collection also contains many photographs of activities taking place during the annual Palio in Siena. The collection is mentioned by *Lanza*, 2014, p. 121. Unfortunately, only photographs and no other drawings or works by the artist are part of it. Both archives can be consulted online: https://www.alinari.it/it/ricerca?q=edith+arnaldi as well as https://opereweb.fondazionemps.it/Malandrini.aspx?p=8. An overview of her known works and her exhibitions is given by *Hanstein*, "Edyth von Haynau", 2015, pp. 335–338.

studied photographs, in order to redefine Edyth's role within the context of Italian modernism and the development of a newly emerging image of women.

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The permission for publication of the works of Edyth von Haynau was kindly given by Cristina Fornari, Luca Fornari and Ranieri Fornari.

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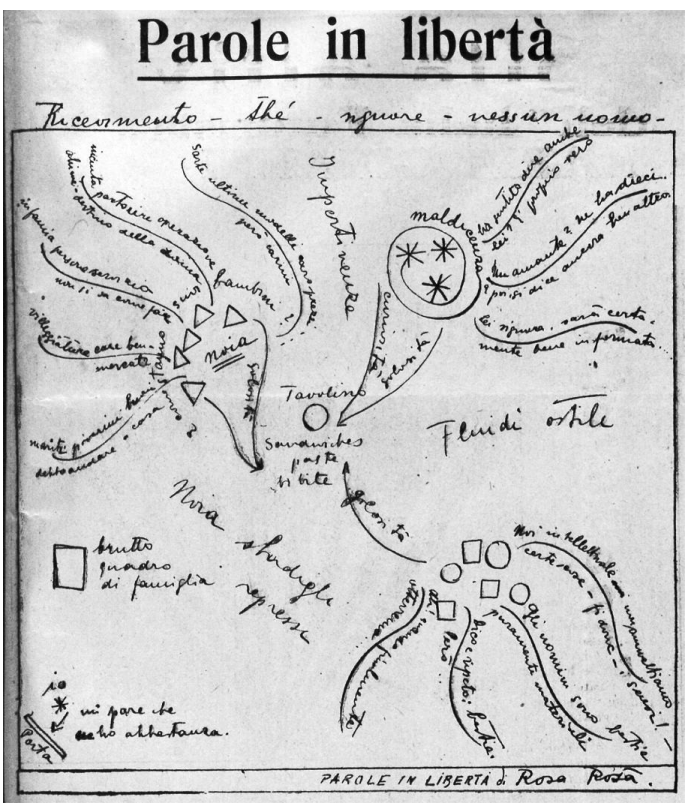

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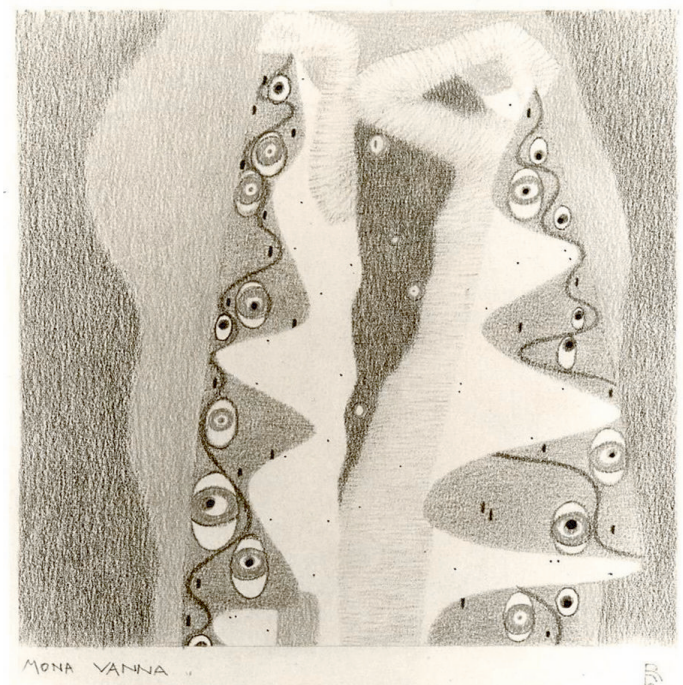

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Lisa Hanstein received her PhD in art history from Goethe University Frankfurt in 2015 and currently holds the position of Academic Assistant in the library at the Kunsthistorisches Institut in Florenz – Max-Planck-Institut, in Florence. In 2018 she completed her Masters in Library and Information Science and was presented with the Ulrich-Hahn-Award in 2004. She specializes in Italian Futurism, focusing on the impact of psychology, spiritism and science on Italian Futurist art. Surprisingly, many female Futurists showed an interest in paranormal phenomena. This led to her current research project on Edyth von Haynau, which is also particular interesting in terms of the role of women in Italy in the early twentieth century. The institute's library holds a special collection on Futurism which, in conjunction with the two directors and their staff, provides an excellent scientific environment for studying Futurism. She co-organized a conference at the Institute on the role of Italian Futurism within the broader context of international avant-garde movements and co-curated the related publication "Altri futurismi", the Futurist online exhibition "*ZANG TUMB TUUM…*", as well as the digital archive on Futurism in Florence "PRO FIRENZE FUTURISTA". She has published several articles on Futurism and on the Institute's Futurism Archive.

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ABOUT THE INSTITUTE

Kunsthistorisches Institut in Florenz – Max Planck Institute
The Kunsthistorisches Institut in Florenz (KHI) is a research institute dedicated to the history of art and architecture. Its main focus is on the art and visual culture of Italy, Europe, and the Mediterranean in a global perspective. Founded in 1897 on a private initiative of a group of scholars, the KHI is one of the oldest institutions for art-historical research. It has been part of the Max Planck Society since 2002. The KHI is particularly committed to supporting, advancing and connecting international young academics.

It has an extensive Library and Photothek which are open for international research. The Library's holdings today cover the history of European art and culture, focusing on Italy, from Late Antiquity to the present day, concentrating on topics relating to the intercultural, international, intercontinental and interdisciplinary contextualization of Italian art. The original works of Futurism are part of the Library's specialist collections.

Current individual and collaborative projects at the KHI are concerned with a variety of subjects, such as transcultural dynamics, ethics and architecture, history of science and of museums, photography, the relationship between aesthetics and ecology, languages of art and art history, image/language, and interactions between discourses on images and objects.

Between Commitment and Disengagement: The Art of Women in Rome in the Sixties

Giorgia Gastaldon
Bibliotheca Hertziana

ABSTRACT
My research project is dedicated to the work of several Italian female artists active in Rome in the 1960s. Part of the generation born between the 1920s and the 1930s, they shared the need to coin their own personal and subjective notion of being a woman, despite the fact they had been forced between the influence of the Fascist feminine culture in which they grew up and the feminist movements that characterized 1968. My research questions focus on potential connections between art made by women and the rise of feminist movements in Italy in the 1960s. The research investigates how hard it was to be a female artist in the Sixties and how many stereotypes an Italian woman artist had to deal with at that time (and still do today).

My postdoctoral research project was developed at the Bibliotheca Hertziana – Max Planck Institute for Art History in Rome, and focuses on the art of women who were active in the Italian capital city during the 1960s. The project is part of Rome Contemporary, a research initiative started at this same Institute and dedicated to the study of the artistic context in Rome, covering a chronological timeline which spans the WWII post-war period to the present.[1]

My research focuses on the work of women belonging to the generation born between the 1920s and 1930s, who grew up during the peak of the fascist regime and who became active as artists only in the post-WWII period. This generation was characterized in particular by the necessity to articulate and coin its own personal and subjective notions of womanhood. These artists were constrained between the two contrasting polarities of the cultural impact of fascism and the recent feminist revolution. In fact,

1 I would like to especially thank Tristan Weddigen, Maria Bremer, Marica Antonucci, and Marieke von Bernstorff for their support with the present research. Where not stated otherwise, translations are mine.

during their upbringing, they had been strongly influenced by the female culture of fascism, which expected women to be subordinate to men as wives and in their primary role as mothers. On the other hand, however, they could certainly not recognize themselves as part of those generations who benefitted immediately and directly from the feminist revolution of 1968; from the feminist theory which followed in the 1970s; or from the debate within similar movements which had developed, for example, across the border in France and in the United States.

These artists found themselves acting within an isolated context of minority. Among its many achievements, feminism highlighted the underrepresentation of the female gender within the world of art. Therefore, beginning in the 1970s, cultural professionals—critics, gallerists, museum and institutional representatives—started acting more carefully in their choices favoring women. At the same time, and acting in parallel, this period witnessed the birth of a series of institutions and spaces dedicated solely to women artists. None of this existed in the 1960s and, as a result, females in this decade lacked the tools which would arrive later.

For all these reasons, during the 1960s, the female artists belonging to this generation had to develop a pre-feminist female identity within their artistic research, which was individual and subjective, before the establishment of a collective one. The Italian movements did not appear miraculously and autonomously between 1968 and 1970, but were nurtured by the suggestions and ideas that had been circulating around the country since the early 1960s. Female artists, writers and art critics who were active in that decade spread these first feminist movements through their research and actions, without the need for labels, and oriented their cultural work in such a direction. It was during the 1960s that the first fundamental writings of feminist thought were published in Italy, including *Le Deuxième Sexe* by Simone de Beauvoir—published in France in 1949, but only translated into Italian in 1961—and *The Feminine Mystique* by Betty Friedan, a volume published in the United States in 1963 and translated into Italian one year later.[2]

Furthermore, in Italy, the relationship between art and "the birth of feminism" was particularly strong. As evidence of this link, it is sufficient to consider the circumstances in which the first Italian feminist manifesto —*Manifesto di Rivolta Femminile* (1970), which means "manifesto of feminine revolt"—was written by three authors: Carla Accardi, Carla Lonzi and Elvira Banotti, two of whom came from the world of art—namely, a

2 *Beauvoir*, 1961; and *Friedan*, 1964.

painter (Accardi), and an art critic and historian (Lonzi).[3] As friends and colleagues, Accardi and Lonzi first collaborated in the development of certain actions of feminist activism. However, they eventually ceased working together due to different points of view about the possibility of actually changing the system of the arts, which they perceived as patriarchal and sexist, towards a feminist perspective. Carla Accardi thought that women artists should be able to carry on their activity and career, trying, with their actions, to effect change within the world of art as it had been up until that moment and trying, with their works, to achieve new and more equal spaces of visibility.[4] By contrast, according to Carla Lonzi, such a change was not possible and she chose to put an end to any form of professional relationship with contemporary art—a field in which she had been particularly active as a critic and curator of exhibitions during the 1960s. She expected, and almost demanded, that her female colleagues, who were active in more traditional expository circles, embrace the same attitude.[5]

Furthermore, Rome certainly represents a special place for the study of these phenomena, as they played a crucial role in the development of Italian feminist movements. Besides being the city where, in the early sixties, Accardi and Lonzi first met, Rome also provided the context within which Rivolta Femminile, one of the most important militant feminist groups, was founded; and which was soon followed by many other groups in Italy. For all these reasons, Rome represented a privileged location for the incubation of feminist turmoil and upheaval, even before 1968.

Together with Milan, Rome also benefited from privileged relationships with other countries such as France, the United States and Great Britain, which proved fundamental for the development of a feminist consciousness, as well as new ideas of contemporary art aesthetics.

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3 *Lonzi/Accardi/Banotti*, 1974. The third author, Elvira Banotti, in addition to being a feminist activist, was a long-time journalist and writer.

4 It is in this direction that we should interpret the initiative, managed by Carla Accardi, together with other artists including Eva Menzio and Suzanne Santoro—carried out by Cooperativa Beato Angelico, an expository space opened in Rome in 1976 and dedicated specifically to the art of women. Accardi recalled in an interview in 2004, "We knew everything, were aware of everything, in fact we opened a small gallery where we organised some exhibitions. I left it in the end because those kinds of discussions tended to limit me." ("*Noi sapevamo tutto, eravamo al corrente di tutto, infatti abbiamo messo su una piccola galleria dove abbiamo organizzato qualche mostra. C'erano delle giovani, facevamo delle riunioni. Me ne sono andata alla fine perché quelle discussioni tendevano a bloccarmi*"), from *Obrist,* 2004.

5 For further information on the relationship and the differences between Lonzi and Accardi, refer to: *Iamurri*, 2016; and *Zapperi*, 2017 (in particular Chapter 5).

It is also necessary to remember that Rome in the 1970s was the undisputed capital of Italian television and cinema and, thanks to the competitiveness of the production expenses of Cinecittà Studios, also became a branch of the great American cinema. From the end of the Second World War, this phenomenon accelerated cultural exchanges between Rome and the United States, which was also particularly active in the field of contemporary art, thus starting the debate around the new forms of cultural colonialism that were imposing a new consumerist lifestyle on European countries, as well as more elaborate, although still traditional, visions of social roles.

The 1960s therefore represented a crucial time in history for the development of forms of gender consciousness in Italy. By that time, Italian women had started to be aware of their own position and condition within society, going through a true "gender crisis". It is a historical fact that in Italy—more than in other Western countries—women have always represented a type of "reserve army;" after being mobilized and inserted into roles of responsibility during times of emergency, they were then invited to return to their domestic environments once danger had been evaded. Things were no different with the Second World War, and data on female employment in the years starting from 1945 fully confirm this tendency. As a matter of fact, in 1962, the increase in the rate of female employment in Italy completely stopped. From 1958 to 1963—the five years of the so-called "Italian miracle"—women still had good opportunities for employment, although many of them, especially those belonging to the richest classes, had already resumed a fully domestic life. At the first signs of the economic crisis which gripped the country between 1963 and 1964, it was clear how job positions occupied by women would be the first to be sacrificed. However, "a massive cut of female labor" was registered: "between 1959 and 1965, the specific rate of the presence of women in the job market was reduced by over a million units […] In general, the national index of female occupation registered during these five years saw a neat decrease of 15.6 points."[6]

The women of this new generation were increasingly excluded from the manufacturing workforce, and were certainly involved in a less active way in society when compared to their mothers and grandmothers. For them, a

6 "[fu registrata] una massiccia espulsione della manodopera femminile [...] fra il 1959 e il 1965 il tasso specifico di presenza delle donne nel mercato del lavoro si ridusse di oltre un milione di unità.[…] In generale, l'indice nazionale di occupazione femminile registrò in questi cinque anni una diminuzione netta di 15,6 punti"—*Lussana*, 2012, p. 25.

"golden world" had been promptly created—a new culture to which women were supposed to adapt, both publicly and privately. The sixties represented the so-called "golden age of the housewife," both in Italy and in the rest of the Western world, which was effectively described by Fiamma Lussana in a study dedicated to the Italian feminist movements. She states: "[T]he economic growth is accompanied by the great illusions of the achievement of wealth, the happiness of appliances, the building of an imaginary modern and accomplished woman. Starting from 1954 with the advent of TV shows, models of behavior, lifestyle and consumer choices started to change."[7]

Thus, the stimlui linked to the "Italian miracle" started to act, for strictly economic reasons, on the elaboration of precise female models whose omnipresence made them the instruments by which one oriented one's lifestyle and subsequent consumerist behavior. The formulation of a definite image of the "perfect housewife" played a crucial role in this direction; it was, in fact, carpet-bombed by all the media that were accessible to women, from television to women's magazines, including Italian publications such as *Amica*, *Grazia*, *Annabella*, and Gioia. As feminist journalist Giovanna Pozzuoli perceptively noted in 1976, "the existence itself of a specialized female press 'for the women', besides its implicit paternalism, reveals the true intention of anchoring women to an institutionalized image of femininity, providing them with 'suitable' cultural products and relegating them to a particular universe, whose borders are being 'dictated'… [by] putting itself within the system and its requests, and by motivating its choice according the usual logic of profit (to be liked by the possible highest number of female readers), female press is contributing to keeping women in their present condition, perfectly functional to the conservation of the usual relationships of capitalist production."[8]

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7 "alla crescita economica si accompagnano le grandi illusioni del raggiunto benessere, la felicità degli elettrodomestici, la costruzione di un'immaginaria donna moderna e realizzata. A partire dal 1954, con l'inizio delle trasmissioni televisive, cominciano a cambiare i modelli di comportamento, stili di vita, scelte di consume"— *Lussana*, 2012, p. 26.

8 "l'esistenza stessa di una stampa femminile specializzata "per le donne", al di là dell'implicito paternalismo, rivela il chiaro intento di ancorare la donna a un'immagine istituzionalizzata della femminilità, fornendole prodotti culturali "adatti" e relegandola in un universo particolare, i cui confini vengono "dettati". (…) Ponendosi all'interno del sistema e delle sue richieste e motivando la sua scelta secondo la consueta logica del profitto (essere di gradimento a quante più lettrici-tipo possibile), la stampa femminile contribuisce a mantenere le donne nella loro attuale

The model of the "perfect housewife", elaborated in Italy between the fifties and the sixties, expected women to be young, attractive, modern, and supported in their household chores by the use of a series of brand new appliances, the possession of which made them progressive and accomplished. By that time, Italy was the number one exporter of appliances in the world, mostly refrigerators and washing machines—a situation which should not be forgotten.[9] Considering how household chores were certainly the main occupation and preoccupation of the women described in these predominant models, advertisements never missed the chance to display the "perfect housewife", transformed into an intelligent consumer because her whole identity was bound up with the possession, or lack of, the most modern appliances, which were true status symbols for young Italian women in the 1960s. An advertisement dating to 1966 perfectly exemplifies this attitude. Aimed at promoting a new model of washing machine (the Candy Superautomatic 5), its text stated: "She is a 'Mrs. Candy', so intelligent and modern, her washing machine is Candy" (see Fig. 1).[10] The subject of this advertisement was not a housewife, but an employed woman—a nursery teacher, depicted in her workplace, dressed in a blue uniform and surrounded by small children. Despite this, she was defined as "intelligent and modern", just like her washing machine; she was not defined by her personality or profession, but by the far-sightedness with which she had chosen the brand of her household's appliances.

Betty Friedan's sensational journalistic enquiry, *The Feminine Mystique*, arrived to denounce the falseness and inadequacy—as well as, perhaps, the chauvinism—of this particular female model. Published in the United States in 1963, it was translated just one year later into Italian as *La mistica della femminilità* (see Fig. 2).[11] The report denounced the disquieting feelings which animated the lives of the "perfect American housewives", who,

condizione, perfettamente funzionale alla conservazione degli stessi rapporti di produzione capitalistici"—*Pezzuoli*, 1976, p. 13.

9 Le Officine meccaniche Eden Fumagalli (OMEF) in Monza, started the production of Candy appliances in 1946. In 1957, the Candy Bi-Matic, the washing machine which revolutionized the international system of household appliances, was first launched in the market. In the mid-1960s, this enabled the Italian factory to reach the European peak of production and sales of washing machines, competing with the well-established British factory, Hoover. See *Asquer*, 2007.

10 In: *Tempo*, 16 February 1966 (back cover).

11 Betty Friedan's volume was translated into Italian exceptionally quickly, considering the times and practices that were typical of the publishing environment at that time. It is not a coincidence, in fact, that the initiative was carried out by Edizioni di Comunità, a publishing house founded in Milan in 1946 by Adriano

when interviewed one by one by the author, testified to common discomforts and described in very similar ways a sort of "unexpressed problem" which characterized their daily lives. Friedan started her essay with these words: "I came to realize that something is very wrong with the way American women are trying to live their lives today […] I sensed it first as a question in my own life, as a wife and mother of three small children, half-guiltily, and therefore half-heartedly, almost in spite of myself, using my abilities and education in work that took me away from home […]. The problems and satisfaction of [our] lives […] simply did not fit the image of the modern American woman as she was written about in women's magazines [...] There was a strange discrepancy between the reality of our lives as women and the image to which we were trying to conform, the image that I came to call the feminine mystique".[12]

Friedan's volume brought to light the sense of frustration women felt by internalizing the strong discrepancy between what they were, or wanted to be, and what society expected them to be. Women felt, in short, "made up"; what they were did not correspond to a personal journey of accomplishment of the self, of their desires, or of their aspirations, but was a continuous and exhausting attempt to adhere to a stereotype designed and imposed by the market and a patriarchal society.

Friedan's journalistic inquiry immediately resonated worldwide and prompted many other female scholars to continue research in the same direction. In Italy, for example, many publications followed which denounced these mechanisms. Particularly in the 1970s, many female authors printed essays denouncing the work of female magazines, accusing them of being ideological tools for spreading and perpetuating gender stereotypes. For example, in 1975, in addition to the previously mentioned *La stampa femminile come ideologia* (*Female press as ideology*) by Giovanna Pezzuoli, the Guaraldi publishing house printed *Naturale come sei* (*Natural,*

Olivetti. Betty Friedan, a journalist with a degree in psychology, was later one of the founding members of the National Organization for Women (NOW Organization, 1966), the first feminist organisation in the United States of America.

12 "C'è qualcosa di fondamentalmente errato nel modo in cui le donne americane cercano di vivere la loro vita e l'ho avvertito dapprima nella mia vita, come moglie e madre di tre bambini che stava adoperando le proprie capacità e la propria istruzione in un'attività che la teneva lontana da casa, traendone quasi un senso di colpa": "i problemi e le soddisfazioni delle nostre vite (…) non s'attagliavano all'immagine della donna americana moderna di cui si scriveva nelle riviste femminili (…). C'è una curiosa discrepanza tra la realtà delle nostre vite di donna e l'immagine a cui cercavamo di conformarci, quell'immagine che a un certo punto ho deciso di chiamare la mistica della femminilità"—*Friedan*, 1964, p. 9.

as you are) by Milly Buonanno, another sociological inquiry dedicated to the gender press in Italy (see Fig. 3).[13] Then, in 1978, Rudy Stauder published the work: *Il femminese. Guida serissima al linguaggio della moda nelle riviste femminili*. This volume, whose ironic Italian title means *"Femalese. A serious guide to the language of fashion in female magazines"*, unmasked the forms of manipulation directed at female readers through the construction of a "reversed vocabulary". The term "classic" was, for example, defined as follows: "[W]hen fashion houses advertise their clothes with photographic sessions in female magazines, captions overflow with the adjective 'classic', immediately turning into a synonym for dim, flat, ugly. Beware then of surrendering to the seduction of 'classic' only because it is defined as such; chances are that 90% of you will end up looking like old Aunt Esterina when she is invited to tea at 5 p.m."[14]

In the 1960s, as far as the artistic press was concerned, the situation for Italian women was unfortunately no different. In specialized magazines, women artists were in fact strongly underrepresented in numerical terms. Moreover, the few articles devoted to them were negatively characterized by a stereotypical point of view in terms of gender.

The statistical analysis of the female presence in some of the most important avant-garde magazines printed in Italy in the sixties, such as *Metro* and *Marcatrè*, shows that only 6% of all monographical articles published in those pages (i.e., those entirely dedicated to the activity of one single artist) analyzed the work of a woman.[15] In addition, the nature of these texts was, in the majority of cases, almost negligible in terms of content—mainly consisting of short paragraphs announcing the opening of an exhibition in a gallery, and almost always appearing without illustrations or pictures. Furthermore, the few images relating to women artists that were permitted (due to reasons of expense and space), were mostly photographic portraits showing the physical features of the women who were subjects of the exhibitions, rather than their works.

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13 *Buonanno*, 1975.

14 "Classico […] quando le case di confezioni fanno pubblicità ai loro abiti attraverso i servizi fotografici sui giornali femminili, le didascalie traboccano dell'aggettivo 'classico', che diventa sinonimo di scialbo, piatto, bruttarello. Guardatevi, dunque, dal farvi sedurre dall'abito 'classico' solo perché così definito: con novanta possibilità su cento finireste con l'assomigliare alla vecchia zia Esterina quando è invitata al tè delle cinque"—*Stauder,* 1978, p. 21.

15 So far, this analysis has considered the issues raised in *Metro*, published in 1960–1967, and of *Marcatrè*, published in 1963–1967. My next goal is to widen the analysis and to compare the publishing situation in the 1960s with that of the following decade.

The words chosen to describe both the artists and their works usually focused more on the artists' gender rather than on their artistic production, as exemplified by an article by Marisa Volpi, published in 1961, about Carla Accardi. Despite being a woman herself, the writer did not hesitate to title her essay "Sensibilità, ritmo e fede nel lavoro di Carla Accardi "mite e decisa" ("Sensitivity, rhythm and faith in the work of Carla Accardi, 'gentle and determined'")*.*[16] Terms such as "sensitivity" "gentle", and "determined" are certainly not neutral and the artist could not help feel that it was her personality, not her art, being described. Accardi herself spoke several times about the forms of frustration provoked by this sort of occurrence. For example, in an interview from 2004, in recalling her condition as a woman artist in Rome in those years, Accardi stated: "I was sure I was doing something different from all other 'women artists'. To me, they were primarily painters, ladies who amused themselves by painting. I wanted to distance myself as much as possible from that image. I used to present myself as an 'artist' and not as a 'painter'".[17]

The idea of adopting certain statistical instruments to measure gender gap, thus unmasking women's underrepresentation in the world of art—especially in the years following the Second World War—lies, literally and historically, at the basis of gender studies. Linda Nochlin herself, applying gender thought for the first time to the history of art with her essay "Why Have There Been No Great Women Artists?", described how the idea of breaking the silence on such an important issue as the "inexistence" of women artists in the history of art came to her in November 1970, soon after she calculated some startling statistics.[18] In an article from 2006, she wrote: "I'd like to roll the clock back to November 1970, a time when there were no women's studies, no feminist theory, no African American studies, no queer theory, no postcolonial studies". "In art journals of record, such as *ARTnews*, out of a total of 81 major articles on artists, only 2 were devoted to women painters. In the following year, 10 out of 84 articles were devoted to women, but that includes the 9 articles in the special "Woman Issue" in January, in which "Why Have There Been No Great Women Artists?" appeared; without that issue, the total would have been one out of 84. *Artforum*, in 1970–1971, did a little better—5 articles on women out of 74".[19]

16 *Volpi*, 1961. As further evidence of what is mentioned above, this article only displayed a single image—a photographic portrait of Accardi.
17 Accardi quoted in: *Accardi/Beatrice/Politi*, 2004, p. 95.
18 *Nochlin*, 1971, pp. 22–39 and pp. 67–71.
19 *Nochlin*, 2006, p. 21.

"Counting themselves" and "counting" are thus concepts apparently inextricably linked when speaking about women's underrepresentation in the contemporary art world. Maura Reilley brilliantly demonstrated this idea in "Taking the Measure of Sexism: Facts, Figures and Fixes", an article published in 2015, in a special issue of *ARTnews* dedicated to the art of women.[20] This text consists of a statistical inquiry on the still overly small presence of female artists in the different systems of representation in contemporary art—museums, galleries, auction houses, specialized publications, international festivals—and stresses how, 45 years after "Why Have There Been No Great Women Artists?", despite evident steps having been taken to move forward, the gender gap is still an obvious issue. Numbers, once again, prove in a tangible and "indisputable way" that there is still a great deal of work to do in that direction; "yes, we need to keep circulating the numbers. Counting is, after all, a feminist strategy."[21]

Even today, the existence and the measurement of such a gender gap in the art world—and in many other environments—is an important topic and, therefore, it is even more necessary, in my opinion, to carry on research such as the present project in the context of 1960s Rome—that is to say, the recent past of the country where my research is being conducted.

With this aim and methodology, my research then focuses on three artists who were active in Rome in the sixties and on the work they produced in those years. I chose the three protagonists of my postdoctoral project research—Carla Accardi, Giosetta Fioroni and Laura Grisi—because they belong to the same generation and, equally, because of the almost "absolute" diversity of their artistic productions, which I have interpreted as forms of individual and subjective responses to common cultural and social dynamics.

Carla Accardi, as previously mentioned, played a fundamental role in the writing of *Manifesto di Rivolta Femminile* in 1970 (Fig. 4). A feminist activist from the very beginning, she never moved away from the "abstractionist turn", from her beginnings at the end of the 1940s, when she was a militant in the Forma group. Abstract painting was often perceived as the avant-garde "par excellence" and was thus labelled as misogynist and sexist, based as it was on the mythology of the genius creator and on the aggression typical of the paradigms of both its group and manifesto. However,

20 *Reilly*, 2015, pp. 39–47.

21 *Reilly*, 2015, p. 46. In 2018, a similar study was conducted on the Italian system of contemporary art: *Donne artiste in Italia, Presenza e rappresentazione*, Dipartimento di Arti Visive, NABA Nuova Accademia di Belle Arti, Milano 2018.

Accardi found her own way of staying within the world of abstract painting. Nevertheless, or perhaps exactly for this reason, she kept practicing this form of painting, which she transformed into a type of liberation and an expression of her own autonomous individuality. Moreover, the art of Carla Accardi made continuous and free references to the language of the historical avant-gardes, especially that of Futurism—the controversial historical movement which, despite having explicitly praised its own misogyny, had actually represented, de facto, the only avant-garde involving a considerable number of women in its ranks.

The painter's approach to painting was pragmatic, based on a continuous negotiation with a society and an environment dominated by men. Such a dialogue was also based on the idea that, in Accardi's opinion, there existed a complete separation between her political activity (first within the Communist Party, and then among the ranks of Feminism) and her painting, as she declared on many occasions. In 1994, for example, during an inquiry on gender differences in art, Accardi stated: "especially because I am an artist, I tend to avoid sociological reflections on my work. As Virginia Woolf once stated, a too-intense political involvement weakens the aesthetic form and the creative impulse".[22]

Contrary to Accardi, Giosetta Fioroni always worked in distinctly "pop" contexts, especially in the 1960s. Starting from 1963, she created works which often included the human figure, with a clear preference for female subjects. "In those years of 'feminism'", the artist would later declare, "I was more and more interested in the topic of the female dimension, to the feelings these women expressed through their sight, in the movement of a hand, in the attitude of their figure".[23]

Fioroni never actively joined any feminist groups or movements, but her work undeniably reflected on the concept of the woman's body, on its prepackaged image, and on its commodification and cultural exploitation for commercial purposes. Within a compositional layout that was reminiscent of comics, the artist depicted female figures, and their details, with a clear pop inspiration taken from fashion photography, cinema, and illustrated women's magazines. From 1965, the artist's works began showing female figures and female-related topics drawn in the Renaissance pictorial tradition, chosen as secular stereotypes of female beauty that can be explicitly traced back to Italian visual culture, such as in the artworks: "Da Botticelli, Venere" (1965), "Nascita di una Venere Op" (1965), "Le cortigiane

22 Accardi in: *Joelson/Scott*, 1994, p. 62.
23 Fioroni, in: *Bottazzi/Elettra/Fioroni/Giosetta*, 2016, p. 28.

(da Carpaccio)" (1966), and "Da Simonetta Vespucci" (1966). In all these works, the body of the woman was reduced to a simple image—outlines and silhouettes were repeated to unmask a process of objectifying bodies and reducing subjects to mere icons, consumed by a society of images and of tourism.

The references to the world of show business and advertising were, on the other hand, much more explicit, such as in the practice of resorting to titles such as "Cosmesi" (1963–1964, meaning "the 'world' of cosmetics", "Una lacrima sul viso" (1964, meaning "a tear on your face"—taken from a popular song presented at the Sanremo Festival that year by Bobby Solo), and "Faccia pubblicità" (1967, meaning "face advertising"). From 1965 onwards, nudes also appeared in Fioroni's paintings, conceived as a paradigm of the projection of the conformist and consumerist male gaze onto the bodies of their female peers, especially actresses and models. In works such as "Nudo di Rossana" (1965) and "Ritratto di Talitha Getty" (1965), women from modern society (in the case of Getty, a model and actress) were portrayed naked, assuming poses which alluded to the canon of art history, from Giorgione and Titian, Ingres and Manet.

In the poetic of Laura Grisi, the body of the artist (rather than the female figure per se) was included in the artistic and creative processes in a particularly unprecedented way; and her works were ahead of her time.

In some of her early works, such as the "Variable Paintings" series (1965–1966), the silhouette of Grisi appears, for example, as a shadow or reflection. These works feature different levels of depth, with sliding luminous plexiglas panels, which can be moved by the viewer. These works, which remind one of shop windows thanks to the presence of plexiglas and neon, represent an attempt to overcome the immobility of painting by including variation and the real movement of parts inside the work of art. Grisi's shadow or reflection is translated into a depersonalized representation of the human figure. However, at the same time, such an intervention characterizes the work in the direction of an ambiguity of roles, a confusion between the gazer and the gazed-upon. If, on the one hand, viewers can observe the silhouette of the artist beyond the transparent plexiglas panel (which is reminiscent of a window pane, but also of the reflective surface of a mirror), they find themselves being equally observed by the artist, who stares at them while they inspect her figure and her work, in mutual voyeurism.

In 1970, the artist's daily experiences and her own body became the subjects of her research, especially in works such as "Distillations: 3 Months of Looking". These series of actions—"*Guardo il sole*" (I am looking at the sun), "Guardo l'orizzonte" (I am looking at the horizon), and "Guardo la

mia pelle" (I am looking at my skin)—took place during a journey Laura Grisi took to the Leeward Islands, Sulu Archipelago, New Hebrides, the Philippines and Malaysia. "It was an analysis of my personal, visual, and physical sensations… it was almost an analysis that could be repeated as an experiment", as she explained in an interview in 1990.[24] The artist used her own body as a place of artistic experimentation and research, recording its reactions to different, sometimes extreme, atmospheric conditions.

Laura Grisi's research was always characterized by a high degree of autonomy, which isolated her from the dynamics of structured aesthetics and movements. Away from Italy for long periods of time in remote corners of the world, she was often away from art-world circles, with which she held an intermittent relationship. For this reason, her work always followed the criteria of individuality and subjectivity, also rejecting the dynamics of collective feminism. However, her female identity and body, present in many of her works dating from the sixties, were irrefutably at the center of her research.

As demonstrated here, my research project deals with the dynamics of researching individual women artists on the one hand, and community and social processes on the other, in the attempt to interpret the phenomenon of women's art in a given time and space. My research focuses on the meaning of being a woman artist in 1960s Italy, with all the practical difficulties stemming from the small visibility of their works, but also looking at the widespread gender stereotypes which led society to see women as fitting within a domestic space rather than in galleries and museums.

From this point of view, the relationship between diverse processes, that at first appear distant in time, and the active present is evident. If, on one hand, the art world today demonstrates that many steps forward have been taken, it also shows how much is still left to be achieved for the gender gap to be truly corrected and overcome. At this point in time, the contribution historical research can provide to our contemporary world takes on fundamental importance.

This contribution has been translated by Dr. Caterina Guardini.

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24 Grisi quoted in: *Celant*, Laura Grisi. A Selection of Works with Notes by the Artist. Essay-Interview, New York 1990, p. 34.

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CAPTIONS

Fig. 1: Advertisement of Candy Superautomatic 5, in Tempo (7), 16 February 1966—back cover.

Fig. 2: Betty Friedan's La mistica della femminilità—cover of the Italian edition, 1964.

Fig. 3: Milly Buonanno's Naturale come sei. Indagine sulla stampa femminile in Italia (1975)—cover.

ABOUT THE AUTHOR

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Giorgia Gastaldon is currently a postdoctoral researcher at the Bibliotheca Hertziana – Max Planck Institute for Art History as part of the research initiative *Rome Contemporary*, with a project focused on the phenomenon of proto-feminism in the arts in Rome. In 2014, she obtained a PhD in Art History from the University of Udine with a dissertation on Mario Schifano's painting (1958–1964). At the same university, she had previously studied Preservation of Artistic and Architectonic Heritage (BA, 2007) and Art History (MA, 2010). In 2017, she was awarded a postdoctoral fellowship at the Center for Art Studies Licia and Carlo Ludovico Ragghianti (Lucca, Italy), where she developed a research project on "Carlo Ludovico Ragghianti and the Museum of Contemporary Art in Florence: story of a vision for a city", which has now become a book (2019). Between 2014 and 2016, Giorgia spent two years as a research fellow in the framework of the ministerial project *Fondo per gli Investimenti della Ricerca di Base* "Spreading visual culture: contemporary art through periodicals, archives and illustrations". In addition to her academic career, she has been working as a curator of contemporary art exhibitions and between 2015 and 2019 she was appointed as scientific director of Palinsesti (San Vito al Tagliamento, PN). Giorgia has published several essays and scientific articles which focused, in particular, on the reception of American art in Italy in the fifties and sixties, the role played by magazines in keeping Italian artists up to date with the most recent trends in the art world, and on the cultural panorama of post-WWII Rome.

ABOUT THE INSTITUTE

Bibliotheca Hertziana – Max Planck Institute for Art History
Research Initiative: Rome Contemporary
The Rome Contemporary Initiative aims at investigating the artistic and cultural productions of visual art, theater, film and architecture emerging in Rome, taking into account their interdependence with international debates. Identifying the respective framework of reference of these productions helps clarify the relationship between the Roman artistic and cultural scene, and its time. In so doing, Rome Contemporary takes a stand against the modern and contemporary topoi of deterritorialization. Contradicting the historiographical trend towards uniformization reinforced by the rise of global perspectives, the initiative aims at emphasizing, along with the

historical and spatial situatedness of its objects, the heteronomous character of artistic and cultural idioms. In the framework of the initiative, my project analyses the special condition of Italian women in the sixties, between gender stereotypes and identity questions, and also investigates the particular relation between the rise of the early Italian feminist movements and the cultural system of Rome.

Gender Roles in 14th and 15th Century Italian Art

Philine Helas
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ABSTRACT
This article is concerned with the way in which women and men were represented in 14th and 15th century Italian art. Due to the fact that the practice of the "works of mercy" is a central dogma of Christianity, poverty and illness, as well as the charitable acts responding to them, were generally a frequent subject of art at this time. Here, however, the emphasis is on pictorial programs of hospitals and brotherhoods. Conventions of representation tend to be transported and transformed over very long periods of time. They have the potential to unmask historical structures and also to actively contribute to processes of societal transformation. Hence, it is important that the visual self-representation of the Max Planck Society should reflect a gender-equal society.

The history of art as a discipline is concerned with describing, attributing, dating and interpreting works of art, with research into artistic creativity and its embedding in and impact on social and cultural developments, as well as with individual artists' personalities. The perspective of gender research or questions and interpretations resulting from the diversity of conditions for men and women—whether as artists, as patrons of the arts or as the subject of artworks—can be relevant in a variety of ways. Feminist art history has now become a field of research in its own right.[1] But even in research not explicitly committed to a feminist approach, gender-specific aspects should be taken into account when analyzing images. This applies with equal validity to the works of art of the Middle Ages and to the visual media of our time, whose pictorial language frequently draws on age-old conventions. The visual representation of the Max Planck Society is not exempt from this.

Using my own research interests as a point of departure, the following article offers a brief insight into the representational conventions of pictorial programs in the context of healthcare and charity for the poor in 14th

1 See, for example, *Burfoot* 2015; *Robinson* 2015; *Rose/Poe*, 2015.

and 15th century Italian art, focusing on the different representations of women and men.[2] No state health or welfare systems existed during this period, but instead a large number of charitable organizations, usually rooted in lay confraternities, but in some cases also in municipal or private initiatives, constructed buildings and furnished them with sculpted and painted artworks, altarpieces, illuminated manuscripts and liturgical objects. The pictorial programs could either refer to the institution itself or depict the theme of Christian charity in different ways.[3] Yet, poverty and illness and the charitable actions responding to them are also frequent subjects of Christian art in general, inasmuch as the "Works of Mercy" are enshrined in the Bible as indispensable for gaining entrance to paradise and are consequently a central dogma of Christianity. The Gospel of Matthew (25:34–46) lists six necessary "Works of Mercy": feeding the hungry, giving drink to the thirsty, clothing the naked, offering shelter to strangers, attending to the sick, and visiting prisoners. In this context, Christ, as judge of the world, says the sentence which defines charity as a Christian duty: "Truly, I say to you, as you did it to one of the least of these my brethren, you did it to me". Burying the dead, which is described in the Bible as an exemplary act, for instance in the Book of Tobit (1:17–20), was added as a seventh work of mercy in the Middle Ages.[4] Both male and female saints are therefore often portrayed as benefactors; for example, when healing the sick or distributing alms to the poor. Artists tended to transpose both allegorical and narrative depictions into their own time as far as location, architecture, clothing and material objects were concerned, so that it would be logical to examine such paintings with a view to gaining insights into the period in which they were created.

A difference can be observed in the representation of men and women in depictions of charitable acts, which allows for conclusions to be drawn about female and male roles in society. There are far more men than women portrayed in the role of the needy. Similarly, in contrast to a few wom-

2 This research is based on my work at the special research center SFB 600 "Fremdheit und Armut. Wandel von Inklusions- und Exklusionsformen von der Antike bis zur Gegenwart" [Strangers and Poor People. Changing Patterns of Inclusion and Exclusion from Classical Antiquity to the Present Day Strangers amd Poor People. Changing Patterns of Inclusion and Exclusion from Classical Antiquity to the Present Day] at Trier University.

3 See, for example, *Helas/Wolf*, 2006; *Nichols* 2007; *Ritzerfeld*, 2007; *Armut. Perspektiven in Kunst und Gesellschaft*, *Uerlings/Trauth/Clemens*, 2011.

4 On the depictions of the Works of Mercy, see *van Bühren*, 1998 and *Botana*, 2011.

an, such as Saint Lucia,[5] or couples, such as Anna and Joachim, the parents of Mary[6], we encounter far more male protagonists in the role of benefactor. This is the case, for example, in a fresco painted around 1400 by Niccolò di Pietro Gerini in the Franciscan church in Prato, which shows "Saint Anthony Abbas distributing his inheritance to those in need".[7] Whereas many of the men show signs of illness and injury, the only woman in the painting is characterized as old, probably representing a poor widow.[8] The same theme was presented in a similar fashion at roughly the same time in Cascia.[9] There is only one woman among all the pilgrims, the rest of the figures are male and most of them are maimed. In this case, it is a mother with a baby in her arms, who can be identified as poor by her clothes and torn shoe. The fresco "St. Lawrence distributing the treasures of the Church to the poor", painted by Fra Angelico in the Cappella Niccolina in the Vatican Palace in Rome around 1440, allots more space to women, yet the role patterns are the same. While four of the five men are visibly maimed, crippled or blind, the women are once again portrayed as a young mother, a widow and a pilgrim.[10]

In each case we see scenes from the life of an early Christian saint which, in terms of clothing and decor, are transported to the world of around 1400–1450. Is it legitimate to draw conclusions about the reality of that time from the discrepancy in the representation of the sexes? We can assume that men were more likely to suffer physical injury at work or in battle, whereas women were generally dependent on a male provider, so that widows could fall into poverty rather easily. Men had a stronger presence in public life, whether in political or social functions or as workers, whereas the sphere of the home and household was the reserve of women. Only a few women stand out, such as Santa Francesca Romana (1384–1441), a married woman with children who cared for the poor and sick in

5 A panel by Jacobello del Fiore from a cycle illustrating her vita shows her together with an assistant and four crippled men as recipients. http://www.beniculturali.marche.it/Ricerca.aspx?ids=16481.

6 In a miniature contained in the Book of Hours by Giangaleazzo Visconti, which originated between 1388 and 1428, they distribute alms to 6 male paupers. *Bollati*, 2003, p. 260, ill. 138.

7 *Helas*, 2011, especially pp. 129–135, ill. 2–4.

8 On the modes of representation, see *Helas*, 2009, pp. 369–392; and *Helas*, 2013, pp. 51–105.

9 On the cycle of frescoes by an unknown artist (Maestro della Dormitio di Terni) in the apsis of the church of Sant'Antonio Abate, see *Gentilini/Chiari*, 2013, pp. 152–163, ill. 2.

10 For more on the cycle, see *Roettgen*, 1996, pp. 204–223, ill. 130.

Rome at the beginning of the 15th century and founded a female congregation of Oblate women. They settled in Tor de' Specchi at the foot of the Capitol, where a chapel housing a fresco cycle was dedicated to Francesca in 1468.[11] However, discrepancies between the pictorial representation and written sources of the time can also be observed in her person. While the testimonies for her canonization process prove that the vast majority of those she was able to help were women, the fresco cycle dedicated to her *vita* predominantly depicts her healing men.[12] The same applies to the people in the picture who are gathered before her as she lies in repose, hoping to be healed. Prominent on the right and left are men with various physical ailments—including the lame, the possessed and the blind—while the women are represented as two groups—the Oblate women on the left and young women with children on the right.[13] This self-representation in the fresco cycle of the Oblate, which deviates from reality, might be due to the fact that the women in this community had to assert themselves in a society marked by patriarchal structures, in which miracles witnessed by men could be considered more important. Thus, the prominent representation of the male witnesses of Francesca's miracles might have served to strengthen the position of women.

In this respect, a pictorial program does not necessarily allow conclusions to be drawn about facts, but rather about the interests and social structures behind such a commission.

The cycle of frescoes executed between 1440 and 1444 in the Pellegrinaio—a hall in the Sienese hospital of Santa Maria della Scala—includes a series of eight picture fields that depict the history and activities of what was the largest urban hospital of its time. We can assume that those running the hospital wanted to create the impression of a realistic situation here.[14] The effect is further intensified by the fact that the picture fields seem to open up in an illusionist manner, tending towards a central perspective, and thus appear to be a continuation of the real space. Nonetheless, these are not photographic snapshots but, as can be seen immediately from the sometimes fanciful architecture and the appearance of a number of distinguished contemporaries, they are constructed pictorial worlds that also convey their message by means of symbolic and allegorical elements.

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11 *Böse*, 2008, pp. 3–89.
12 *Böse*, 2008, pp. 66–68.
13 *Böse*, 2008, ill. 9.
14 *Roettgen*, 1996, pp. 186–203; *Scharf*, 2001, *Costa/Ponticelli*, 2004, pp. 110–147; *Helas* 2013, pp. 91–95.

Hospitals in the Middle Ages were not hospitals in the modern sense of the word, and whoever could, would have themselves cared for and treated at home. Instead, they often served several other functions. They were used to provide welfare for the poor, as an orphanage, as a home for the aged, as a hostel for pilgrims, and to care for the sick; however, their main purpose was to house foreigners or those too poor to be able to afford medical care at home, as was commonly the case for wealthier people. But equally important as, if not even more important than, caring for the needs of the body was caring for the salvation of souls and the Christian sacraments connected with it: baptism, confession, the Lord's Supper, anointing the sick and a Christian funeral rite.[15] The management of such hospitals was usually in the hands of confraternities, which in turn typically had a female arm, as sick or needy women and children were normally cared for by women. However, the history of the Sienese Hospital is told from a male perspective with regard to its foundation and management. It begins on the one side of the room with the legend of how a cobbler is led by a vision to start an initiative to save unwanted children with the support of the cathedral canons.[16] The following three images depict the construction of the building, the appointment of the first rector of the hospital confraternity and the granting of privileges by Celestine III.[17] The four picture fields on the opposite side show the hospital's activities. The first of these is dedicated to nursing and is perhaps the oldest detailed representation of a hospital room.[18] It shows exclusively male patients and male staff. On the left edge of the picture, a doctor with a urine glass in his hand is examining the urine sample, presumably from the patient lying on the stretcher at his feet. The center of the picture is occupied by a man with an injured leg. On the right, a man who is probably dying has his last confession taken, while the porters carrying the stretcher for his corpse are already approaching. Spiritual assistance was accorded as much importance as medical treatment. For this reason, the hospital brother washing the feet of the injured person is much more prominent than the surgeon who will then tend to the wound with the medical instrument and ointment he is holding in his hand. This is hardly a realistic situation because the wound would most probably have been treated first. The washing of feet is more a gesture of

15 For an overview, see *Mollat*, 1986; *Esposito*, 2005, pp. 15–28; and *Rhomberg*, 2015.
16 *Roettgen*, 1996, ill. 110. Similar legends have existed for several institutions, which should be seen in the context of the changed assessment of infanticide. See *Walter*, 2006, pp. 163–174.
17 *Roettgen* 1996, ill. 112–115.
18 *Roettgen* 1996, ill. 116–117.

humility imitating Christ who washed his disciples' feet, thus symbolically placing the hospital at the service of the sick. The second picture shows a scene where people are being fed and clothed, the narrative logic of which is not apparent at first glance.[19] A man in remarkably splendid clothing stands in the left of the picture with his entourage, welcomed by a man who lifts his black head covering in greeting. He is pointing to another man with the same black hood, who in turn is placing a robe over the back of a poor man who is naked except for his underpants. To the right of this man, in the foreground, we see a woman with two small children and a bread basket on her arm. However, the viewer's attention is also drawn to the people on either side of the woman. To her right is a crippled man who is moving himself forward on the floor by means of hand crutches, and on the left is a man with a blood-stained bandage on his leg. Onn the right side of the picture, a crowd of people can be seen through an open door, obviously waiting to be offered bread by a man who is also wearing a black head covering. In the foreground are women and children, and behind them is a pilgrim who can be identified by his hat with its pilgrim's sign. Knowing the hospital's practices, the picture can be read as a feeding of the poor. Siena was not the only place where it was customary to allow the poor to enter through one door into a room where they received alms, and to direct them out again through another door to ensure that no one could benefit more than once. In front of the second door we see a group exiting the room, including a woman carrying a child in a basket with a spoon on her hat—a sign that she is dependent on charity and eats where she is offered food. The picture is supposed to be read from right to left. The men in the plain black hats are members of the confraternity that ran the hospital. Only these men are visible; the servants and the female helpers, who would undoubtedly also have existed, cannot be seen. In contrast to the men, whose neediness is justified by illness or injury, the women, once again with children, are presented as physically appealing and unscathed. The eminent guest depicted in the left of the picture can be recognized as Emperor Sigismund, who actually visited Siena in 1432–33.[20] It remains debatable whether he actually attended such a feeding of the poor, but as early as 1414 he had already requested information from the Sienese government about the hospital whose fame had come to his ears.[21] On the one hand, his presence in the picture is a testimony to the significance of

19 *Roettgen* 1996, ill. 118.
20 *Scharf*, 2001, pp. 239–249, ill. 92–95.
21 *Scharf*, 2001, p. 240.

the hospital, and on the other hand he also assumes the function of an "inner spectator" with whom the viewer can identify. In the center of the picture, the act of clothing the man is intended to grab the viewer's attention, in which the painter demonstrates his ability to reproduce a naked body. At the same time, the hospital makes reference to the charitable work of dressing the naked, illustrating that it not only fed the poor but also clothed them, even though this would hardly ever have happened in this manner at the same moment. In Italian art, a woman is never found depicted naked or scantily dressed in this form in this type of pictorial theme.[22] This is where social norms and conventions come into play, which are also manifested in the actions themselves. For example, when Saint Margherita of Cortona gave away her own dress in order to offer it to a poor woman, she wrapped herself in a straw mat.[23]

Another picture field in Siena is dedicated to foundlings and thus to a theme in which women appear in two roles.[24] In their first role, they are represented as staff members, a larger number of whom are female in this case. In the center of the picture, a hospital brother is handing over a baby to a woman, assumedly a foundling or orphan, who has been delivered to the hospital. On the left-hand side of the picture, nurses are taking care of the smaller children, and a male teacher is teaching the older boys to read and write. In their second role, women are represented as the objects of charity in the right part of the picture, which shows the marriage of a girl with the help of a dowry provided by the hospital. The rector is holding a bag of money in his hand, which he is about to present to the groom. Girls who grew up in a hospital or foundling home had limited prospects in life —they stayed there and served the institution, they were placed in the service of a family, or they were married, with the hospital guaranteeing their origin and education, and providing the dowry. Education for girls frequently included singing, which is referred to in the depiction of the girls' choir at the pulpit.[25] Boys usually received training in the trades.

The issue of a dowry was a specifically female problem, and not only for foundlings. Without a dowry, it was almost impossible for a woman to

22 The representation of the naked female body is restricted to certain pictorial themes, such as Eve, Bathsheba in the bath, or as the damned in hell, as well as characters from ancient mythology or allegories, such as Luxuria.

23 *Helas*, 2013, pp. 66–67, ill. 7.

24 *Roettgen* 1996, ill. 119.

25 This is where the term conservatory as a school for singing and music has its origins. In Italy, the *conservatorio* was one of the names of orphanages, in the sense of a place where children were "preserved".

marry or even to join a convent. As the dowry amounts increased between the 14th and 15th centuries, poorer families or parents with many daughters often had problems raising the money.[26] This is why confraternities like the Buonomini di San Martino, the "good men" devoted to Saint Martin in Florence, assumed this task when the parents presented evidence of their need.[27] In the picture program of their small oratory, furnishing a girl with a dowry for her marriage thus effectively became an eighth work of mercy.[28] This work, together with their other depictions of the traditional works of mercy, demonstrate that the confraternity committed itself to a particular group of needy people, namely the ashamed poor. These were individuals or families who were not actually among the poorest and might even be aristocrats, but who were in need due to misfortune or illness and were in danger of losing their social status.[29] In 15th century Rome, Cardinal Torquemada established the confraternity of the Annunziata, or Madonna of the Annunciation, which provided girls from respectable local families with a dowry. The mission of the confraternity in this regard is illustrated in an altarpiece in Santa Maria sopra Minerva. It shows the Annunciation of Mary by the Archangel Gabriel, between whom the confraternity's founder is interposed. He is presenting three girls to the Madonna, who are receiving a purse (containing the dowry) from her.[30] This is also an indication of the cycle in which the system of charity was embedded: the benefactor provided for the salvation of his own soul, because every gift to a needy person is a gift to Christ himself and necessary for the passage into paradise. Another example is the Ospedale del Ceppo in Pistoia, which was decorated with a terracotta frieze above the entrance loggia by its director, Leonardo Buonafede, between 1525 and 1530. It represents him and the hospital confraternity carrying out the "Seven Works of Mercy". The "Clothing of the Naked" is represented as two different acts, handing out cloths and providing girls with a dowry.[31] Indeed, possessing a dowry was crucial to the life of a woman who had little other prospects than being a wife, running a household for her husband and bringing up children, so as not to look "naked" in a figu-

26 On this aspect, see *Esposito*, 1993, especially pp. 7–9, with literature on the issue of the dowry.
27 See *Sebregondi*, 2018.
28 *Sebregondi*, 2018, p. 85, Ill. 20; *Helas* 2013, pp. 97–98, ill. 21.
29 *Ritzerfeld*, 2007, pp. 113–140; *Helas* 2013; *Sebregondi*, 2018.
30 https://en.wikipedia.org/wiki/Antoniazzo_Romano#/media/File:Annunciazione_Antoniazzo.jpg.
31 *Helas*, 2017, pp. 68–70, fig. 8.

rative sense. In this respect, it is a critical moment which impacts the rest of the girl's life.

The Buonomini in Florence did not run a hospital where they attended to sick people, but they did look after women who were in need of help due to the birth of a child. The biblical work of "Visiting the Sick" is portrayed in an unusual way to reflect this It shows three members of the confraternity inside the bedroom of a woman who is lying in childbed after the birth of her child, presenting her with the traditional gifts of a fat capon and wine, as well as confectionery and a swaddling cloth for the newborn baby.[32] Here the three men, as representatives of the confraternity, ostentatiously enter into a female domain, albeit fictionally, insofar as childbirth and postpartum took place with the help of midwives, nurses and maids.

The Hospital of the Holy Spirit in Rome, being the mother house of the Order of the Holy Spirit, which later operated hospitals throughout Europe, also offered help to women in two other special situations in life. As the illustrated book of statutes from the middle of the 14th century shows in the first part of the corresponding chapter, it admitted pregnant women for childbirth, a function that many hospitals did not fulfil.[33] A nurse breast-feeding a child is depicted in the same miniature, thus representing the hospital's function as a foundling home. Another illuminated initial depicts the admission of prostitutes over Easter, in order that they could live without sin during that time.[34]

Thus, there can be observed two gender-specific differences in the representation of men and women in the context of poverty and charity. The first is their outward appearance and the second is reflected in the roles in which they are portrayed. Needy men are often characterized by deformed bodies and sparse clothing. In addition to age, visible signs of illness and injury are an explanation for inability to work and justification for being dependent upon charity. Women's bodies are always covered and, at most, hunched over by age, but not maimed. Younger women are either depicted as virgins willing to marry or as mothers of infants, and they are usually portrayed in an appealing way. This mode of representing women arises from their social position and continues to inscribe a concept of femininity that is defined firstly by physical beauty and secondly by motherhood as a destiny. The women appear in three roles: the girl in need of a dowry,

32 *Sebregondi*, 2018, p. 91, ill. 34.
33 Archivio di Stato di Roma, Ms. 3193, fol. 127v; *Drossbach/Wolf*, 2015, plate XXX.
34 *Drossbach/Wolf*, 2015, plate XXXV.

the young mother, and the old woman or widow. Whereas the first situation, the dowry, is an issue specific to the 14th and 15th centuries and emerges as a pictorial theme only in the middle of the 15th century, the mother with children and the old woman are two themes with a long-standing tradition which not only have their roots in reality but contain, in addition, an allegorical meaning.

In 1423, Gentile da Fabriano created an altarpiece in Florence for the wealthy Strozzi family, one of whose predella panels depicts the "Presentation of Christ in the Temple".[35]. The biblical scene, which is set inside a Jewish temple, has been transported to contemporary Florence by the buildings in the background. The two ladies on the left, lavishly dressed in the style of the period, are probably members of the patron's family. On the other side of the temple, in front of a portico reminiscent of the architecture of Brunelleschi's foundling hospital, the construction of which had just begun, we see a man and a woman both begging for alms. They seem to have been taken straight from reality.[36] A glance at contemporary illuminated manuscripts, however, reveals that they are depicted in exactly the same way as the personifications of poverty and misfortune in the illustrations to Giovanni Boccaccio's work *On the Fates of Famous Men and Women*. The author tells the tale of how Poverty fights Fortune, wins the fight and sets the condition that Misfortune shall be tied to a stake and shall only be able to attach itself to the person who releases it by their own action.[37] In the illustration of a French manuscript from 1415, Misfortune is depicted in the shape of a man sitting on the ground with his legs crossed, while Poverty appears as an old woman with patched clothing.[38] Therefore, the public of the time would not only have seen two beggars on the predella, but could also understand that the figures represent Misfortune and Poverty. In other contexts, the personification of Poverty can also be found depicted as an old woman in shabby clothes—Giotto painted her as

35 The altarpiece today is housed in the Uffizi in Florence; the predella panel with the "Presentation of Christ" was brought to Paris as part of the art looted from Italy by Napoleon, and is now kept in the Musée du Louvre.

36 *Helas*, 2004, pp. 63–87.

37 *Boccaccio*, 1965, pp. 62–64.

38 Giovanni Boccaccio, *Des cas des nobles hommes et femmes*, miniature dated 1415 from the "Cité des Dames" workshop, Paris, Bibliothèque de l'Arsenal, ms. 5193, f. 88r. https://gallica.bnf.fr/ark:/12148/btv1b55009572g/f181.item.

the bride of Francis of Assisi in the early 14th century in the Lower Church of the Basilica of Saint Francis of Assisi.[39]

Similarly, the young mother with children also has an allegorical meaning. In the fresco of the feeding of the poor from the sala del pellegrino in Siena, she stands prominently in the foreground of the picture. She is holding a small naked boy on her arm who exposes one of her breasts, but not in order to reach for it as one would expect from an infant, but rather to present it to the viewer of the image. The allegory of Caritas, Christian love, has often been depicted in this manner.[40] Knowing this, the figure in the Sienese fresco takes on a different meaning. She is not only a needy woman with children, but she also embodies Christian charity and thus the hospital's charitable activities, reminding the viewer that the hospital's existence depends on the donations it receives. Her depiction therefore constitutes an appeal to donate something to the hospital, or at the latest to make an endowment to the hospital in the person's last will and testament, as was customary in the hope of salvation through charitable works. The Sienese painting thus transports typical gender roles—the prominent active persons are the male members of the confraternity, women appear only in the role of nurses, and the neediness of the three most clearly recognizable male supplicants is made apparent through nudity and injury. Women, in contrast, appear more in the background of the picture (except for Caritas) and as part of the group of people. Their role as mothers is defined by the children. However, the allegorical dimension of the woman with the children in the foreground of the picture with the distribution of bread opens up a field of discourse that owes its existence to embedding society into a patriarchal system.

This pattern is even more evident in the hospital in Pistoia, where the picture fields of the Works of Mercy are dominated by needy men and male members of the confraternity under their leader, whereas women are relegated to the allegorical realm as figures of the seven cardinal virtues in the spaces between the picture fields. Here again, the allegory of Caritas is

39 https://commons.wikimedia.org/wiki/Category:Franciscan_Allegories_in_the_Lower_Basilica_in_Assisi#/media/File:Giotto,_Lower_Church_Assisi,_Franciscan_Allegories-Poverty_01.jpg.

40 The three theological virtues are faith (fides), love (caritas) and hope (spes). They originate from 1 Corinthians 13:13: "And now these three remain: faith, hope and love. But the greatest of these is love." The traditional canon of the seven virtues dates back to Pope Gregory the Great (540–604). He had added the ancient Platonic cardinal virtues of prudence (*prudentia*), justice (*iustitia*), fortitude (*fortitudo*) and temperance (*temperantia*) to the three theological virtues.

depicted as a mother with children.[41] The larger female allegorical figures, however, stand between the picture fields as if without reference to the men shown performing various charitable activities, among whom the hospital's director, Buonafede, is portrayed in a clearly recognizable manner. This is a strategy that can be observed in public picture programs in many contexts.

An allegory is the pictorial representation of abstract facts in the form of a concrete figure or an object.[42] The majority of allegories are female. Best known is probably Justitia, the embodiment of justice with blindfolded eyes, sword and scales, illustrating that the law is administered without regard to the person (blindfold), after careful consideration of the facts (scales) and finally enforced with the necessary rigour (sword).[43] Visualizations of higher ideals through female allegories run through the entire history of European art.

The allegories of good and bad government in the Palazzo Pubblico, the town hall of Siena, were created by Ambrogio Lorenzetti between 1337 and 1339.[44] The "Good Government" is represented by six crowned female figures: Peace, Fortitude and Prudence on the left, Magnanimity, Temperance and Justice on the right. On the far left of the fresco the figure of Justice is repeated as she is balancing the scales held by Wisdom. A long procession of men, much smaller in size, extends along the lower edge of the picture—they are representatives of the Sienese city government, not in the form of portraits, but as actual commemorated historical figures. The picture employs the hierarchical perspective; that is, the size of a figure corresponds to its importance. However, this refers to an internal system within the picture, the visualization of the values on which the urban community is built, and not to the real role of women in Sienese society. Government was exclusively in the hands of men.

This practice of placing women in an allegorical dimension is not a phenomenon restricted just to the Middle Ages; rather, it witnessed a new bloom in the 19th century, the traces of which are still omnipresent today —in visual culture as well as in language and writing.[45] The Max Planck Society is a prominent example of this phenomenon, because of the logo which represents the institution: a helmeted female head in profile. It is

41 *Helas,* 2017, ill. 28.
42 *Pfisterer*, 2011, pp. 14–19, s.v. Allegorie, Personifikation.
43 *Althans*, 2002.
44 See, for example, *Seidel*, 1999, as well as *Wolf*, 2013. However, his subject is explicitly not a "woman", but the interpretation of the female allegory of *Pax/Securitas*.
45 *Warner*, 1985; *Gall*, 1999; and *Wenk*, 1996.

Minerva, the Roman goddess of wisdom, tactical warfare, art and shipbuilding, as well as guardian of knowledge, her Greek counterpart being Athena.[46] Two references to this topic can be found on the Max Planck Society's websites. Under the entry on the founding of the Kaiser Wilhelm Society (the processor to the Max Planck Society) on 11 January 1911, it is mentioned that Minerva was chosen as the emblem: "The Roman goddess of science embodies wisdom, bravery and perseverance".[47] In the description of its history we learn: "However, the new membership badge, on which Minerva replaces the portrait of the Kaiser—the original emblem of the Kaiser Wilhelm Society—was not introduced until December 1926."[48] With the end of the Empire and the consequent loss of the organization's patron, the image of Minerva thus gained even greater prominence. Minerva is an ancient goddess; that is not an allegory in a strict sense, but she acts as such because she embodies wisdom and hence embodies the claim of this science organization to acquire and utilize knowledge through basic research. However, just like in Siena in the 14th century, this does not imply that women are actually accorded their share or allowed participation in this production of knowledge.

But why use female allegories? The most common explanation for the femininity of allegory is its feminine grammatical gender in Latin as the origin of the European intellectual history.[49] However, even language is contingent upon the presumed social position of women in society, and thus an interaction between grammar and patriarchal order must be assumed. Various authors have attempted to explain the female gender in allegories. Cesare Ripa, the author of a 16th century standard work on the subject of allegories, wrote about "fortezza" (strength): "She ought to be a lady, which is not to claim that a strong man should emulate feminine ways, but to adapt her figure to the way we speak; or because, every virtue is a manifestation of that which is true, beautiful and desirable, in which the spirit takes delight, and as we generally ascribe beauty to ladies, we may well represent one through the other [...]."[50] Thus, it is from a male view and a male order in which depictions of allegories function. Over the course of feminist movements, the issue of the femininity of allegory and the discrepancy between the representation and the portrayed was dis-

46 On the popularity of Athena/Minerva in the 19th century, see *Warner*, 1989, especially pp. 181–184.
47 https://www.mpg.de/945416/5_event2-1911.
48 *Renn/Kant/Kolboske*, 2015.
49 *Warner,* 1989, especially pp. 100–106; *Gall* 1999, p. 105.
50 *Ripa*, 1602, pp. 90–93, quoted in *Warner*, 1989, p. 102.

cussed. Caecilie Rentmeister dealt with this question in 1976 and demonstrated that female allegories had a long tradition especially in societies in which women had a subordinate position and that they performed an "appeasing function" in patriarchy.[51] As per Bornemann, she interprets allegories as "figures adopted from the mother right" and as a "justification for the oppression of women".[52] According to her analysis, the very fact that female allegories and the principles they represent are revered in a male-dominated society means that real women can be suppressed by being disregarded. Thus, the figure of the allegory reveals the general dynamics of the pictorial representation of the feminine. Though female figures are also present in art and literature from antiquity to the 20th century as historical personalities, they are mostly depicted as mythological and allegorical figures. The abstract concepts and ideas they embody stand in marked contradiction to their real position in society; such figures represented areas that were not accessible to women in reality. "The female allegories represent the opposite of the female, they do not represent women, but instead the governing principles of society, which even the "great men" were lacking and which transcended them."[53] The actual female body is thus deprived of its materiality and individuality and becomes the semiotic embodiment of that which it represents. "Only by not referring to a real woman the represented woman become a signifier for something else".[54]

When the Kaiser Wilhelm Society chose Minerva as its emblem, it was in keeping with one of the trends of the 19th and early 20th centuries, in which a proliferation of female personifications could be observed, whereas actual women were largely absent from the sphere of public life and—apart from a few exceptions—participated neither in political nor scientific processes.[55] After the Second World War, the head of Minerva was adopted by the Max Planck Society, which sought to retain the formal and symbolic language of the Kaiser Wilhelm Society. Images are not neutral, let alone an unbiased representation of reality, whether it be the frescoes of the Renaissance, the logo of the Max Planck Society, or the photographs which the organization uses in representing itself. Either intentionally or

51 *Rentmeister*, 1976, pp. 92–112.
52 *Rentmeister*, 1976, p. 94. *Bornemann*, 1975, p. 367.
53 "Die weiblichen Allegorien repräsentieren das Gegenteil des Weiblichen, sie repräsentieren nicht die Frauen, sondern das Herrschende, das selbst den ‚großen Männern' mangelt und über sie hinausweist". *Wenk,* 1996, p. 191.
54 "Erst dadurch, dass die dargestellte Frau nicht auf eine reale Frau referiert, kann sie zum Zeichen für anderes warden" *Weigel*, 1990, p. 167.
55 *von Aretin*, 2010, especially pp. 26–27.

unintentionally, they postulate and confirm social and gender-specific discourses. In 2018, the Max Planck Society's homepage prominently featured the announcement of the Lise Meitner Program alongside a call for nominations for Max Planck Directors, phrased only in the male form[56] (Fig. 1). Whereas the women in the picture present themselves as "chaste" and buttoned up, the man poses with open lab coat and in "attack position".[57] With a slight exaggeration, one could interpret the two women, who are partly retreating, as potential prey for the man. Is this really an image that would encourage women to apply? The call for nominations, on the other hand, is illustrated with a blurred picture, because this would probably reveal what the reality looks like: a male-dominated Commission that decides over posts for male directors and not female directors (as implied by the use of the masculine form of the word in German).

Images emerge from the interplay between different aspects and interests—falling back on a repository of narratives and symbols of European culture, political or religious messages, social conditions, artistic and aesthetic discourses and, last but not least, of gender roles, which are often determined by the fact that artists and clients were, and still are, mostly male. In Siena in 1441, what we are dealing with is quite openly and unambiguously the self-representation of a male assembly in a patriarchal world. The role of women in society is strictly defined not only by depicting them in their actual conditions, but also by means of allegorization, which assigns them a place outside of social reality, without any possibility of active participation. The visual language of our times works in more subtle ways, and the Max Planck Society has been striving for a more gender-fair self-portrayal for years. Nevertheless—leaving aside the Minerva—mechanisms are still discernible that have the opposite effect or unmask the actual state of affairs.

This contribution has been translated by Frank Hafemann.

56 https://www.mpg.de/11739724/broschuere-chancengerechtigkeit.pdf (accessed on 09 Apr 2018).

57 *Baier*, 2016, p. 30 recommends men to "frame" the genitals with their thumbs as a gesture of dominance.

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Figure 1. Screenshot of News on Max Planck Society Website. (2018). https://www.mpg.de/de.

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Selected Publications:

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ABOUT THE INSTITUTE

Bibliotheca Hertziana – Max Planck Institute for Art History

Bibliotheca Hertziana promotes scientific research in the field of Italian and global history of art and architecture. Established as a private foundation by Henriette Hertz (1846–1913), it was inaugurated in 1913 as a research center of the Kaiser Wilhelm Society.

Hierarchies. Lotta Support, Little Science? Scientists and Secretaries in the Max Planck Society

Birgit Kolboske
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ABSTRACT
Contrary to common belief, organizational structure is never gender neutral; it is just that since »men in organizations take their behavior and perspectives to represent the human, organizational structures and processes are theorized as gender neutral.« (Joan Acker 1990). The Max Planck Society is a gendered organization whose employment structure in the twentieth century featured a clear gender segregation. The following highlights two areas of a research project on the history of women and gender equality in the Max Planck Society—the one where only very few women were admitted: science; and the one where most of them worked most of the time: the office.

MORE SUPPORTERS THAN SCIENTISTS

"Gender is a cultural framework that defines masculinity and femininity as different and unequal."[1]

Contrary to common belief, organizational structure is never gender neutral; it is just that since "men in organizations take their behavior and perspectives to represent the human, organizational structures and processes are theorized as gender neutral."[2] The Max Planck Society, "Germany's most successful research organization,"[3] is of course a gendered organization. Also it is a very hierarchical one. In keeping with this, its employment structure maintained at least for the first fifty years a clear gender segregation, with men doing research and women supporting them, most of them as secretaries.

1 *Abbate*, 2017, p. 3.
2 *Acker*, 1990, p. 142.
3 https://www.mpg.de/short-portrait (15.02.2020).

According to the first *Facts & Figures* (*Zahlenspiegel)* published by the Max Planck Society in 1974, there were a total of 6,954 staff members, of which 2,837 (=43 per cent) were female and 3,757 (=57 per cent) were male.[4] Figure 1 shows a table breaking down personnel into scientific members, scientific staff, technical staff, administrative staff, other services, skilled workers, non-skilled workers and cleaners, according to gender. Not surprisingly, the majority of female employees figured among the administrative staff and cleaners while being conspicuously absent from the scientific staff, not to mention Members.

Almost twenty years later, Sonja Munz proved in her empirical investigation on the occupational situation of men and women in the Max Planck Society that still not much had changed in this respect. In 1991, women were still predominantly hired as executive and departmental secretaries, as secretaries and typewriters; whereas men were hired in significantly higher numbers as project staff, for IT, general and technical services.[5]

> When the gender makeup of a profession flips, when it feminizes as it has happened in case of the secretary, people often assume that the work became simpler. (Unlike when a field becomes masculinized, and the assumption reverses: that the work became more difficult or complex.)[6] Since the late nineteenth century secretarial work has been viewed as women's work: (type-)machinery and automation lead to its feminization—and subsequent loss of prestige. Technological and digital revolution did not change this, though it changed the perception of computer operation and programming, which in the 1940s, 1950s was also regarded as women's work but acquired a distinctly masculine image with the gain of prominence and influence.[7]

The following is a *tour d' horizon* across a research project on the history of women and gender equality in the Max Planck Society, highlighting two areas: the one, where only very few women were admitted—science; and the other, where most of them worked most of the time—the office.

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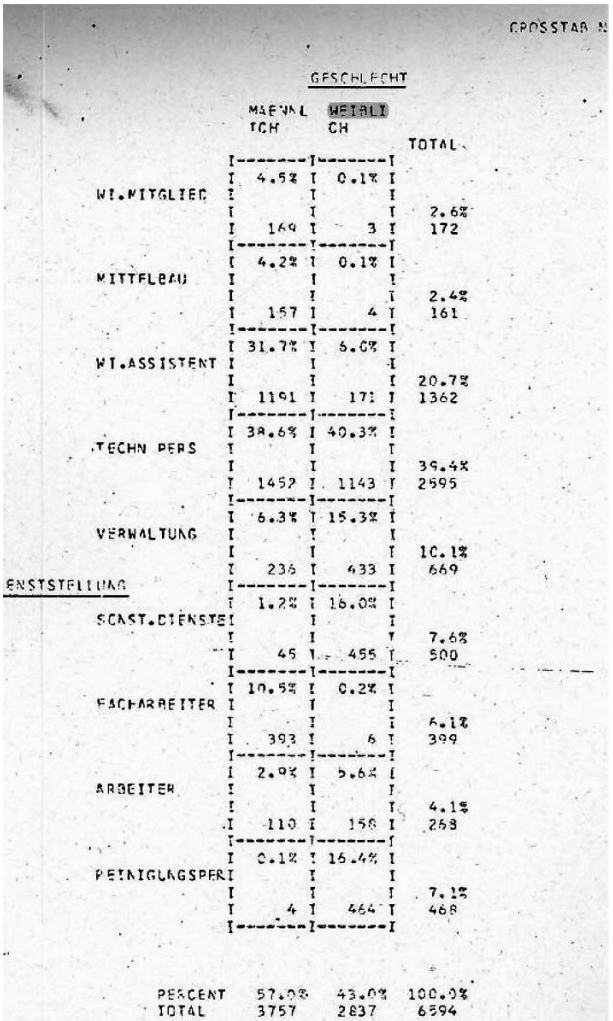
4 Max-Planck-Gesellschaft, *Zahlenspiegel der Max-Planck-Gesellschaft 1974*, 1974, 2. This still corresponds to the actual ratio, which was 44.4 per cent female employees as of December 31, 2018. https://www.mpg.de/facts-and-figures (8.2.2020).

5 *Munz*, 1993, p. 116.

6 *Hicks*, 2017, pos.195.

7 *Hicks*, 2017, pos. 190.

Figure 1: Max Planck Society staff according to work area and gender[8]



GROSSTAB N

	GESCHLECHT MAENNLICH	WEIBLICH	TOTAL
WI.MITGLIED	4.5%	0.1%	2.6%
	169	3	172
MITTELBAU	4.2%	0.1%	2.4%
	157	4	161
WI.ASSISTENT	31.7%	6.0%	20.7%
	1191	171	1362
TECHN PERS	38.6%	40.3%	39.4%
	1452	1143	2595
VERWALTUNG	6.3%	15.3%	10.1%
	236	433	669
ENSTSTELLUNG			
SOZIAL.DIENSTE	1.2%	16.0%	7.6%
	45	455	500
FACHARBEITER	10.5%	0.2%	6.1%
	393	6	399
ARBEITER	2.9%	5.6%	4.1%
	110	158	268
REINIGUNGSPER	0.1%	16.4%	7.1%
	4	464	468
PERCENT	57.0%	43.0%	100.0%
TOTAL	3757	2837	6594

8 Max-Planck-Gesellschaft, *Zahlenspiegel 1974*, p. 15.

SCIENTISTS

LOST OPPORTUNITIES

Germany has a rich, albeit authoritarian, science tradition and its research system is strongly marked by hierarchies and relationships of dependency.[9] The Max Planck Society is both benchmark and testament to this. Looking at the ruptures and inconsistencies that marked the post-war careers of women in the Max Planck Society, it can clearly be seen that careers for female scientists may have been easier to achieve in its predecessor organization, the Kaiser Wilhelm Society (1911–1948).[10]

When the Max Planck Society was founded in Göttingen in 1948, three of the former 13 female department heads of the Kaiser Wilhelm Society remained in Berlin—plant geneticist Elisabeth Schiemann (1881–1972), physician and cytologist Else Knake (1901–1973), and chemist Luise Holzapfel (1900–1963). In 1946, both Knake and Schiemann were appointed as professors at the newly opened Berlin University. This had to do with the denazification policy of the Allies. Unlike many of their colleagues, neither Schiemann nor Knake had been incriminated in the Nazi regime.[11] In August 1946, Knake was the first woman ever to be appointed provisional dean of the Medical Faculty, from October 1946 she acted as deputy dean.[12] Yet, in the same year, Schiemann laconically commented in a letter to her friend Lise Meitner (1878–1968): "Obviously chairs are still not considered for women."[13] Within the newly founded Max Planck Society their careers stagnated or were even cut short compared to those of their male colleagues, who, despite party membership, could continue their careers without any hiccups, as was the case for Wilhelm Rudorf.[14] A fact that seemed "unconceivable" to Schiemann, as she told President Otto Hahn in

9 See e.g. *Friederici*, 2019, p. 124.
10 The most comprehensive study so far has been provided by Vogt, 2007.
11 On 16 December 2014, Yad Vashem honoured Elisabeth Schiemann as a "Righteous among the Nations." https://righteous.yadvashem.org.
12 *Kubicki/Lönnendonker* (eds.), 2002.
13 "Ordinariate kommen wohl auch weiterhin für Frauen nicht in Betracht." *Scheich*, 2002, 278. For more on the friendship between Schiemann and Meitner, see: *Scheich*, 1997, pp. 153–157.
14 Rudorf was a member of the NSDAP and Supporting Member of the SS – notwithstanding he was in 1946 entnazifiziert, cf. *Heim*, 2002; *Hachtmann*, 2007, p. 1114.

a letter.[15] Not only did the post-war careers of their male colleagues run smoothly; they once again held positions that allowed them to impede the professional development of female scientists, despite the scientific reputation and political standing of these women.

Thus, Rudorf[16] and Stubbe[17] were able to thwart Schiemann's attempts to establish a Max Planck Institute for Crop Research—especially one directed by her. But at least Schiemann became a Scientific Member of the Max Planck Society in 1953. The same year that Else Knake was finally appointed Head of the Department for Tissue Engineering at the Max Planck Institute for Comparative Hereditary Biology and Pathology run by Hans Nachtsheim. Yet, in the following years, any attempt in the Biology & Medicine Section (BMS) to appoint her a Scientific Member failed mainly due to Nachtsheim's veto, as can be concluded from the records.[18]

That is, the opportunity for a badly needed paradigm shift was missed in the Max Planck Society. This opportunity had probably been already

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15 "Unbegreiflich", Schiemann to Hahn, 22. 8.1946, AMPG, III. Abt., Rep. 14A, Nr. 2750, Bl. 5R.

16 Rudorf to Rajewksy, Vorsitzender der BMS des WR der MPG zur Förderung der Wissenschaften, 27 April 1953, III. Abt., Rep. 14A, Nr. 2750, Bl. 463–464; Rudorf to Telschow, 30 April 1953, III. Abt., Rep. 14A, Nr. 2750, Bl. 465; Rudorf to Geheimrat Dr. Kissler, Vorsitzender des Vorstandes der Landwirtschaftichen Rentenbank, 5 May 1953, III. Abt., Rep. 14A, Nr. 2750, Bl. 461. Georg Melchers to Hans Kuckuck, 9 September 1953, AMPG, III. Abt., Rep.75, Korrespondenz, Bd. 6.

17 Forstmann in a letter to Benecke, 9 March 1953, III. Abt., Rep. 14A, Nr. 2750, Bl. 517–518, in which Walter Forstmann informed Otto Benecke about Stubbes negative stance on "Verschmelzung seines [Stubbes] künftigen Instituts mit dem vom Kuckuck-Schiemann".

18 Regarding the efforts to appoint Knake as a Scientific Member, see e.g. the memo made by Otto Benecke from 13 July 1954, in which he notes: "Herr Professor Rajewsky hat Herrn Professor Nachtsheim mitgeteilt, dass er sich für die Ernennung von Frau Knake zum Wissenschaftlichen Mitglied aussprechen würde; und hat um Herrn Nachtsheims Hilfe gebeten." AMPG, II. Abt. Rep. 1A, Wissenschaftlicher Rat 9_m2_13_06_1955. — On Knake's continued exclusion see e.g. *Auszugsweise Abschrift aus Aktenvermerk über Besprechung in der Verwaltungsstelle Berlin am 23.4. 1955*, "Zur Frage der Ernennung von Frau Prof. Knake zum Wissenschaftlichen Mitglied des Max-Planck-Instituts für vergleichende Erbbiologie und Erbpathologie", AMPG, II. Abt., Rep. 1A, Wissenschaftlicher Rat 9_m2_13_06_1955-7; the letter from Otto Benecke to Nachtsheim from 18 June 1956, AMPG, II. Abt., Rep. 1A, Wissenschaftlicher Rat 10_m2_11_06_1956; or the letter from Generalsekretär Hans Ballreich an den Vorsitzenden der BMS, Hans Bauer vom 15 January 1962, AMPG II. Abt., Rep. 1A, Wissenschaftlicher Rat 16_m2_22_05_1962.

lost, when, in 1945, the Nobel Prize in chemistry for 1944 was awarded to Otto Hahn alone—without acknowledging Lise Meitner's contribution to the discovery of nuclear fission, which historian of science Margret Rossiter called the probably "most notorious theft of Nobel credit".[19] As Meitner's biographer, Ruth Lewin Sime, explained, those "who did not understand the science or the political situation concluded that the chemists had discovered fission while the physicists had merely explained it."[20] And after being excluded from the Nobel Prize in 1945 Meitner largely lost her place in the history of science.[21] In 1948, Meitner was offered her old position and the directorship of the Max Planck Institute for Chemistry, which had been relocated to Mainz. Yet she refused it, fearing that she "would not be able to breathe" in the post-war atmosphere.[22] She became an External Scientific Member instead.

Albert Einstein had referred to Meitner as "our Madame Curie," thus recognizing Meitner's importance in the field of radioactivity and in the physics community both Einstein and Meitner inhabited in Berlin.[23] It is amazing that more than a hundred years ago scientists were willing to follow Einstein's mind-blowing and ground-breaking thought experiments into the universe, but still seemed to be unable to shake off old chauvinist beliefs regarding female excellence and accomplishments in science.

19 *Rossiter*, 1993, p. 329.
20 *Sime*, 2005, p. 24.
21 For more on Meitner's scientific achievements in this context, see e.g. *Sime*, 2001. *Crawford/Sime/Walker,* 1996, 208–210. For the counter position, defending Hahn's sole accomplishment see *Weizsäcker*, 1997: 34.
22 "Ich glaube, ich würde in dieser Atmosphäre nicht atmen können." Meitner to Eva von Bahr-Bergius, 10 January 1948, Lise Meitner Papers, Churchill Archives Centre; quoted from *Sime,* 1996, pp. 353–354.
23 *Frank*, 2002, p. 139.

Figure 2: The female Scientific Members of the Max Planck Society, 1948–1998[24]

In 1998, when the Max Planck Society celebrated its fiftieth anniversary, it had all in all appointed 13 female Scientific Members (compared to 678 male Members). So how did the Max Planck Society manage to recover from these lost opportunities and eventually provide equal opportunities?

EQUAL OPPORTUNITIES[25]

Major changes in gender policy marked the decade from 1988 to 1998 at international and national level.[26] However, this trend was barely reflected

24 From left to right top-down: Isolde Hausser; Lise Meitner; Elisabeth Schiemann; Anneliese Maier; Anne-Marie Staub; Birgit Vennesland; Margot Becke-Goehring; Eleonore Trefftz; Renate Mayntz; Christiane Nüsslein-Volhard; Anne Cutler; Angela D. Friederici; Lorraine Daston. Never appointed, and only member *ex officio*: Else Knake. (Collage made by author, copyright photos: Archive of the Max Planck Society, Berlin — henceforth: AMPG.

25 For a comprehensive study of the gender equality process and its implementation in the Max Planck Society, see *Kolboske*, 2018.

26 It had been preceded by the United Nations Decade for Women, 1975–1985.

in German research institutions and universities. Despite the "best educated generation of women the *Bundesrepublik* ever had,"[27] the insufficient participation of women at all qualification and hierarchy levels of academic life has been well documented since the mid-1990s. In 1989 the *German Council of Science and Humanities* had established "a pyramidal picture of women's participation at universities and colleges."[28] Initiated by the German government, the *Bund Länder* Commission for Educational Planning and the Promotion of Research developed a report on the "Advancement of Women in the Field of Science", that was adopted in December 1989 and accompanied by a series of recommendations on how to increase the participation of women in universities and research institutions "at all levels of the qualification process in science."[29] These exogenous factors would eventually put into motion gender equality policies in the Max Planck Society, which had to address its own gender structure, if it wanted to avoid losing federal funds. In 1988, the Max Planck General Works Council published an article on the employment situation of women in the Max Planck Society stating that "merely one sixth of all the scientists working in the MPS are women".[30]

Likewise, the Scientific Council of the Max Planck Society addressed the prevailing gender imbalance, and, in 1991, issued its *Recommendations for the Advancement of Women in Science* stating that: "The professional development of women and men that has been subjected in content, structure and socially to conditions, which have historically led to a discrimination of women in science [...] is no longer acceptable." The main message of the *Recommendations* was that the future tasks of science made the "timely and full development of all talents and abilities indispensable."[31] Still they focused mainly on a "better science-life-balance", whereas influencing recruitment decisions by introducing a quota system was rejected on principle.[32]

But not only the women on top were affected. For a comprehensive survey of the so far unchartered gender-specific employment map in Max Planck Institutes, the independent sociologist Sonja Munz was commissioned to conduct an empirical study published in 1993. Her findings included that, on average, female employees earned less than men; female

27 *Munz*, 1993, p. 11.
28 *Wissenschaftsrat*, 1988, p. 212.
29 *Deutscher Bundestag*: Drucksache 13/4041. 08.03.1996.
30 *Ruschhaupt-Husemann/Hartung*, 4/88, pp. 22–26.
31 *Wissenschaftlicher Rat der Max–Planck–Gesellschaft*, 2/1991, pp. 18–20.
32 Ibid.: p. 20.

employees did more part-time work; female employees were more affected by unemployment; female employees formed a wide basis in unskilled work, whereas they were hardly represented in leading positions; and fewer women than men participated in work-related training courses.[33] That is, Munz concluded, a distribution pattern could be discerned across all employment groups—granting men the well-paid, secure and influential jobs, while the representation of women diminished to the same extent in which status, gratification and stability of the positions grew.

Above all, it was the Second Federal Act on Gender Equality[34] that came into effect in 1994, which finally triggered serious negotiations for equal opportunity policies in the Max Planck Society in the mid-1990s. Apart from being afraid of invoking possible sanctions in terms of losing public funds, it was the concern of losing one's traditional autonomy in recruitment and appointment processes that put the wheels into motion. An important feature of this omnibus act was the *Act on the Promotion of Women*.[35] In its wording, it only applied to employees in the federal administration and in federal courts, and thus not immediately to the Max Planck Society. However, it set standards for future expectations on measures promoting women in institutions essentially financed by federal funds—such as the Max Planck Society. Thus it was agreed that the Act on the Promotion of Women was to serve as the base for further measures in the Max Planck Society which also took into account the "specific demands of the Max Planck Society."[36]

Not surprisingly said specific demands disarmed the *Act on the Promotion of Women* in crucial aspects. Just some highlights to give a general idea: The obligation to increase the proportion of women did not to apply to appointments (Section 7 Article 3). Overall control for implementing the Framework for the Advancement of Women[37] was not assigned to the Central Gender Equality Officer (Section 4 Article 1).[38] Hence the power of the gender equality officer and the local ombudswomen was drastically

33 *Munz*, 1993.

34 *Zweites Gleichberechtigungsgesetz* (2. GleiBG).

35 Gesetz zur Förderung von Frauen und der Vereinbarkeit von Familie und Beruf in der Bundesverwaltung und den Gerichten des Bundes (*Frauenfördergesetz*) vom 24. Juni 1994, BGBl. I, S. 1406 ff. (=Art. 1, 2. GleiBG).

36 139. Sitzung des Senats der MPG am 24. März 1995 in Berlin, Niederschrift, TOP5 Frauenförderung in der Max-Planck-Gesellschaft, AMPG, II. Abt., Rep. 60, Nr. 139.SP, Bl. 24–25.

37 The first ever *Equal Opportunities Policy* of the Max Planck Society.

38 No Central Gender Equality Officer existed in the Max Planck Society until October 1996, when Marlis Mirbach took up her work. She was not elected, but ap-

limited regarding her participation in personnel matters. The hesitant, half-hearted implementation of gender equality measures resulted in a failed equal opportunities policy at this early stage. In 1998, the proportion of female scientists in senior research positions still remained dim—as illustrated by these figures: 1.8 per cent=C4; 7 per cent=C2/3; 3.6 per cent= BAT I.[39]

But that was less due to the lack of appropriate measures than to the prevailing mindset. Mary Osborn (Max Planck Institute for Biophysical Chemistry) pointed out that "MPG directors are selected in a closed process by individual institutes, in a selection process in which given the current circumstances usually only men participate!" Hence she suggested female scientists (if necessary from abroad) be included on selection committees, thus drawing on appointment measures customary at Harvard since the early 1970s.[40] Nancy Hopkins (MIT) was quoted in *Science* as saying that one has to change the institution and the minds would follow.[41] That was true for the Max Planck Society; the lengthy and painstaking process of establishing gender equality also had to do with the deeply ingrained credo of scientific excellence, and the obvious difficulty in coming to terms with the fact that this was not a uniquely male quality.

Well, eventually things did change—albeit slowly. By now the gender proportion has notably changed, even if there is still a long way to parity at the top.[42] But nevertheless the questions remain: Do specific rules apply for women within the Max Planck Society? Are female scientific achievements in general assessed differently? An issue, that does not appear to be trivial given that, for instance, recently only female Max Planck directors

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pointed by the General Secretary: "Abweichend von § 15 FFG ist in der Max Planck Society nach vorheriger Ausschreibung durch den Generalsekretär eine zentrale Gleichstellungsbeauftragte zu bestellen. Die Bestellung erfolgt für die Dauer von drei Jahren mit der Möglichkeit der Verlängerung." Aktenvermerk, Erster Vorentwurf einer Senatsvorlage wegen Frauenförderung FFG, 28. Oktober 1994, GVMPG, BC 207182.

39 C and BAT refer to the salary levels that applied according to the federal salary regulations for academic officials—professors and research scholars—in German academia between 1975 and 2002, i.e. a full university professor received C4.

40 Osborn to Hofschneider, 16 October 1991, GVMPG, BC 207181.

41 *Lawler*, 1999.

42 According to the official figures of the MPS: "As of December 31, 2018, the proportion of female employees was 44.4 percent. The proportion of women researchers was 15.9 per cent at W3 level, 35.1 per cent at W2 level and 32.6 per cent at the level of scientists employed under the collective agreement for the public sector; in the non-scientific areas it was 55.3 per cent." https://www.mpg.de/facts-and-figures (14.02.2020).

have been publicly confronted with the accusation of having bullied their employees.[43]

SECRETARIES

> *I think the word "secretary" means a girl or a woman that works for another man in the company, no matter what she does.*[44]

WHAT IS A SECRETARY?

The noun "secretary" derives from Medieval Latin *secretarius*, indicating a confidential employee, that is, a prestigious job.[45] Though confidentiality still remains one vital requirement of the modern secretary, much of the prestige, however, was lost with the feminization of the profession. Cambridge Dictionary provides the definition: "secretary (office worker): someone who works in an office, writing letters, making telephone calls, organizing meetings, etc. for other people".[46] There are, of course, other meanings for the word; in addition to referring to a piece of furniture, it can also mean a government official: "secretary: the head of a government department: e.g. the Foreign Secretary".[47] What better example to illustrate the inherent gender gap—the first describing a traditionally female profession, the second for decades an almost exclusively male one. It seems to be the fact that office work has been viewed as women's work that makes a concise job description so difficult: "We have a problem as secretaries that nobody knows what to call us. A secretary could be a typist or it could be a full-blown personal assistant or administrative officer."[48] Over the course

43 See e.g. *Rubner*, 2020, p. 6.
44 *Pringle*, 1989, p. 1.
45 Merriam-Webster.com Dictionary, s.v. "secretary," accessed February 8, 2020, https://www.merriam-webster.com/dictionary/secretary?show=0&t=1391421751.
46 Cambridge Dictionary, https://dictionary.cambridge.org/dictionary/english/secretary (8.2.2020). Oxford Learner's Dictionaries, however, amends: "In this meaning, secretary is starting to become old-fashioned, except in certain compounds like legal secretary and press secretary. It is now more usual to call somebody an assistant or PA." https://www.oxfordlearnersdictionaries.com/definition/english/secretary (8.2.2020).
47 Cambridge Dictionary, https://dictionary.cambridge.org/dictionary/english/secretary (8.2.2020).
48 *Pringle*, 1989, p. 1.

of time it was applied to more and varied functions, describing indiscriminately both, less as well as more influential posts within the bureaucracy of institutions and businesses. Sometimes one even dispensed with the need to distinguish between humans and machines, that is, the noun "typewriter" was used for both: the machine and the person operating it.[49] While there has been an impressive amount of dissertations on the topic of the typewriter (=machine) as a historiographic artefact in culture, technology and science since the 1930s;[50] the lack of accuracy in the job description, or rather the indiscriminate use of the term "secretary" notwithstanding if referring to a personal assistant/executive assistant, administrative officer or a stenographer was for many years reflected in a lack of historiography on the person who operated that machine (not to mention: managed the office), and thus obviously the inherent lack of interest in such subordinate a position.[51] In the following: a brief historical outline of the evolution in the office—and how it became the prototype of a female profession.

49 See *Saval*, 2014, 75. Comprehensively and immensely entertaining: *Kittler*, 1986, p. 273, p. 400. Kittler was dubbed the "most distinguished intellectual enemy of the Apple universe", Hans Gumbrecht, NZZ, 18 June 2019. In German the derogatory term "*Tippse*" was derived from the verb "*tippen*" (typing).

50 Some randomly selected titles: Hermann Popp: *Kinematische und dynamische Untersuchung der Schreibmaschine*, Technische Hochschule München, 1930; Hermann Reinecke: *Über die handangetriebenen Anschlaggetriebe der Schreibmaschine*, Technische Hochschule Braunschweig, 1953; Karlheinz Vielhauer: *Die deutsche Schreibmaschinen-Industrie,* Universität Frankfurt (Main), 1954; Erich Bürger: *Untersuchungen an manuell angetriebenen Schreibmaschinen*. Technische Hochschule Dresden, 1958; Hermann Harald Koch: *Über die Kraftübertragung in einer motorisch angetriebenen Schreibmaschine*, Technische Hochschule Braunschweig, 1963; Shuying Zhang: *Neues Konzept einer Schreibmaschine für chinesische Schrift*. Technische Universität München, 1981.

51 Among the first to distinguish between white-collar employees and secretaries were Jürgen Kocka, Gisela Brinkler-Gabler and Ursula Nienhaus, while Gabriele Rösler provided the first German thesis on the working conditions of secretaries; *Kocka*, 1977; *Brinker-Gabler* (ed.), 1979; *Rösler*, 1981; *Nienhaus*, 1982). By now the literary corpus on the subject has become quite comprehensive.

JOB EVOLUTION

A stenographer [...] is paid to do; a secretary is paid to think.[52]

Women's employment at the office is a result of the demographic shifts created by several wars. The historical development of the secretarial profession is prototypical for the feminization and subsequent (alleged) deprofessionalization described by Hicks (2017). One that, alas, proves to die hard, as for instance indicated by today's salary brackets of "secretaries/assistants", especially in higher education. So what does a "secretary/assistant" actually do?

In a nutshell, classical paper work in the office encompassed writing and filing—evolving from copying (by hand), type-writing, taking dictation, shorthand-writing systems, multiplication with carbon copies and lithography, filing systems, cataloguing with index cards, and later via punched card systems eventually to word processing and today's "virtual" office.[53] The hierarchy at the office went from *typist*, who typed up documents from stenographic notes or recordings or made sense out of marked-up hard copy. Next came the stenographer, who took dictation and subsequently typed up their notes or handed them to a typist. At the top of the hierarchy was the secretary, who provided support to executives (directors in the Max Planck Society) and ran the office in general. Another hierarchy existed among the secretaries themselves, depending on whether they were executive, directorial, departmental or confidential secretaries.

DEXTERITY, DILLIGENCE AND PATIENCE

It seems there are not many job titles more clearly gendered than "secretary" (well, yes: checkout girl and cleaning woman)—but until the nineteenth century, clerical office work was mainly reserved for men. The turning point for women's clerical employment came during the American Civil War (1861–1865). Male labor was scarce, so the government began hiring women for office jobs. Francis Elias Spinner (1802–1890), the former Treasurer of the United States is attributed with having initiated the

52 "Secretaries Quash Idea They Like to Romance with Their Bosses," *Los Angeles Times*, October 2, 1949, p. 21.

53 An excellent insight into the history and evolution of office life provides *Gardey,* 2019.

employment of women in government offices.[54] He first contracted women to count currency bills and "later to take over various clerical duties, so that by the end of the war women had a definite status in the civil service."[55] Not surprisingly, women did an excellent job. Thus, after the war, women continued to be employed (at least until they married)—not least due to the fact that they were paid less. "Under [US] federal law in 1866, the maximum salary for women was $900 a year, compared with a ceiling between $1,200 and $1,800 for men."[56] In Germany, the paradigm of male dominated bureaucracy began to shift during the *Gründerzeit* following the Franco-Prussian War in 1870/71. Here too, working women were paid and respected less. In her study on the emergence of female professionals, Ursula Nienhaus estimated that a women typing approximately 37,500 characters a day on poorly engineered typewriters lifted the equivalent of 15 tons with their fingertips.[57]

In 1870, there were eighty thousand clerical workers in the USA; only three percent were women. Fifty years later, there were three million clerical workers, of whom women made up nearly 50 percent.[58] Their dexterity, diligence and patience made women allegedly perfectly suited for the job as a secretary. In addition to being a low-income group, women became attractive employees since they were restricted to particular positions, such as stenography; that is, work that did not involve much imagination or initiative, whether it be handwritten dictation or mechanical typing. According to Nikil Saval, the reason for this was that women were considered to be better able to handle thankless work.[59] The private secretary, too, gradually became identified as exclusively female. Unlike the tediousness of stenography and typing, it was the "dead-endedness" of secretarial work that supposedly made it appropriate for women, who were not expected to pursue careers.[60] In 1925, efficiency disciple William Henry Leffingwell (1876–1934), famed for applying scientific management to the office,[61] claimed:

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54 Remarkably this high-profile position has been held exclusively by women since 1949, when then President Harry S. Truman (1884–1972) appointed actress and business woman Georgia Neese Clarke Gray (1898–1995) as the first woman to serve as Treasurer of the United States.
55 *Shaw*, p. 1935.
56 Cf. *Strom,* 1989, p. 55.
57 *Nienhaus*, 1982, p. 25.
58 *Saval*, 2014, p. 74.
59 *Saval*, 2014, pp. 74–75.
60 *Saval*, 2014, p. 76.
61 For more on industrial efficiency and F.W. Taylor in particular, see: *Kanigel*, 2005.

> A woman is to be preferred to the secretarial position for she is not averse to doing minor tasks, work involving the handling of petty details, which would irk and irritate ambitious young men, who usually feel that the work they are doing is of no importance if it can be performed by some person with a lower salary.[62]

Then, just like today (when e.g. the majority of "secretaries/assistants" in the MPS holds an academic degree) many women accepted these jobs due to a lack of alternatives and economic constraints.

> But for every woman who climbed out of the steno pool and into an executive position were many others who were stymied by what came to be known in the mid-1980s as the glass ceiling: an unacknowledged but unsurpassable barrier based solely on gender. Still more were shunted into a secretarial career because there were few other choices.[63]

TECHNOLOGICAL REVOLUTION: TYPEWRITERS AND DICTAPHONES

Two so-called revolutions impacted the scope of secretarial activities: the technological one in the late nineteenth century, and the digital one about hundred years later. For the best part of the twentieth century, it was impossible to imagine the office without typewriters, telephones and filing cabinets. Technologies, which have been central in defining secretarial work—"and to the construction of the boss-secretary relationship."[64] The most important development was the advent of commercial (electro-)mechanical typewriter. In 1873, Remington produced the first widely used typewriter in the office.[65] In 1888, John Harrison, an expert on type-writers, deemed that the typewriter was "especially adapted to feminine fingers. They seem to be made for typewriting. The typewriting involves no hard labor and no more skill than playing the piano".[66] Advertisements for typewriters were populated by "stereotypically supple-wristed female angels, their delicate, elongated piano fingers hovering expectantly over the

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62 *Leffingwell*, 1925, p. 621.
63 *Peril*, 2011, p. 3.
64 *Pringle*, 1989, p. 175.
65 For a while in the 1940s, Remington manufactured guns as well as typewriters; it went on to produce the first UNIVAC computers in the 1950s.
66 *Harrison,* 1888, p. 9. For a more sophisticated assessment of women's hands on keys see *Frevert*, 1979, pp. 82–112.

keys."[67] (What about brain surgery—a profession that doubtlessly demands a high level of dexterity.[68]) Also around this time, the first specialized typing and shorthand schools appeared, the forerunners of the secretarial colleges, the most famous being the *Katharine Gibbs College* (whose graduates became known and esteemed as *Gibbs' Girls*[69]). Likewise crucial in changing office work were two inventions by Alexander Graham Bell: the telephone in 1870 and the Dictaphone in 1886 (using sound recording technology pioneered by Thomas Edison).

DIGITAL REVOLUTION – THE VIRTUAL SECRETARY

In 2013 British author Lucy Kellaway asked her readers "Do you remember the office before email?" And declared that by now the computer had actually become the office: it had a desktop, files, folders, documents, and a litterbin, thus combing all the "dominant metaphors" from secretarial work.[70] Her colleague Emma Jacobs took things even further by pronouncing the profession of secretary dead:

> In the future, personal assistants will be constructed from microprocessors and remote controlled. We are halfway there, after all. Want to dial your sales director? Ask Siri. Still determined to retain secretarial services? Then hire a virtual assistant, based in Mumbai or Brooklyn, by the hour.[71]

The virtual secretary in a paperless office—how did this happen? In a much-cited title story in *Business Week* in 1975, "The Office of The Future", George E. Pake, one of the founders of *Xerox Parc* predicted that the following twenty years would see a revolution in office life due to the advent of the desktop computer: "I'll be able to call up documents from my files on the screen, or by pressing a button, […] I can get my mail or any messages. I don't know how much hard copy I'll want in this world. It will

67 *Saval*, 2014, p. 75.
68 Interesting enough since the early 2010s the female percentage in this profession is notably growing: in 2017, 41 out of 138 neurosurgeons were female, and among neurologists the women clearly outweighed their male colleagues: 336 out of a total of 541. https://www.bundesaerztekammer.de/fileadmin/user_upload/downloads/pdf-Ordner/Statistik2017/Stat17AbbTab.pdf: (19.3.19).
69 *Doherty*, 2014.
70 *Kellaway*, 2013.
71 *Jacobs,* 2015.

change our daily life, and this could be kind of scary.“ [72] Almost fifty years later he has been proven right. However, the 1970s idea of word processing was very different from today’s:

> The “buzz word“ for this year's show was “word processing,“ or the use of electronic equipment, such as typewriters; procedures, and trained personnel to Maximize office efficiency. At the I.B.M. exhibition a girl typed on an electronic typewriter. The copy was received on a magnetic tape cassette which accepted corrections, deletions and additions and then produced a perfect letter for the boss's signature. The perfect letter could then be sent over telephone lines to other offices around the country, or the typewriter could also be used as an input device for computers.[73]

Figure 3: The IBM MT/ST word processor used in the mid-1960s at the Max Planck Institute for Human Development in Berlin. © AMPG [74]

72 “The Office of the Future”, 1975, p. 48.
73 *Smith*, 1971.
74 *Betriebsrat Bildungsforschung 1967–1968*, AMPG, Abt. II, Rep.43, K 29.

Moreover one tried to sell word processing as a "feminist innovation": "According to some manufacturers, the concept of 'word processing' could be the answer to Women's Lib advocates' prayers. Word processing will replace the 'traditional secretary' and give women new administrative roles in business and industry."[75] Well, it didn't quite work out like that. This had to do with the fact that word processing was to be done in pools by specialized typists working with text-editing machines.[76] As Kellaway put it: "Being bumped off to the new word processing pool turned out to be only slightly more fun than punching holes in cards."[77]

As computers became more sophisticated, working with them stopped being low status work and was subsequently more and more regarded as a male domain. A gendered power shift took place until eventually "computer programming aggressively altered from feminized work to a firmly masculine professional endeavour."[78] For the majority of secretaries, word processing did not come along until the arrival of the desktop computer.[79] And in the late 1980s and early 1990s, work was redistributed. According to Rosemary Pringle, office equipment and technology have been decisive for the archaic pattern that determines the power imbalance in the relationship between the secretary and her superior:

> To understand why the boss-secretary relationship continues to be normatively constructed around male power and female subordination and why despite automation it may still be preserved we have to consider; the meanings attached to technology, the struggles around these meanings and the potentials attached to technology. [80]

This is an assessment shared by Lynn Peril, who considered that the power differential "inherent in the relationship between boss (dominant) and secretary (submissive) made it a natural for all sorts of sadomasochistic scenarios."[81]

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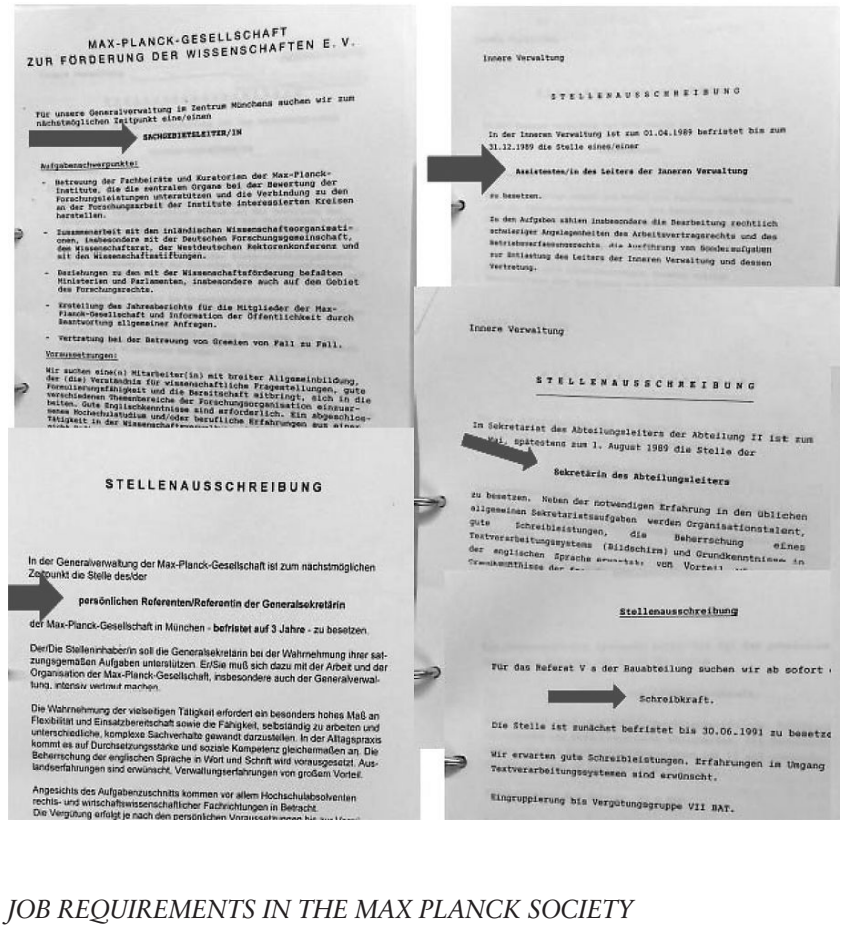
75 Smith, 1971.
76 See also, IV. IBM-Magnetband-Maschinen, *Betriebsrat Bildungsforschung 1967–1968*, AMPG, Abt. II, Rep.43, K 29, pp. 3–4.
77 *Kellaway*, 2013.
78 *Hicks*, 2017, pos. 1699.
79 On June 5, 1977 Steve Jobs and Steve Wozniak launched Apple II, the first 8-bit home computer and one of the first highly successful mass-produced microcomputer products at West Coast Computer Faire; four years later, on August 12, 1981, IBM brought out the PC.
80 *Pringle*, 1989, p. 174.
81 *Peril*, 2011, p. 8.

Figure 4: Job offers for different offices in the Administrative Headquarters over the course of 30 years illustrating the diversity of the field.[82]



MAX-PLANCK-GESELLSCHAFT
ZUR FÖRDERUNG DER WISSENSCHAFTEN E. V.

Für unsere Generalverwaltung im Zentrum Münchens suchen wir zum nächstmöglichen Zeitpunkt eine/einen

SACHGEBIETSLEITER/IN

Aufgabenschwerpunkte:

- Betreuung der Fachbeiräte und Kuratorien der Max-Planck-Institute, die die zentralen Organe bei der Bewertung der Forschungsleistungen unterstützen und die Verbindung zu den Forschungsleistungen unterstützen und die Verbindung zu den an der Forschungsarbeit der Institute interessierten Kreisen herstellen.
- Zusammenarbeit mit den inländischen Wissenschaftsorganisationen, insbesondere mit der Deutschen Forschungsgemeinschaft, dem Wissenschaftsrat, der Westdeutschen Rektorenkonferenz und mit den Wissenschaftsstiftungen.
- Beziehungen zu den mit der Wissenschaftsförderung befaßten Ministerien und Parlamenten, insbesondere auch auf dem Gebiet des Forschungsrechts.
- Erstellung des Jahresberichts für die Mitglieder der Max-Planck-Gesellschaft und Information der Öffentlichkeit durch Beantwortung allgemeiner Anfragen.
- Vertretung bei der Betreuung von Gremien von Fall zu Fall.

Voraussetzungen:

Wir suchen eine(n) Mitarbeiter(in) mit breiter Allgemeinbildung, der (die) Verständnis für wissenschaftliche Fragestellungen, gute Formulierungsfähigkeit und die Bereitschaft mitbringt, sich in die verschiedenen Themenbereiche der Forschungsorganisation einzuarbeiten. Gute Englischkenntnisse sind erforderlich. Ein abgeschlossenes Hochschulstudium und/oder berufliche Erfahrungen aus einer Tätigkeit in der Wissenschaftsverwaltung

Innere Verwaltung

STELLENAUSSCHREIBUNG

In der Inneren Verwaltung ist zum 01.04.1989 befristet bis zum 31.12.1989 die Stelle eines/einer

Assistenten/in des Leiters der Inneren Verwaltung

zu besetzen.

Zu den Aufgaben zählen insbesondere die Bearbeitung rechtlich schwieriger Angelegenheiten des Arbeitsvertragsrechts und des Betriebsverfassungsrechts, die Ausführung von Sonderaufgaben zur Entlastung des Leiters der Inneren Verwaltung und dessen Vertretung.

STELLENAUSSCHREIBUNG

In der Generalverwaltung der Max-Planck-Gesellschaft ist zum nächstmöglichen Zeitpunkt die Stelle des/der

persönlichen Referenten/Referentin der Generalsekretärin

der Max-Planck-Gesellschaft in München - befristet auf 3 Jahre - zu besetzen.

Der/Die Stelleninhaber/in soll die Generalsekretärin bei der Wahrnehmung ihrer satzungsgemäßen Aufgaben unterstützen. Er/Sie muß sich dazu mit der Arbeit und der Organisation der Max-Planck-Gesellschaft, insbesondere auch der Generalverwaltung, intensiv vertraut machen.

Die Wahrnehmung der vielseitigen Tätigkeit erfordert ein besonders hohes Maß an Flexibilität und Einsatzbereitschaft sowie die Fähigkeit, selbständig zu arbeiten und unterschiedliche, komplexe Sachverhalte gewandt darzustellen. In der Alltagspraxis kommt es auf Durchsetzungsstärke und soziale Kompetenz gleichermaßen an. Die Beherrschung der englischen Sprache in Wort und Schrift wird vorausgesetzt. Auslandserfahrungen sind erwünscht, Verwaltungserfahrungen von großem Vorteil.

Angesichts des Aufgabenzuschnitts kommen vor allem Hochschulabsolventen rechts- und wirtschaftswissenschaftlicher Fachrichtungen in Betracht.
Die Vergütung erfolgt je nach den persönlichen Voraussetzungen bis zur Vergü

Innere Verwaltung

STELLENAUSSCHREIBUNG

Im Sekretariat des Abteilungsleiters der Abteilung II ist zum [illegible], spätestens zum 1. August 1989 die Stelle der

Sekretärin des Abteilungsleiters

zu besetzen. Neben der notwendigen Erfahrung in den üblichen allgemeinen Sekretariatsaufgaben werden Organisationstalent, gute Schreibleistungen, die Beherrschung eines Textverarbeitungssystems (Bildschirm) und Grundkenntnisse der englischen Sprache erwartet; von Vorteil

Stellenausschreibung

Für das Referat V a der Bauabteilung suchen wir ab sofort

Schreibkraft.

Die Stelle ist zunächst befristet bis 30.06.1991 zu besetzen.

Wir erwarten gute Schreibleistungen. Erfahrungen im Umgang Textverarbeitungssystemen sind erwünscht.

Eingruppierung bis Vergütungsgruppe VII BAT.

JOB REQUIREMENTS IN THE MAX PLANCK SOCIETY

It goes without saying that in the Max Planck Society classical secretarial tasks, such as correspondence, answering the phone, filing, takings notes, administrative organization and appointment coordination were and are expected from secretaries/assistants working there. Naturally, nobody needs a stenographer any more. Instead many other skills are expected,

82 Selected from job offers between 1979 and 2007 for openings in the GV; *Registratur der Generalverwaltung*, BC 214.993–BC 214994.

above all excellent organizational skills as well as strong commitment, independence and a sense of responsibility. Job requirements in project/department-related management include accounting, public relations (media and website management), business trip planning, and event management (e.g. conferences). Excellent command of English and language proficiency in at least another language is expected. Computer skills are not even mentioned any more, they are taken for granted. Specific requirements vary across the three traditional sections of the Max Planck Society: whereas in the Humanities services of editorial assistants (who are obviously no secretaries) are often required; in the Chemistry, Physics and Technology Section or in the BMS, however, where the research results may eventually lead to the filing for a patent application, assistants with an understanding of contract law are welcome. The fact that today the majority of "secretaries/assistants" in the Max Planck Society is academically trained (usually a university degree, some even PhDs) comes handy in tasks requiring scientific understanding, such as drafting exposés or scientific reports (even though these tasks may not be part of the official job description).

Figure 5: Otto Hahn and his secretary Marie Luise Rehder in his office in the 1950s. © AMPG

The evolution of office work within the Max Planck Society becomes clearly evident when comparing the office of the Society's first president, Otto Hahn(1948–1960), with the office of Martin Stratmann, the current president of the Max Planck Society.

Figure 6: Martin Stratmann and staff in his office, 2019. © MPG

Today's scope of activities of "secretaries" (who are now called "assistants") is so comprehensive and diverse that it proved impossible for the central Personnel Department to statistically assess the number of "secretaries/assistants" currently working at the 88 Max Planck Institutes and its Administrative Headquarters. This must mainly be attributed to the fact that the salary brackets of the office workers are so varied too.[83]

However, the sophistication and diversity of office work is not a recent phenomenon. The Max Planck Institute for Human Development (MPIB) addressed the challenges of office work in research culture decades ago. In the mid-1960s a multi-partied institute commission started working on an office reform, considering the creation of Central Office Centre (*Zentralsekretariat*). This was based on the understanding that such a specific work-sphere required to involve non-academic colleagues into the responsibility—in terms of better participation—of research projects. The idea was to create within the scope of "rationalising paper work" specific office career opportunities for the (exclusively female) employees. It was planned to provide them with incentives regarding income as well as prestige to ad-

83 Currently a guide value is being prepared with the generous help of the gender equality officers and many of the secretaries and assistants at Max Planck Institutes: Thank you so much for your support!

vance from a typist to a *Sachbearbeiterin [administrative officer]*.[84] The scheme from 1967 traversed five levels and four subsequent promotion grades with corresponding salary brackets:

1. *Secretary – VGr. VIII BAT (entry grade):* employees capable of doing independently more demanding work, such as composing short pieces of writing, taking shorthand at 150 syllables per minute for at least five minutes, and subsequently typing this up into flawless German.
2. *Secretary – VGr. VII BAT (first promotion grade):* employees familiar with taking dictation in a foreign language or making simple translations from or into this language.
3. *Administrative officer/trilingual secretary – VGr. VIb BAT (second promotion grade):* employees familiar with taking dictation in two foreign languages or making simple translations from or into those languages. Employees capable of interpreting consecutively and correctly in terms of content and language between two people from German into another language and vice versa.
4. *Administrative officer/multilingual secretary – VGr. Vb BAT (third promotion grade):* employees, familiar with taking dictation in two foreign languages or making simple translations from or into these languages, and distinguish themselves from salary bracket *VIb Fallgruppe 1* through special skills, such as even more languages. | Employees involved in tasks requiring thorough and comprehensive expertise and predominantly independent achievements.
5. *Technical assistant – VGr. IVb BAT (fourth promotion grade)*
   Employees who distinguish themselves from *salary bracket Vb BAT* by performing a particularly valuable task.[85] | Scientific assistants without degrees from higher education.[86]

84 *Betriebsrat Bildungsforschung 1967–1968*, AMPG, Abt. II, Rep.43, K29. *Sachbearbeiterin*.

85 What would that be? Maybe operating the above-mentioned IBM MT/ST word processors that had been installed at the MPIB in 1965.

86 Based on the material from *Betriebsrat Bildungsforschung 1967–1968*, AMPG, Abt. II, Rep. 43, K 29 shown in fig. 7.

Figure 7: New Organization of a Central Office Centre Pool (Zentralsekretariat) at the Max Planck Institute for Human Development in 1967[87]

1. **Sekretärin – VGr. VIII BAT (Eingangsgruppe)**
   Angestellte für schwierigere Arbeiten, unter anderem: Sie müssen in der der Lage sein, einen Teil ihrer Arbeiten selbständig zu erledigen , z. B. kurze Schriftstücke nach Ansage selbständig abzufassen, 150 Silben Stenogramm in der Minute mindestens fünf Minuten lang aufzunehmen und schnell in fehlerfreier deutsche Sprache in Maschinenschrift zu übertragen.
2. **Sekretärin – VGr. VII BAT (erste Beförderungsstufe)**
   Angestellte, die in einer fremden Sprache geläufig nach Diktat schreiben oder einfache Übersetzungen aus dieser oder in diese Sprache anfertigen.
3. **Sachbearbeiterin/Fremdsprachliche Sekretärin – VGr. VIb BAT (zweite Beförderungsstufe)**
   Angestellte, die in zwei fremden Sprachen geläufig nach Diktat schreiben oder einfache Übersetzungen aus diesen oder in diese Sprachen anfertigen
   Angestellte, die Gespräche zwischen zwei Personen satzweise inhaltlich und sprachlich richtig Sprachen aus dem Deutschen in eine fremde Sprache und umgekehrt mündlich übertragen.
4. **Sachbearbeiterin/Fremdsprachliche Sekretärin – VGr. Vb BAT (dritte Beförderungsstufe)**
   Angestellte, die in zwei fremden Sprachen geläufig nach Diktat schreiben oder einfache Übersetzungen aus diesen oder in diese Sprachen anfertigen und sich durch besondere Leistungen aus der Vergütungsgruppe VIb Fallgruppe 1 herausheben (z.B. noch mehr Sprachen)
   Angestellte, in Tätigkeiten, die gründliche, umfassende Fachkenntnisse und überwiegend selbständige Leistungen erfordern.
5. **Technische Assistentin – VGr. IVb BAT (vierte Beförderungsstufe)**
   Angestellte, die sich aus der Vergütungsgruppe V B BAT dadurch herausheben, dass sie eine besonders wertvolle Tätigkeit ausüben.
   Wissenschaftliche Assistenten ohne abgeschlossene Hochschulbildung an Hochschulinstituten.

The issue of secretaries remained a matter of interest at the MPIB, when in 1975 a "Secretaries' Commission" (*Sekretärinnen-Kommission*)[88] was established, led by the then head of administration Horstmar Hale that focused on optimizing the organization of office work. In their report in January 1976, they compared and considered the disadvantages and benefits of assigning one secretary to (a) each scientist, or (b) to workings groups, or (c) to work with one secretary pool (elegantly called "*Kanzlei*") in charge of all paperwork, which was to be managed by administration and not by the directors (spoiler alert: did not work out).

Notwithstanding the many new technological skills in the profession that replaced others no longer needed, such as shorthand or mixing Martinis, there are other, rather soft skills that distinguished secretaries then and

87 *Betriebsrat Bildungsforschung 1967–1968*, AMPG, Abt. II, Rep. 43, K29.
88 *Sekretärinnenkommission Bildungsforschung 1975–1976*, AMPG, Abt. II, Rep. 43, K 34, Bd. 6.

remain crucial to this day.[89] Apart from excellent organizational skills, strong commitment, and a sense of responsibility, these include skills determining the relationship between assistant and superior. The days of ante-chambers may be over, [90] where each director had "an official 'gatekeeper', a female secretary whose position as intermediary is structured architecturally, by being situated in a room one must pass through to access the office of the director;"[91] however, the secretary/assistant is still expected to remain her superior's keeper in terms of confidentiality and trust. A working relationship is founded on mutual trust. Once this trust is shaken, or even breached, the power-makeup in this intrinsic hierarchical (and for the longest of times, patriarchal) relationship may flip—and not in a good way.

FROM SCIENCE SUPPORTERS TO SCIENCE MANAGERS

Recent studies have increasingly recognized that contemporary office work at the top echelon of higher education can no longer be regarded as merely "supporting"—the science supporters have become science managers in their own right.[92]

At the Humboldt University in Berlin, a research project run over three years (2013–2016) investigated over three years (2013–2016) the "Transformation of Work in Science-Supporting Areas at Universities", and provided an empirical study analyzing the changing work requirements and occupational conditions of the science supporting staff in offices, libraries, laboratories, data centers and administrative bodies at universities and the forces driving that change.[93]

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89 As confirmed by the testaments of such extraordinary presidential secretaries as Herta Fricke and Martina Walcher, or Brigitte Weber-Bosse, the first secretary of the CPTS.

90 Referring to the common architectural structure described by Vita Peacock: "The directors, meanwhile will often be situated on the top floors of the building, with large comfortable offices accessible through the ante-chambers of their secretaries'." *Peacock*, 2014, p. 59.

91 *Peacock*, 2014, p. 140.

92 *Banscherus/Friedrich-Ebert-Stiftung* (eds.), 2009; *Ulf Banscherus et al.*, 2017; *Whitchurch*, 2015, pp. 79–99; *Frei/Mangold* (eds.), 2015).

93 "Wandel der Arbeit in wissenschaftsunterstützenden Bereichen an Hochschulen" https://www.zewk.tu-berlin.de/fileadmin/f12/Downloads/koop/publikationen/BiwuB-Doku.pdf.

An increasing number of staff in research institutions with both academic and professional credentials find themselves working in a multi-disciplinary environment, which requires a blend of academic and professional input and interaction. With the "Third Space" environment, Celia Whitchurch provided a concept to approach the conflicts stemming from the institutional interface between academic and non-academic professionals.[94] "The concept is used as a way of exploring groups of staff in higher education who do not fit conventional binary descriptors such as those enshrined in 'academic' or 'non-academic' employment categories."[95] Such hybrid work environments are commonplace in today's diverse research culture in the Max Planck Society. Former binary approaches to scientific communities seem outdated and problematic in viewing the roles, identities and working practices of staff. A hybrid approach seems even more fitting in such a hierarchical work environment, where many of the women working in subordinated positions are academics themselves.

Alban Frei portrayed "The Science Manageress":[96] his postmodern science manageress is located at the interface between science and business, Frei calls her a "border crosser between academic science and economic business culture".[97] In a job description, her tasks would include assisting the executive director in any aspect of science management with a focus on commercial and personnel law administration for federal and third party funds. Further responsibilities may involve public relations, advancement of junior research groups, quality management and possibly becoming the institute's gender equality officer. Her CV would have to feature a PhD, relevant management experience, expertise in personnel management, communication skills and team spirit.[98] Admittedly, Frei's job description sounds rather like an ad for a research coordinator (a position still predominantly, though not exclusively held by men in the Max Planck Society) than for an executive secretary/assistant, but it is by no means far-fetched, as proven by current job advertisements.[99] Furthermore, looking at the assignments and achievements of legendary secretary Erika Bollmann (1901–1997), who served in both, the Kaiser Wilhelm Society and the Max Planck

94 *Whitchurch*, 2013.
95 *Whitchurch*, 2013, p. 80.
96 *Frei*, 2015, pp. 243–256.
97 "[S]ie ist eine Grenzgängerin zwischen akademischer Wissenschafts- und betriebswirtschaftlicher Unternehmenskultur." *Frei*, 2015, p. 244.
98 *Frei*, 2015, p. 244.
99 https://jobs.zeit.de/jobs/projekt-und-arbeitsgruppenmanager-m-w-max-planck-gesellschaft-zur-foerderung-der-wissenschaften-e-v-berlin-1001818.

Society under "eleven presidents" starting in 1936, it seems as if this is not only a postmodern job profile.[100] But at long last the title is changing.

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100 For more background on Bollmann, see *Globig*, 1997, 47–53; *Bollmann*, 1956.

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ABOUT THE INSTITUTE

Max Planck Institute for the History of Science

The Research Program "History of the Max Planck Society" (Geschichte der Max-Planck-Gesellschaft, GMPG) emerged from Department I of the Institute and its work on the historical epistemology of scientific institutions. Its aim is a comprehensive analysis of the Max Planck Society's history embedded in the contexts of contemporary history and history of science. The research period under investigation starts with the Society's foundation in 1948 and ends with the presidency of Hubert Markl in 2002. As a result of the former presidential commission on the history of the Kaiser Wilhelm Society during National Socialism as well as the completion of the Aufbau Ost program, the investigation will be extended until 2005. The research program has a focus on the dynamic interactions between research practice and institutional history; on changes in the working methods and research objectives of the Max Planck Society; and on the Society's local and global networks, and how these are embedded in science, society, and politics. Given that more than 80 institutes existed in 2002, plus 20 more that have been closed since 1948, the objective is not so much to investigate the history of individual institutes but rather to take a comprehensive approach allowing us to study clusters of institutes active in the same scientific field.

Women in Creative Labor: Inventors, Entrepreneurs and Academics

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ABSTRACT

This article provides an overview of the latest empirical research on the gender gap in knowledge-intensive occupations from an economics perspective. It studies contributing factors both from an institutional and behavioral perspective, and considers potential solutions. The persisting gender gap is not only an issue of social fairness; it also hampers innovation and has direct negative implications for individual productivity as well as economic growth. The overview of the existing gender literature, as well as our own research, emphasize that it is imperative to fight the gender gap with well-tailored policies and to support gender equality at the institutional and personal level.

When talking about gender equality, one usually first thinks about the equal rights movements in the 1970s that promoted equal rights regardless of sex. During that time, major legal breakthroughs were achieved. Recently, the topic of gender equality has seen a revival of interest among the general public and researchers in connection with labor market disparities. In the past two decades, the progress of women on the labor market has stalled—despite the attention of the media and policymakers. The period of strongest convergence in labor market outcomes between men and women took place in the 1980s and progress has been slower and more uneven thereafter. Since the 1990s, the increase in female labor force participation has slowed down and occupational segregation by sex and the resulting pay gap persist, with disproportionally few women assuming lead-

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ership positions.[1] Strikingly, different labor market outcomes can no longer be explained by conventional human capital measures such as level of education, job experience and working hours.

Today, women are still severely under-represented in inventive professions, among entrepreneurs, and in academia. They represent between 7 per cent and 18 per cent of the inventors' population in the US and in Europe, depending on cohorts and technological field.[2] In 2014, women constituted only 29 per cent of start-up entrepreneurs in Europe.[3] Additionally, only one third of the researchers in the EU are women—a share that has not seen an improvement since 2015.[4]

Under-representation of women in knowledge-intensive jobs is not purely a concern of social fairness. It has negative economic consequences. By employing talents regardless of gender, firms could become more innovative and, consequently, more productive. An increase in diversity, both among management and workers, has a positive effect on innovation and productivity.[5]

The gender gap in knowledge-intensive jobs is an important topic on the research agenda of the Max Planck Institute for Innovation and Competition. We study behavioral factors that contribute to different manifestations of the gender gap, document gender disparities in certain occupations and test potential solutions. In this chapter, we focus on the gender gap in the inventive profession, in entrepreneurship and academia.

UNDERSTANDING THE GENDER GAP

When economists talk about the gender gap, they do not only refer to differential pay but to any systematic differences in the outcomes that men and women achieve in the labor market. Examples are differences in the percentages of men and women in the labor force, in the types of occupations they choose, in their positions on the career ladder, their relative incomes, or hourly wages.[6]

To understand gender-based disparities in occupation and pay, it is helpful to distinguish between *demand-side effects*, which refer to actions of the

1 *Blau/Kahn* 2017.
2 *Hoisl/Mariani*, 2019; *Bell/Chetty/Jaravel/Petkova/Reenen*, 2019.
3 *European Commission*, 2014.
4 *European Commission*, 2019.
5 *Hoogendoorn/Oosterbeek/van Praag*, 2013; *Vegt/Janssen*, 2003.
6 *Goldin*, 2008.

employers and *supply-side effects*, which refer to individual choices and behavior.[7]

A demand-side effect typically means greater demand for men when filling desirable jobs;[8] that is, discrimination of women. Discrimination may be statistical. If employers have imperfect information about employees, they may infer their productivity from statistical information. In the case where women had been less productive in the past due to historic discrimination, this triggers a self-reinforcing process.[9] Discrimination may also be taste-based, meaning that some have prejudices against female workers regardless of their productivity.[10] Importantly, both statistical and taste-based discrimination may not be rooted in actual performance of groups or personal traits of the members but in the beliefs on performance of the group and stereotypes.[11] Both statistical and taste-based discrimination is well documented in the literature.[12] Apart from directly harming the outcomes of the discriminated, discrimination on the demand-side influences the supply side of the problem: A person who anticipates that they will be discriminated against may be less willing to invest in human capital. Notably, even in an environment without existing stereotypes and entrenched gender roles, the discriminatory dynamics, where one group is systematically preferred to another, are fast to emerge.[13]

The literature on supply-side effects explains gender gaps by the preferences or aspirations men and women develop for different kinds of work.[14] Whereas early literature assumed that women have intrinsically lower levels of career aspirations than men, more recent literature showed that their experiences with gender inequality on the labor market induces lower expectations about career success.[15]

Significant effort has been extended to detect behavioral features that could explain differences in labor market outcomes. It has been found that

7 *Fernandez-Mateo/Kaplan*, 2018.
8 *Reskin/Roos*, 1990.
9 *Arrow*, 1973; *Phelps*, 1972.
10 *Neilson/Ying*, 2016.
11 *Bohren/Imas/Rosenberg*, 2019; *Bordalo/Coffman/Gennaioli/Shleifer*, 2016; *Reuben/Sapienza/Zingales*, 2014.
12 *Milkman/Akinola/Chugh*, 2012.
13 *de Haan/Offerman/Sloof*, 2017.
14 *Correll*, 2004.
15 *Gibson/Lawrence*, 2010.

women are less competitive,[16] less willing to take risks,[17] less optimistic,[18] less confident,[19] as well as less achievement-oriented and growth-oriented[20] than men.

Notably, women seem to behave differently if they are in a male-dominated environment. Since most prestigious and highly paid jobs are currently considered to be male-dominated, these behavioral changes are of particular importance. Male-majority environments sometimes impact women's performance negatively[21] and may induce women to behave in a more stereotypically female way. For example, women tend to take fewer risks[22] and opt out of competition to a greater extent when around men.[23] There is growing evidence that it is difficult for women to go up the ranks in environments with many men. There are several reasons for this. Men tend to undervalue women's expertise and leadership skills to a larger extent than women do.[24] Further, the larger the share of men in a group, the less credit women get for their ideas[25] or leadership[26], the more backlash they experience[27] and the more likely they are to quit.[28] In a laboratory experiment, Born et al. documented that female participants are less likely to volunteer for leadership roles in male-majority teams.[29] The main driving forces behind this finding are that women in male-majority teams are less confident, less influential, more swayed by others, and correctly expect less support from team members than women in female-majority teams.

In the following, we will focus on gender gaps in inventive professions, in entrepreneurship and in academia. The above-mentioned mechanisms seem to explain at least part of the gender gap we can observe for these three groups of knowledge workers.

16 *Niederle/Vesterlund*, 2007.
17 *Vandegrift/Yavas*, 2009.
18 *Jacobsen/Lee/Marquering/Zhang*, 2014.
19 *Wilson/Kickul/Marlino*, 2007.
20 *Schwartz/Rubel*, 2005.
21 *Booth/Yamamura*, 2018.
22 *Booth/Nolen*, 2012.
23 *Burow/Beblo/Beninger/Schröder*, 2017.
24 *Mengel/Sauermann/Zölitz*, 2018.
25 *Coffman/Flikkema/Shurchkov*, 2019.
26 *Gloor/Morf/Paustian-Underdahl/Backes-Gellner*, 2020.
27 *Chakraborty/Serra*, 2021.
28 *Bostwick/Weinberg*, 2018.
29 *Born/Ranehill/Sandberg*, 2018.

WOMEN IN INVENTIVE PROFESSIONS

The very low presence of women among inventors (i.e., individuals who made technical inventions for which a patent was filed) points to an underutilization of women's innovative potential. Bell et al. are among the few that analyzed the factors that determine whether an individual becomes an inventor or not.[30] They found that women become inventors only if exposed to innovation during childhood or through role models. Female inventors are treated differently than men (demand-side effect). As in many other fields, women inventors have a lower status; that is, the perceived quality of their inventions in relation to the perceived quality of men's inventions is lower.[31] Women face challenges in attracting critical resources, such as money or lab space, needed for their inventive activity.[32] Additionally, they typically do not get the appreciation they deserve for their merits. Jensen et al. analyzed US inventors and found that patents held by women—all else being equal—receive 11 per cent less citations from subsequent patents than those held by men, even after accounting for the technological area.[33] The residual differences may well be explained by discrimination or neglect of women's inventions by male competitors or colleagues. If women have fewer chances to demonstrate their potential, this could lead to gender-induced productivity differences in male-dominated jobs.

In addition, preconceived ideas about women's potential could generate different returns on similar competences and job performance. Toivanen and Väänänen, for example, showed that women inventors receive the same immediate returns on patents (i.e., temporary increase of annual earnings) as men do, but not the same long-term returns (i.e., longer-lasting premiums in earnings after three years).[34] Hoisl and Mariani found that women and men are equally likely to receive awards for their inventive achievements.[35] However, female inventors receive a 49.6 per cent lower reward in nominal monetary terms (about 1,255 Euros less compared to an overall average of 3,252 Euros). This leads to a cumulative wage gap. In 2009, female full-time workers in the US earned 77 per cent as much as male full-time workers, and in the European Union, gender-based wage

30 *Bell/Chetty/Jaravel/Petkova/Van Reenen*, 2019.
31 *Podolny*, 1993.
32 *Ridgeway*, 1991.
33 *Jensen/Kovács/Sorenson*, 2018.
34 *Toivanen/Väänänen*, 2012.
35 *Hoisl/Mariani*, 2019.

gaps amounted to 16.2 per cent in 2011 and 14.2 per cent in 2014.[36] Authors often argue that such differentials reflect differences in endowments or productivity. Others show that the wage gap persists, even though the productivity gap has closed over time.

The presumably unfair treatment of women inventors results in higher drop-out rates of women from this male-dominated profession. Hunt, for instance, used the 1993 and 2003 US National Surveys of College Graduates and found that only 9.8 per cent of male engineers were leaving R&D, while the exit rate of female engineers amounted to 12.9 per cent.[37]

Hoisl and Mariani provided an analysis that aims to better understand the differences in income and job performance between women and men in the inventive professions.[38] The analysis is based on data collected through a large-scale survey of 9,799 inventors from 21 European countries, Israel, the US and Japan (the InnoS&T Survey[39]), conducted between 2009 and 2011. The data contain information on the inventors' individual characteristics and women's participation in science and engineering, the characteristics of the employer organizations, the role of the inventors within organizations, their willingness to take risks, and their technological field of activity.

The results showed that a gender-wage gap exists in favor of male inventors, though the gap does not correspond to better inventive outcomes in terms of the technological importance of the inventions they produce. Additionally, even in high-skill jobs, not only is the wage gap not fully explained by differences in the inventors' observable characteristics, such as the number of working hours, past productivity levels, education, or the type of the employer organization, but it particularly concerns female inventors who have children.

Overall, if talent is equally distributed between male and female inventors, the fact that only 4 per cent of inventors are female in the sample examined, and that having children may be responsible for some of the

36 *Boll/Lagemann*, 2018.

37 *Hunt*, 2016.

38 *Hoisl/Mariani*, 2017.

39 InnoS&T ("Innovative S&T Indicators Combining Patent Data and Surveys: Empirical Models and Policy Analyses") is a project commissioned with FP7 funding conducted in co-operation with researchers from Bocconi University (Milan, IT), Bologna University (Bologna, IT), K.U. Leuven (Leuven, BE), and IESE Business School (Barcelona, ES). InnoS&T developed and collected novel and systematic science and technology indicators covering Europe, Israel, the US and Japan through extensive surveys of patent inventors and the creation of indicators based on citations to science in patents.

dropouts from this market, is worrisome. This would imply that while we are exploiting the entire distribution of talents for men (and, therefore, we are drawing also on less talented individuals), we are exploiting only a small part of the talent distribution of women. This may have a negative impact on the quality and quantity of the inventions that can be produced.[40]

WOMEN IN ENTREPRENEURSHIP

Despite increasing efforts to incentivize venture creation (European Commission, 2014), women remain underrepresented within the entrepreneurial community.[41] Women-owned businesses tend to lag behind men-owned ventures with regard to the number of employees, turnover, profitability and growth performance.[42] Policymakers and researchers agree that this gender gap represents an untapped economic.[43]

To date, entrepreneurship literature has considered various explanations for women's lower entrepreneurial propensity. Early work investigated whether female entrepreneurs are discriminated due to systematic barriers in the business environment (*demand-side effects*). Similar to the challenges that inventors face, female entrepreneurs are disadvantaged with respect to resources. They are less likely to receive external capital and lack access to relevant networks.[44] While studies from the late 1990s and early 2000s do find evidence for gender-based discrimination, the conditions of female entrepreneurs seem to have significantly improved over the past decades.[45] Nevertheless, a female entrepreneur remains an exception.

More recent literature has focused on the characteristics of female versus male entrepreneurs (*supply-side effects*). Results show that women's preferences and personality traits differ from characteristics typically associated with entrepreneurs. Especially perceptual variables, such as a low perception of one's own skills and a high fear of failure, considerably affect women's propensity to found businesses.[46]

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40 *Koning/Samila/Ferguson*, 2020.
41 *European Commission*, 2014.
42 *Klapper/Parker*, 2011.
43 *Zwan/Verheul/Thurik*, 2012.
44 *Klapper/Parker,* 2011; *Marlow/Patton*, 2005.
45 *Muravyev/Talavera/Schäfer*, 2009.
46 *Langowitz/Minniti*, 2007.

Another strand in female entrepreneurship literature attributes the gender gap to "nature", assuming that different biological dispositions lead to different gender-specific personality traits or behavioral patterns. Bönte et al.[47] and Guiso and Rustichini,[48] for instance, link entrepreneurial propensity to "typically male" biological predispositions, such as high prenatal testosterone levels. However, these differences have only found partial support in the existing literature. Hence, claiming a dissonance between female genetic dispositions and the necessary traits for becoming an entrepreneur as the sole culprit for the gender gap in entrepreneurship appears to be too simplistic.

Given the compelling evidence for socialization effects as drivers for gendered behavior, another argument is that societal influences, such as cultural norms or prevailing stereotypes, evoke gender differences in preferences, occupational aspirations, or achievement motives. In a world where children start to develop gender stereotypes about cognitive abilities at the age of six or seven,[49] it is likely that women's aspirations and self-perceptions are consciously or subconsciously shaped by a constant confrontation with gender roles in their social reality.

Bechthold and Rosendahl Huber conducted a field experiment to understand how exposure to female entrepreneurial role models at the pre-nascent stage influences the development of entrepreneurial self-efficacy (i.e., an individual's belief in his or her capacity to become an entrepreneur), attitudes and intentions among female students. [50] We consider the pre-nascent stage to be a crucial point in time for fostering female entrepreneurship as gender differences in traits tend to diminish among nascent entrepreneurs.[51]

The combination of a mandatory entrepreneurship course, random assignment of students to teams and entrepreneurs, as well as a pre-post design, allowed us to draw causal inferences about the impact of female entrepreneurial role models. One of the major results is that exposure to female entrepreneurs boosts the development of entrepreneurial self-efficacy and attitudes towards entrepreneurship of female students.

In the second part of our study, we explored whether having entrepreneurial peers, same-gender peers, or being in a highly emotionally intelligent team influences students' development of entrepreneurial in-

47 *Bönte/Procher/Urbig,* 2016.
48 *Guiso/Rustichini*, 2018.
49 *Bian/Leslie/Cimpian*, 2017.
50 *Bechthold/Rosendahl Huber*, 2018.
51 *Brixy/Sternberg/Stüber*, 2012.

tentions. Contrary to previous evidence,[52] we did not find that highly entrepreneurial peers serve as direct transmitters of entrepreneurial propensity. We found some indications that same-gender peers boost the development of positive attitudes towards entrepreneurship as well as entrepreneurial self-efficacy. This effect is larger for female students than for male students. Finally, our results indicate that having highly emotionally intelligent peers positively influences entrepreneurial learning.

WOMEN IN ACADEMIA

In academia, the under-representation of women does not only manifest itself in the share of professorships held by women, but in all parts of academic everyday life. Female researchers receive less grants and less grant money,[53] publish less,[54] are less prominent in textbooks,[55] and receive tenure less often.[56]

The gender imbalance in top academic positions is particularly striking, since gender is more balanced among students and at early stages of an academic career. In the literature, this phenomenon is referred to as the "leaky pipeline", according to which females drop out of academia at different stages of the academic career at higher rates than males do. Understanding the leaky pipeline is crucial for remedying gender disparities in academia.

Again, we have to distinguish between a demand-side effect (i.e., the actions of the research community and peers) and a supply-side effect (i.e., the choices and behavior of female researchers).[57] The latter can include inefficient networking, lack of geographical mobility and self-promotion. The former can include a hostile work environment, gendered institutional policies and apparent implicit bias in promotion and tenure processes.[58]

Ductor et al. showed that female researchers are more likely than male researchers to work with the same authors, resulting in more intensive collaborations of females compared to males. [59] As a consequence, networks of women are denser than those of men. Dense networks are beneficial in

52 *Weber*, 2012.
53 *Oliveira/Ma/Woodruff/Uzzi,* 2019.
54 *Larivière/Ni/Gingras/Cronin/Sugimoto*, 2013.
55 *Stevenson/Zlotnik*, 2018.
56 *Conti/Visentin*, 2016.
57 *Fernandez-Mateo/Kaplan*, 2018.
58 *Lundberg/Stearns*, 2019.
59 *Ducto/Goyal/Prummer*, 2020.

environments with low uncertainty.[60] Sparse networks, on the contrary, deliver new information faster than dense networks, which is particularly valuable in environments characterized by high uncertainty, such as academic science. Another reason for differences in the network structure of female versus male scientists might be that female scientists, especially if they have school-age children, are more unwilling to move jobs than males.[61] Job mobility, however, increases the size of the professional network.[62]

In academia, researchers are judged by the impact of their research, typically by the number of citations they receive for their publications. The publications of female scientists get fewer citations. One of the reasons for this is that women self-promote themselves less than men. A study based on 1.5 million research papers showed that, during the last two decades, male researchers self-cited their own work 70 per cent more often than female researchers.[63]

While a hostile environment is difficult to operationalize, there is empirical evidence of prejudice towards female scientists shared by colleagues and students. Wu (2018) analyzed the comments posted on an anonymous (and non-representative) forum for economists and documented strong sexist sentiment.[64] Contributors used words that concern the physical appearance (e.g., "hot" or "attractive") when referring to female economists. In contrast, when writing about male economists, contributors used words that refer to academic roles or achievements, such as "advisor", "Nobel" (laureate) or "supervisor". Students mirror the attitudes of the professional community. Boring analyzed teaching evaluations filled out by students from a French university and showed that male students express a positive bias in favor of male professors.[65] Students commented on different dimensions of teaching that match gender stereotypes. Men are perceived by both male and female students as being more knowledgeable and having stronger class leadership skills (which are stereotypically associated with males). However, there is no effect on knowledge transfer; that is, students seem to learn as much from female professors as from male ones.

Female scientists appear to be disadvantaged during the publishing process and receive less credit for their work. Hengel analyzed a body of scien-

60 *Lindenlaub/Prummer*, 2021.
61 *Azoulay/Ganguli/Zivin Graff*, 2017.
62 *Mahroum*, 2000.
63 *King/Bergstrom/Correll/Jacquet/West*, 2017.
64 *Wu*, 2018.
65 *Boring*, 2017.

tific articles and established that, conditional on the quality of the paper, female-authored papers are held to a higher standard.[66] Focusing on readability, she found that manuscripts written by female authors are more readable at the time of submission, but nevertheless spend about three to six months longer in the review process than manuscripts written by males. Findings of Sarsons reinforce these results.[67] She found that women receive less credit for co-authored papers than their male colleagues as measured by subsequent tenure decisions. Finally, Rose and Georg showed that women in economics are acknowledged less often on other person's research papers for informal collaboration.[68] It could be that men do not approach women for feedback while conducting research, but the mechanism is far from clear.

Moreover, female researchers appear to carry a higher load of non-research-related tasks; for example, chairing a committee.[69] This is not due to higher personal altruism or a specific taste for these tasks, but rather due to gender stereotypical expectations: Women are more likely to be asked to volunteer and accept such requests. In addition, gender quotas, that in some cases have to be fulfilled, play an important role in increasing the administrative burden of female scientists.

Just like the inventor and entrepreneurship literature summarized above, studies analyzing the success of female scientists highlight the importance of role models. The availability (or lack) of role models and mentors has been shown to be particularly relevant in explaining the leaky pipeline. Gaulé and Piacentini, for instance, report that chemistry Ph.D. students with advisors of the same gender tend to be more productive during and after graduate school and are less likely to leave academia. [70] Studying the likelihood of enrolling for STEM degrees, Canaan and Mouganie showed that the benefits from same-gender mentor-mentee relationships are even more pronounced for high-performing females. [71]

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In developed countries, there have been no institutionalized restrictions for female labor market participation for decades. Nevertheless, the gender gap is still a concern. We started this chapter with the notion that a gender

66 *Hengel*, 2017.
67 *Sarsons*, 2017.
68 *Rose/Georg*, 2018.
69 *Babcock/Recalde/Vesterlund/Weingart*, 2017.
70 *Gaulé/Piacentini*, 2018.
71 *Canaan/Mouganie*, 2021.

gap is not only an issue of social fairness but has direct negative implications for individual productivity and, consequently, for economic growth. The literature summarized above, as well as our own findings, stress that it is not only possible to fight the gender gap, but that doing so is worthwhile.

If we want to have more female inventors, entrepreneurs and scientists, we should support girls from an early age. Since children are in the process of learning about how society works, they tend to be less sensitive to social roles and stereotypes. For instance, boys and girls tend to be equally competitive.[72] Additionally, role models in schools or at home seem to be beneficial. Having an inventor in the family increases the likelihood of becoming an inventor later on.[73] Teachers at school, who are not stereotypically biased, can empower female students to choose mathematics-intense tracks.[74] At later stages, policymakers should introduce carefully designed policies that support gender equality on the labor market and ensure that there are no hidden barriers, such as a lack of accessible childcare.

The role of the individual in fighting the gender gap is often underestimated. At the individual level, it is particularly important to be aware of the problem and one's own biases. Even if, nowadays, only a few people sincerely believe in a superiority of one sex over the other, each of us can unconsciously contribute to the problem. A good start to learning more about how biased we are is to take an Implicit Association Test (available free online). A better knowledge of one's own biases can help to assess the performance of others objectively and independently of gender. Taken together, our biases form prejudices and stereotypes that sometimes are entrenched in social norms. Social norms are slow and difficult to change. Yet, the current situation is not the only possible order of things. We can observe the opposite in matrilineal societies. There, gender stereotypical behavior diminishes or even reverses completely.[75]

72 *Dreber/Von Essen/Ranehill*, 2011.
73 *Bell/Chetty/Jaravel/Petkova/Van Reenen*, 2019.
74 *Lavy/Sand*, 2018.
75 *Andersen/Bulte/Gneezy/List*, 2008; *Gneezy/Leonard/List*, 2009; *Gong/Yang*, 2012.

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Selected Publications:

Hoisl, Karin, and Myriam Mariani. (2017). It's a Man's Job - Income and the Gender Gap in Industrial Research. *Management Science*, *63*(3), 766–790.

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ABOUT THE INSTITUTE

The Max Planck Institute for Innovation and Competition
The Max Planck Institute for Innovation and Competition is committed to fundamental legal and economic research on processes of innovation and competition and their regulation. The research focuses on the incentives, determinants and implications of innovation. The Institute informs and guides legal and economic discourse on an impartial basis. As an independent research institution, it provides evidence-based research results to academia, policymakers, the private sector, and the general public.

Innovation and entrepreneurship are important sources for the growth of modern economic systems and the enhancement of the prosperity and quality of life of their citizens. However, they can entail high economic and social costs and may cause major disruptions at the individual and societal level. A profound scientific understanding of the causal relationships between the determinants and outcomes of innovation and entrepreneurship processes is necessary to successfully carry out such tasks. The Department of Innovation and Entrepreneurship Research engages in research to explore and analyze these relationships from an economics perspective and contributes to the innovation discourse with other disciplines in close cooperation with the legal department of the institute.

Disparities and inequalities crucially affect who gets the opportunity to be innovative. Research on how society and the economy can promote and support talent regardless of gender, and which consequences arise when not doing so, add important insights to the department's scientific agenda.

Paradigmatic Change in Gendered Labor Market Policies in Turkey

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ABSTRACT
This article examines the question of how gender-related labor policy in Turkey has changed during the AKP government since the early 2000s. The focus is primarily on understanding the changing direction of public policies and institutional amendments in Turkey under the AKP government from 2002 to 2017. The findings reveal a paradigmatic change in the labor policies targeted at women. New policies are characterized by protecting and prioritizing the family, while introducing precarious flexible female labor to the market. The research contributes to the literature by providing a link between policy studies and gender research.

INTRODUCTION

Gender is a crucial policy area for understanding changes to state-society relationships. Governments actively promote policies to regulate women's relationships with public and private spheres of life. Traditional liberal political theories separate public and private realms of social life and argue that public space includes the rational and political part of the social life, while private space is associated with personal and intimate matters.[1] However, feminist scholars argue against the strict distinction between these two spheres of social life by showing that they are interrelated. On the one hand, labor market policies which provide incentives for women to participate in the public space can strengthen their position in the private space.[2] On the other hand, care policies designate the responsibilities of women in

1 *Okin*, 1998.
2 *Fraser/Gordon*, 1994.

the family, or the private space, while directly affecting their labor market participation.[3]

The gendered structure and the interrelatedness of public and the private spaces led scholars to establish a link between state regulation and gendered beliefs and norms.[4] It is crucial to analyze the ideational frameworks of policies influencing women's relationships with public and private spheres of life. This paper is influenced by this feminist literature and focuses on the changes to policies and institutions targeted at women at the intersection of the labor market and social care.[5] It takes a closer look at Turkey in order to provide a comparative understanding of changes to gender policy in different social contexts.

In terms of policy change, new public policies and programs with "women" in the title have proliferated in Turkey since the beginning of 2000s, when the ruling Justice and Development Party (AKP) came to power. During this era, the policy developments associated with women have covered several areas of gender, such as sexual reproduction, violence against women, labor market integration of women, and care responsibilities. Gender has been an active policy area, encompassing regulations and institutional restructurings. Active regulation of the government's policies targeting women makes Turkey a suitable case for investigating the direction and the ideational frameworks of change in policies.

The AKP has implemented various laws and policies to regulate both women's engagement with the labor market and women's position in the family. In terms of the labor market, when the AKP first came to power at the start of the new millennium, it implemented institutional amendments to ensure status equality and equal opportunities for women and men in the labor market. These amendments included incentives to increase women's participation in the labor market and legislative changes granting equal labor market status to women and men. Employer incentives for women's employment, active labor market policies and women's entrepreneurship were the major policy instruments used. Women's organizations and Turkey's accession process to the European Union (EU) were the main drivers behind the government amending its gender equality legislation to ensure higher participation of women in the labor market.[6] However, these amendments were far from being substantive since they

3 *Sainsbury*, 1999.
4 *Lewis*, 2001; *Orloff*, 1993.
5 *Orloff*, 2002.
6 *Muftuler-Bac*, 2012.

represent an understanding of gender equality with reference to status equality and equality of opportunities. The policies aimed to amend the inequality rooted in the clauses of laws and legal scripts, and ensure the equal treatment of women and men in the labor market. Therefore, they did not have a significant structural impact on ensuring gender equality in the labor market.

In the second decade of 2000s, the new line of policies became increasingly market-oriented and family-centered when compared to the previous period. The objectives of the policies were to increase the commodification and flexibility of women and mothers, while at the same time prioritizing their family duties. Even though active labor market policies and incentives for women's employment and entrepreneurship were still used, flexibility and familialism became prominent policy targets. In that sense, the beginning of 2010s represents a critical juncture in policies. Neoliberal and familialist policies became significant from this date, while policies targeting gender equality were put aside.

As authoritarianism has increased over time, policies have become less equality-oriented,[7] and become more market-oriented and family-centered.[8] This shift has had an impact on women's positioning in the sphere of political economy. It should be noted that there are still policies, regulations and institutions which are geared towards status equality and equal opportunities. However, the dominant idea that influences the public agenda and public action has changed. These developments in the AKP era make Turkey an interesting case for examining policy change at the intersection of gender and employment.

This research project looks at a range of topics as part of its analysis of developments in the interaction between gender and the labor market, including processes for policy-making and shaping institutions, as well as the major players in the public and private sectors who influence these processes. However, this chapter limits its scope to the main question of: "How have gender related labor market policies changed in the AKP era?" The research question requires an investigation of policy papers in the gendered labor policy area. The doctoral dissertation project draws majorly on qualitative content analysis of public policy papers and agenda papers. However, this short chapter only presents the brief outlook of the literature on policy change and illustrates the preliminary findings of qualitative content analysis.

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7 *Kaya*, 2015.
8 *Akkan*, 2018.

By describing the changes in policies over time, the focus is on government regulations and the underlying characteristics of these policies and institutional amendments. The analysis identifies key public stakeholders and examines policy papers referring to gendered labor market policies and agendas. The research contributes to the discussion on changing policy paradigms of gender in case of labor, since the gender reform in Turkey reveals a deep-seated shift in policies and institutions.

LITERATURE ON POLICY CHANGE: PETER HALL AND PARADIGMATIC POLICY CHANGE

Intellectual frameworks are key domains to understanding a societal transformation. In any policy domain, conceptualization of a policy problem is affected by the ideas of the policymaker, and their perception of current contexts and interests. In the existing political science literature, the main factors used to investigate transformation periods are interests and institutions. However, starting from the cultural shift in the 1980s, an increasing number of scholars have studied the central role that ideas play in policymaking procedures.[9] These studies show the importance of investigating the ideational frameworks which influence policymaking procedures in order to understand how policies change over a certain period of time.

Peter Hall uses the word "paradigm" in his seminal article[10] as an intellectual framework that makes research possible. The use of "paradigm" is both episodic and periodic in meaning, which reflects distinct periods with different characterizations. Hall's definition of "policy paradigm" refers to an interpretive framework of ideas and standards "*that specifies not only the goals of policy and the kind of instruments that can be used to attain them, but also the very nature of the problems they are meant to be addressing*".[11] Similar to Thomas Kuhn,[12] Hall's framing of paradigms is episodic and process oriented. A policy paradigm reflects a set of coherent policy ideas and policy measures to concretize these ideas.[13] Paradigmatic shifts in intellectual frameworks and the way policies represent certain frame-

9 *Skocpol*, 1985; *Baumgartner*, 2013; *Hall*, 1993; *Blyth*, 2003; *Beland*, 2009; *Beland/Cox*, 2011.

10 *Hall*, 1993.

11 *Hall*, 1993.

12 *Kuhn*, The Structure of Scientific Revolutions, 4th Edition, Chicago 2012.

13 *Hogan/Howlett*, Policy Paradigms in Theory and Practice: Discourses, Ideas and Anomalies in Public Policy Dynamics, Houndsmills 2015.

works for forming ideas are vital for explaining new policies and institutional components.

Hall conceptualizes policymaking as a process that involves three central variables: overarching goals, policy instruments and settings/calibration of these instruments.[14] Third order change (or paradigmatic change) simultaneously transforms all three components of policy, since this involves a change to the hierarchy of goals behind a policy. In the case of paradigmatic change, the change is radical because the core policy idea behind a policy realm changes and this affects the policy instruments and policy settings. Overarching goals that guide policy in a particular field, or paradigms in his interpretation, are key to understanding policy change and distinguishing between periods. In such a profound change, the authority of actors over policy also changes and there are positional/hegemonic changes of competing arguments within a broader institutional framework over time.[15] In that sense, paradigmatic change is revealing the adjustment in power of actors over a policy sphere, in which new powerful actors define the recent paradigmatic framework.

The next section argues that this paradigmatic change is evident in the transformation of policies. It is possible to periodize two distinct eras of the AKP's gendered labor policies, and categorize policies into three different groups, namely equality-oriented, conservative family-oriented and neoliberal. Since 2012, there has been a paradigm shift which has seen the dominant ideas that influence gendered labor market policies and institutions changing, distancing from gender equality principle and becoming more market-oriented and family-oriented.

The chapter focuses on the descriptive nature of policy change. However, it is crucial to acknowledge that the main driver of this policy change is the changing authority of competing actors and their ideas. New actors —with different ideas on ideal gender relations—become influential in the policymaking field and influence the change in policies. For example, a new government-organized NGO was established in 2013, which became influential in policymaking processes following their new definition of ideal gender relationships. However, this is beyond the limits of this chapter.

14 *Hall*, 1993, p. 278.
15 *Hall*, 1993, p. 280.

GENDER POLICY CHANGE IN TURKEY IN THE AKP ERA: BUNDLING LABOR MARKET POLICIES

Background

Historically, the family has always been an important pillar of the Turkish welfare system.[16] The Republic of Turkey was founded in 1923 and promoted women's rights as part of the process of nation-building and modernization.[17] The Republican era is defined as a "state feminist era" by scholars, in which the reforms aimed at expanding the role of women in public were primarily imposed top-down from the state authority.[18] Even though the state played the prominent role in advancing the status of women in the public sphere, the women's movement was also a very significant force from the very beginning of the Republic, and women activists played a key role in achieving fundamental rights—even in the Ottoman era.[19]

In the context of global capitalism, the Turkish welfare state underwent a structural transformation in the 1980s. The military coup in 1980, and the new constitution that came into effect after the coup, led to the dominance of a neoliberal agenda in economic and social domains.[20] During this period, social policy in Turkey was shaped by the emergence of market-fundamentalism.[21] Since the 1980s, the share of women holding or seeking jobs in Turkey has been low compared to other OECD countries, and even compared to certain Middle Eastern countries, according to the World Bank Report in 2009. There are various supply and demand side factors behind this trend. However, the inability of policies to absorb female labor flow from agricultural sector to service and industry sector due to the de-ruralization is pointed out as the main reason explaining the low levels of women's labor market participation from the 1980s.[22] The comparatively low participation rate of women in the labor force has perpetuated women's position in the private boundaries of the household and limited their presence in the public sphere.

16 *Bugra/Keyder*, 2006.
17 *Zihnioglu*, 2003.
18 *Tekeli*, 1986; *White*, 2003.
19 *Tekeli*, 2010.
20 *Boratav/Ozugurlu*, 2006.
21 *Bugra/Keyder*, 2006.
22 Bugra/Yakut-Cakar, 2010.

After the 1980s, the influence of international organizations became significant in the social policy environment.[23] When the AKP came to power in 2002, the party had a pro-European Union agenda. In parallel to the positive developments in the negotiations over Turkey's EU membership, the government took steps to harmonize its laws with the EU. Thus, the EU process was a positive step towards implementing reforms that seek gender equality.[24] Previous commitments to international organizations (such as the Convention on the Elimination of All Forms of Discrimination Against Women, *CEDAW*) and the influence of women's organizations were also effective in implementing equality-oriented policies. Turkey's aspirations for EU membership influenced many reforms targeting democratization[25] and gender equality. However, the attempts were far from sufficient to substantially improve gender equality or to challenge traditional gender roles in Turkish society.[26]

Policy analysis

The policy analysis starts in 2002, when the AKP first came into government, and ends in 2017, when Turkey adopted a new presidential system following the referendum on 16 April 2017. Starting from the second decade of 2000s, policies became even more market-oriented, as well as family-centered. However, this turning point does not reflect a sharp divide between two distinct periods. Instead, it is a meaningful reference point for making a distinction between policy paradigms.

Equality-oriented policies are policies and practices that support women's labor market participation and enhance gender equality in the labor market. However, equality in the labor market could refer to status equality, equality of opportunities or substantive equality, which challenge traditional gender roles and use gender mainstreaming as a strategy to continuously question the gendered implications of policies.[27] The policies that the AKP implemented at the start of the 2000s were focused on providing status equality and equality of opportunities between women and men in the labor market. The amendments defined women as equal to men in legal texts, and they promoted policies to ensure equal opportunities in the labor market. It should be noted that policies targeting equality of opportunities among sexes in the labor market do not focus on the policy outcomes. Their aim is to provide the same conditions and opportunities.

23 *Kilic*, 2008.
24 *Cosar/Ozkan-Keresteciogl*u, 2017.
25 *Onis*, 2013.
26 *Kilic*, 2008; *Dedeoglu*, 2012.
27 *Verloo/Lombardo*, 2007.

However, if the inequalities are deeply rooted and structural, then giving the same conditions and opportunities to men and women could end up ignoring the differences and not eliminating gender inequalities.

At the start of the 2000s, the party made several amendments to the constitution, labor law and civil law.[28] The aim of these amendments was to implement gender equality as status equality among citizens and to ensure equal opportunities for both women and men in the labor market. For example, in 2002, amendments to the civil law removed the notion of men as "breadwinners" and introduced the "common sharing of goods, which are acquired during marriage". However, as Elveren[29] argued, these provisions, which were designed to equalize the status of husbands and wives, were not supported by a social insurance system which could provide social assistance and compensate women for their unpaid domestic labor. In 2003, amendments to the labor law and constitution granted equal status to women and men in the labor market. Similarly, in 2004, the Law on Equality in Public Employee Recruitment was enacted to ensure equal opportunities for women and men in public employment recruitment.

The government established new institutions in line with gender equality targets, such as The Ministry of Women and Family Affairs, and The National Women Employment Monitoring and Coordination Board. In the first decade of the 2000s, the Directorate General on the Status of Women (which was originally established in 1990), headed by the Minister of Women and Family Affairs, was established. The Directorate worked on gender issues with the participation of representatives from various ministries, feminist academics and independent NGOs. Similarly, The Parliamentary Committee on Equality of Opportunity for Women and Men produced important commission reports on issues such as women's employment, gender equality at work, and mobbing in the workplace between 2009 and 2013. These institutions were mandatory for entry to the EU and harmonization with EU laws. Since the objective was to achieve status equality, these amendments had a very limited direct impact on removing inequalities in the labor market.

Women's integration into the labor market was one of the government's strategic goals because it recognized that the government could not

28 Constitution Article 10, inclusion of "Men and women have equal rights. The state is obliged to provide this equality" in 2004. Labor Law No. 4857, inclusion of "equal treatment to men and women" in 22 May 2003; amendments in Civil Law No. 4721. Turkey made several legislative changes and regulations, in the framework of harmonization with the EU acquis and the Copenhagen Criteria.

29 *Elveren*, 2013.

achieve high growth unless it integrated more women into the economy.[30] Official documents[31] state that one of the targets of the government is to integrate women more into the paid economy. This is underscored by development plans[32] and parliamentary reports.[33] Women's entrepreneurship was one of the main measures introduced by the government to achieve this goal. The Turkish Employment Agency (ISKUR) and The Small and Medium Enterprises Development Organization (KOSGEB) provided financial support and training in order to increase women's entrepreneurial activities. Similarly, active labor market programs are initiated, which include vocational training courses, job-trainings and public work programs, to prevent long term unemployment. However, these measures were far from being sufficient to increase formal employment of women and provide sustainable and secure jobs. The current policy solution of the government has evolved to a mix of non-contractual, flexible employment practices and familial cash assistance.[34] Although increasing women's employment remains an important target in strategical documents, such as development plans, it is no longer prioritized. Also, the formulation of causality behind this target has changed. In the first decade, this target was seen crucial to achieve better economic outcomes and to improve human capacity, while later it is demonstrated as a target to have stronger families (e.g. Women's Empowerment Strategy and Action Plan 2018-2023).

In 2011, with the introduction of Omnibus Bill No 6111, the government introduced several types of flexible employment options, specific to women and mothers. Following an amendment to Turkey's labor law in 2016, the government started regulating the establishment of private employment agencies to popularize temporary casual employment and flexible employment opportunities. The private employment agencies played a key role in the institutionalization of recruitment and termination practices. This also positioned women as low-cost, part-time labor in the labor market and unpaid full-time labor in the household. The amendments made to Law No 6663 in 2016 introduced special part-time work options

30 President Erdogan: "We are going through a period that we need high growth rates. Women's participation in the workforce is the most important criteria, to achieve the growth we need" (10 Oct 2015).

31 "Political Vision of Justice and Development Party 2023: Politics, Society and the World" www.akparti.org.tr/english/akparti/2023-political-vision.

32 *Turkish Grand National Assembly*, 2006.

33 *Committee on Equality of Opportunity for Women and Men*, 2013.

34 *Bugra*, 2020, p. 453.

for working mothers. Considering the structural characteristics of the Turkish labor market, such as long working hours, high levels of unemployment and informal employment,[35] more flexibility for women in the labor market increases their precarious situation[36] and perpetuates their primary caregiver role in the family.

Employment is no longer the first priority of these policies, having been overshadowed by policies related to the family. Conservative policies and discourses became significant in the second decade of the 2000s. According to data provided by the General Directorate of Social Assistance,[37] the distribution of cash for home-care benefits (number of persons benefiting from home care assistance by years) is increasing annually. The number of people benefiting from cash for homecare when these programs were first initiated in 2007 was 30,638; however, this number increased more than 15-fold to 499,737 by 2017. The total amount of money allocated to cash for homecare by the Ministry was less than 1 billion Turkish Lira[38] before 2010. However, since 2010, the amount allocated has gradually increased from 2.2 billion Lira in 2011 to 6.5 billion Lira in 2018. Since the majority of caregivers are women, and since cash for home-care is paid to relatives according to the law, the growing amount of money paid to home caregivers could be seen as perpetuating the traditional caregiving role of women. It is also notable that the government prioritized social assistance programs as a policy solution for issues that could also be addressed with public social service programs.[39]

In the second decade of the 2000s, the government introduced market-oriented policies, as well as pronatalist and maternalist policies. In 2011, the abolishment of the Ministry of Women and Family Affairs and its replacement with the Ministry of Family and Social Policies meant that the word "women" was no longer in the name of the ministry that is in charge of making policies for women. In 2012, family counseling centers were established to prevent divorces and strengthen families. In 2015, the Law on the Protection of Family and Dynamic Population was introduced, which aims to increase fertility as a means of protecting the family and the population but endangers women's participation in social and economic life. In 2013, ISKUR initiated public work programs and vocational training

35 *Saydam*, 2017.
36 *Ermis-Mert*, 2018.
37 https://www.ailevecalisma.gov.tr/media/5428/buelten-nisan2019.pdf.
38 In 2009, GDP per capita in Turkey was 9,036.27 US Dollars and 1 USD was approx. 1.5 Turkish Lira.
39 *Yilmaz*, 2018, p. 111.

which reinforce the gendered division of labor and made it more difficult for women to transition from training to employment than men.[40] Beyond these developments, ever increasing conservatism and the stronger emphasis on motherhood were not limited to just policies. The official discourse of the government defines the role of the women primarily in the domain of family with cultural and religious references.[41]

It should also be mentioned that the ministry is not using gender equality as a goal in its recent publications. Abandoning "gender equality" in the policy papers signals a shift in the dominant public vision on ideal gender relations. Policy documents on ensuring and advocating gender equality are the ones that are published in the 2000s and the beginning of 2010s (e.g., National Action Plan for Gender Equality 2008-2013 published by the General Directorate on the Status of Women in 2008; and the Commission Report for Increasing Women's Employment and Solution Proposals prepared by the Parliamentary Committee on Equality of Opportunity for Women and Men in 2013). However, in the recently published documents, the concept of gender equality is not used as a concept and a desirable goal (e.g., Women's Empowerment Strategy and Action Plan 2018-2023 published by the Ministry of Family and Social Policy, in 2018).

CONCLUSION

This article puts forward that there has been a paradigmatic shift in gendered labor market policies during the AKP period. This shift can be seen in three spheres: policy priorities, policy instruments and institutional settings. In the first decade of the 2000s, policy priorities included granting women equal status to men in the labor market and equality of opportunities to increase women's participation in the labor market. To achieve these targets, the government made legislative changes and introduced incentives to encourage women's employment and entrepreneurship. The government established new institutions to help achieve these targets, such as the Parliamentary Committee on Equality of Opportunity for Women and Men, and The General Directorate on the Status of Women.

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40 *Goksen/Olcay/Alniacik/Deniz*, 2015, p. 78.

41 President Erdogan rejected gender equality in 2014 and claimed that motherhood must be women's priority (2016): "Women are not equal to men." (November 24, 2014), link: https://www.theguardian.com/world/2014/nov/24/turkeys-president-recep-tayyip-erdogan-women-not-equal-men ; "A woman who rejects motherhood, however successful her working life is deficient and incomplete." (2016).

However, when we scrutinize the changes in policies and institutions, there is a remarkable shift in the second decade of the 2000s. As Peter Hall states: "*the overarching goals that guide policy*" have changed. Protecting and prioritizing the family, while providing flexible female labor to the market, characterize new policies. Accordingly, the government now gives preference to new policy tools which reflect these priorities, such as cash for home-care schemes and precarious, flexible employment opportunities. The institutional framework of gender policies has significantly changed and some institutions, such as parliamentary committees and boards working on women's employment and gender equality, have been decommissioned or stripped of their power. The most prominent example is replacing The Ministry of Women and Family Affairs with The Ministry of Family and Social Policies, thus removing the word "women" from the name of the ministry. Furthermore, the institutions that were established to improve women's labor market status (such as the Parliamentary Committee on Equality of Opportunity for Women and Men) have been dismantled since 2012.

The brief analysis reveals a paradigmatic shift in labor market policies targeted at women by exemplifying the recent two decades of Turkey under the AKP rule. It also contributes to the literature by providing a link between policy studies and gender research. However, the scope of this chapter is limited to descriptive changes in policies and policy related institutions. The reasons behind this change would be addressed in future research.

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In 2019, she was a visiting pre-doctoral fellow at Northwestern University, in Chicago. Prior to her doctoral studies, she received a master's degree in Social Policy and a bachelor's degree in Economics. Her research topics are political economy, gender, labor, care, social policy and qualitative research methods. Recently, she published an article on "Rescaling Social Care Services: The Case of District Municipalities in Istanbul" in the Journal of International Social Work.

ABOUT THE INSTITUTE

The International Max Planck Research School on the Social and Political Constitution of the Economy (IMPRS-SPCE), Cologne, Germany.
The IMPRS-SPCE doctoral program is offered jointly by the Max Planck Institute for the Study of Societies and the Cologne Center for Comparative Politics at the University of Cologne. It is an interdisciplinary program investigating the complex links between economics, politics and society. The program develops new approaches in economic sociology, comparative and international political economy, and organizational studies.

This doctoral research project focuses on changes to the policy-making processes related to gender, as well as changes to the gendered labor market and care policies under the conservative Justice and Development Party since 2000. The project envisions policymaking as a set of complex processes, in which multiple actors interact. It examines how different actors, such as public institutions, civil society organizations, experts and international organizations, interact in gender policy-making processes with their ideas. The research uses content analysis to understand the changing nature of

policies. Furthermore, the research examines the mechanisms that influence policy change by conducting process tracing.

Exploring social, political and economic foundations of gender policies aligns well with the research agenda of the institute. The focus of this doctoral project lies at the nexus of gender and political economy. Within the historically specific social and political context of Turkey, the research examines the influence of governmental and non-governmental actors on policymaking processes. Gender is an important policy realm for understanding changes in state-society relations. The research sheds light on the transformation in societal relations by providing an understanding of gendered policy changes in the paid and unpaid realms of labor.

Gender Inequality and Emotions: Hostility against Women in Contemporary Turkey

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ABSTRACT
How does gender equality influence the prevalence of hostile feelings among men towards women? Under which conditions are gender hierarchies in a society likely to provoke hostility and violence against women? By presenting a case study on vigilante violence in contemporary Turkey, this sociological research investigates the social and political foundations of hostile feelings encountered by women in Turkey. It shows that aggravated hostility is directed at particular groups of women and vigilante violence can be explained by a backlash thesis.

My research examines the detrimental effects of gender inequality on women by drawing on a case study on vigilantism against women in contemporary Turkey. Over the last few years, vigilante violence against women has been on the rise again in the country. Between September 2016 and July 2018, nineteen cases of vigilante violence against women were documented, where male vigilantes meted out violent punishments to women who failed to adhere to so-called moral norms in public places. I focus on vigilantism in Turkey to investigate the links between gender inequality and the prevalence of hostile feelings towards women. In particular, my research aims at identifying those specific forms of gender inequality in which women are more likely to encounter hostile feelings, aggression, and violence from men. Under which conditions does gender inequality generate hostile feelings, such as anger and aggression, towards women, causing serious damage? How do gender hierarchies aggravate women's historically constituted violability? And what role do hostile feelings play in the worsening of gender inequalities?

Such a research agenda is guided by sociological and historical thinking. What is not always immediately evident is the significance of the historical thinking about equality—that is, the idea that gender inequality is historically constituted and produced through various sites of power. My research, instead of uncritically taking for granted what it means to be unequal or equal, adopts a historical approach towards the notion of gender

inequality, demonstrating an awareness of the fact that gender inequality displays different patterns and forms in different geographical settings that have come into being over time. For instance, during the 19th century and the first half of the 20th century, gender inequality was understood primarily in terms of women's exclusion from public and political life as citizens. In line with that, throughout the 20th century, the sweeping changes in the gender system took place increasing women's participation in different spheres of public life as citizens, workers and students—just as men did. In the following period, women across the world gained the right to vote and the right to education. Some of these women swelled the ranks of the working poor, and others broke the glass ceiling of the labor market, taking up managerial positions, thanks to their success in higher education.

Despite this progress, inequalities between men and women persisted and were also accompanied by new forms of inequalities among women themselves. The trend toward better gender equality has stalled since the early 1990s, at least in advanced economies, with the movement of women into male dominated fields of work slowing down and women's participation in the paid labor market leveling off. For feminist scholars, this was largely because men have not comparably shifted into female-dominated fields of work, nor taken responsibility for household labor and childcare.[1] This has resulted in a novel understanding of gender equality evolving—one that demands men to be more involved in the private sphere and to take up more family responsibilities, including childcare and housechores with the aim of creating a more equal gender division of labor. This novel understanding of gender equality, which was accepted not only in small feminist circles but also broadly in the mainstream policy-making community, was based on the idea that increasing participation of women in the public sphere depends on increasing involvement of men in the private spere. In a sense, all the social and political changes throughout the 20th century forced the hands of policymakers to acknowledge previously ignored dimensions of gender inequality, reshaping the meaning of the term itself to fit the new social and historical context.

In social science literature, gender inequality is often analyzed by employing indicators such as women's employment status, disposable income, participation in decision-making processes, and women's mobility and health. Less attention is paid to the implications of gender inequality operating in the field of emotions. However, as studies have shown, emotions play an important role in making and unmaking social and political

1 *England*, 2010.

hierarchies.[2] By drawing on the case of vigilantism against women, in which self-appointed vigilantes mete out punishments to those women whom they perceive to have transgressed the moral codes in Turkey, my research fleshes out the implications of gender hierarchies operating in the field of emotions. In particular, it carefully teases out the links between hostile feelings and violence women face and specific cases of gender inequality.

The tendency to neglect the importance of historicizing, which is often the case in the discussion of gender equality, becomes all the more evident when thinking about emotions. In common sense accounts, emotions are often regarded as ahistorical phenomena, static across time and space; their meaning and expression not open to change. Common sense thinking about emotions also tends to erase the social basis of emotions by over-emphasizing the view that emotions are what individuals have or feel depending on their psychological state. Recognizing the social basis of emotions is critical for my research on the hostile feelings women encounter in societies ridden by gender inequalities. My research project is based on the assumption that there is a cultural logic to emotions, as well as a historical and a social context, which allows us to see how emotions vary over time and are open to change. Emotions, of course, are associated with individual psychologies in as much as they are related to the mental and physical state of a person. Nevertheless, emotions are also related to history and society. Societies develop and organize their emotional practices with institutions such as the family, law, religion and the military; thus, setting norms and rules for feelings and their expressions, as well as priming individuals to feel certain ways in given situations towards certain things and people.

When seen from this perspective, it becomes possible to realize that hostility, like other emotions, is not only linked to individual psychologies, but is also inseparably connected to the broader dynamics of society and influenced by institutions such as the family, law, religion and the military that set norms and rules for the expression of hostility. As such, hostility towards women cannot be reduced to an individual attitudinal problem, but becomes associated with the larger organization of the society as well as with the hierarchies prompted by gender inequality.

2 *Barbalet*, 2001; *Sayer*, 2005; *Frevert*, 2020.

HOSTILITY, MISOGYNY AND GENDER INEQUALITY

Hostility as a feeling suggests an animosity which often manifests itself in outward behaviors such as attacks or aggression which harm the victims of hostility. It encompasses a cluster of emotions such as resentment, anger and hatred. When feelings of hostility dictate the terms of human relations, social interactions between individuals or groups often take on aggressive or antagonistic forms, with each side coming to see the other as an enemy or an opponent. However, a generalized understanding of hostile feelings falls short of identifying the distinctly gendered dimensions of hostility that the cases of vigilantism against women in Turkey manifest.

Vigilantism against women in Turkey, as my research demonstrates, compels us to acknowledge that hostile feelings might have a gendered, if not distinctly sexist, component under certain conditions. A violent practice often carried out by individual men or small groups of men, vigilantism in Turkey has a gender dimension with the perpetrators being men and the survivors women. This gendered structure of vigilante attacks is a phenomenon that alerts us to the combined operations of sexism and hostility.

I use the term misogyny in my research to capture the pronouncedly sexist dimension of hostility that vigilante cases demonstrate. Often used to denote individuals' prejudices, misogyny refers to hostility against women. However, in their accounts of misogyny, feminist scholars, ask us to recognize the social basis of misogyny.[3] Misogyny, these scholars argue, is rooted not in individual psychologies, but in social structures that shape and are shaped by gender hierarchies. Although the laws, rules and regulations put in place by the institutions limit the expression of hostility, they also enable its expression under certain circumstances towards particular groups or individuals. Once we acknowledge the social basis of hostile feelings, we can also see that institutions and the larger society, just like individuals, can also be hostile toward women.

I draw, in particular, on the concept of misogyny that Kate Manne put forth in her book *Down Girl*. Manne defines misogyny as a form of gendered oppression whose defining characteristic is hostility towards women. In this account, misogyny is regarded as a systematic social phenomenon "in which women are liable to encounter hostility due to the enforcement and policing of patriarchal norms and expectations – often, though not ex-

3 *Manne*, 2007.

clusively, insofar as they violate patriarchal law and order".[4] In general, hostility toward those who are perceived as having violated or broken the law comes with the attitudes of retribution, punishment and exclusion. Likewise, in social contexts where male domination reigns, women's perceived violation of gendered norms comes with retributive and punitive feeling towards women. In these contexts, misogyny threatens to harm and punish a woman if she transgresses the moral norms—norms that keep gender inequalities and hierarchies intact. The same logic applies to vigilante violence; male perpetrators in Turkey do not target women across the board, but assault only those who allegedly transgress gendered moral norms.

VIGILANTE VIOLENCE AGAINST WOMEN IN CONTEMPORARY TURKEY

The punishment of women by men for their alleged offences against morality used to be a widespread misogynistic practice in Turkey, and has been historically enabled, to a certain extent, by norms around shame and honor, in which men maintain their honor by controlling women's sexuality. Throughout the early 2000s, however, vigilantism was far less common, and it seemed like the practice had been consigned to the dustbin of history until it resurfaced in Istanbul in 2015, where cafés and art galleries involved in so-called immoral activities, such as serving alcohol during an art exhibition, were threatened by resentful groups of religious, nationalist youths. In the same period, mixed-gender groups consuming alcoholic drinks in public spaces were intimidated by local small business owners. Vigilante incidents that exclusively target women, on the other hand, picked up pace after the democracy vigils in 2016. Instigated by President Erdoğan, the vigils started on the night of July 15, 2016, when a faction of the Turkish military initiated a coup against the ruling Justice and Development Party (AKP). That night, Erdoğan appeared on a live CNNTürk broadcast via the anchorwoman's smartphone on FaceTime and called on the people to go out, violate the curfew, and stop the attempted coup. Held nightly for weeks in urban streets and squares, the vigils often drew thousands of participants. Never before had a government in the history of the Turkish Republic called the masses to the streets to display resistance against a military intervention. Tayyip Erdoğan's call on that night was

4 *Manne*, 2007, p. 19.

met with enthusiasm by AKP supporters, and large masses of men and a small number of women took to the streets to join the vigils. During this period, men easily assumed the role of vigilantes protecting the regime. So it comes as no surprise that the first vigilante attack on a woman for her alleged moral transgression was reported just a few weeks after the vigils ended.

On September 12, 2016, Ayşegül Terzi, a 23-year-old nurse, was violently attacked on a public bus for wearing shorts. The male perpetrator defended himself in court by claiming that Ayşegül Terzi failed to dress modestly (Terzi v. Çakıroğlu 2016). Indeed, in all nineteen cases of vigilante violence documented so far, women have been assaulted for no other reason than wearing shorts, smoking cigarettes, sitting cross-legged in public, engaging public displays of affection, and exercising in parks, because all these behaviors are regarded by men to be a violation of gender norms.

To examine in detail the occurrences of vigilantism against women in Turkey, I drew on a diverse set of sources, including data on vigilante cases provided by women's organizations in Turkey, media reports, court cases, as well as the interviews I carried out in June 2017 and March 2018 with three feminist activists, three lawyers, and ten individual women who do not strictly observe the norms of feminine modesty. Whereas the interviews with the feminist activists and lawyers offered insights into the legal dynamics of vigilantism, by listening to the narratives of women who do not conform to localized norms about feminine modesty, I was able to understand how women navigate a social environment in which women are likely to encounter hostility.

I identified remarkable similarities among cases with respect to the gender of vigilantes as well as the gender of targets, the location of the vigilante attacks, and the justifications used by vigilantes to justify the attacks; however, the violent acts carried out by vigilantes differed, ranging from verbal assaults to brutal physical attacks. In terms of the gender of vigilantes and victims, vigilantes were exclusively male, while victims were women who allegedly violated gendered moral norms in public places. Women whose demeanor, posture, confidence, elocution, dress, and bodily comportment does not comply with a particular set of norms about feminine modesty are the ones who are most likely to be subjected to vigilante violence.

Justifications male vigilantes provide also exhibit remarkable similarities. Justification concerns how perpetrators legitimize their actions to the public, which includes witnesses to the action, the media and state officials. Generally speaking, the justifications perpetrators utilize might range from moral to legal, but often a single desire underlies these diverse justifi-

cations: to reinstate a particular order, whether it be a legal, racialized, gendered, or religious order. In the case of Turkey, the justifications perpetrators used overwhelmingly indicated a desire to reinstate a moral order. In other words, all the vigilante attacks fit into the category of moral vigilantism, where violence or threat of violence is cloaked in an appeal to higher moral orders and religious powers. Vigilante men call upon a moral order, rather than another, such as a legal order, when justifying their attacks. This, of course, is not surprising given that women's outwardly physical acts, including wearing shorts, smoking cigarettes, and sitting cross-legged in public are not classified as a range of behaviors that are illegal or criminal, and thus punishable by the state. Moreover, vigilantism is a criminal act under Turkish law and in those cases that went to court, vigilante men were convicted of assault and received sentences. The legal order, based on the principle of equality, constrains men's efforts to dominate women, whereas the field of morality, as the vigilante cases in Turkey illustrate, enables men to claim and use coercive power over women's bodies.

Acts of vigilantism took place in public spaces in densely populated cities such as Izmir, Antalya, Istanbul, Bursa, and Adana. Indeed, the recent resurgence of vigilante violence against women is limited to large cities; in small towns and rural areas, norms about feminine propriety and modesty have always been strict. This finding is actually surprising given that densely populated cities in Turkey have historically been places where gender norms are lax and where the public presence of the women who do not conform to norms of propriety has been fairly strong. However, the rise of vigilantism against women over the last few years illustrates that women who live comfortably in large cities thanks to relaxed gender norms are at an increasing risk of becoming the victim of vigilantism in today's Turkey. Why has hostility towards the women who do not conform to strict gender norms begun to crop up in those cities where gender norms are already relaxed?

IMPROVED GENDER EQUALITY AND AGGRAVATED HOSTILITY AGAINST WOMEN: A BACKLASH AGAINST WOMEN?

In order to better address this seeming paradox, I began to ask questions about the link between violence against women and gender inequality. I also began to review the assumptions made about the causes of male violence in the social science literature. Male violence against women is conventionally regarded as a sign of women's subordination and it is often attributed to the uncontested operations of gender hierarchies . However, in

Turkey, it was insubordinate women who faced aggravated hostility. This led me to take the backlash hypothesis into consideration as a means of explaining the increasing levels of hostility towards women. In those cases where there is backlash against women, violence against women is provoked not by women's subordination but by women's empowerment. Men might have a strong negative reaction to improvements in gender equality and might resort to physical violence to compensate for their lack of control over women.

Are women really more empowered in Turkey? Can we talk about improvements in gender equality in Turkey? There is already some empirical evidence to suggest that, over the last two decades, gender equality has become more entrenched in legal structures. Since the foundation of the Turkish Republic in 1923, gender equality, has been inscribed in the law and functioned as a pillar of the secular republic. However, the legal framework was full of sexist clauses that acknowledge men as the head of the households or that stipulated different treatment of virgin and non-virgin women in a penal code which was adapted from the Italian penal code. In the early 2000s, the AKP government restructured the legal system, with the adoption of a new Civil Code and Penal Code. Initially, these reforms were carried out as part of Turkey's candidacy for joining the European Union and the government was not really invested in deepening gender equality in the country. However, the feminist movement in Turkey, which is quite strong and militant, seized this moment and exerted mounting pressure on the government through lobbying and activism. Thanks to feminists, what started as a minor legal change that took no account of women's needs has grown into full-blown legislation which has strengthened gender equality in the country.

The new gender equality legislation improved women's bodily rights, including the rights to bodily integrity and bodily security. For example, enforced virginity tests, which scholars defined as a "particularly modern form of institutionalized violence"[5] were banned during this period. The virginity test, vaginal examinations performed on women by doctors, was a common practice that aggravated women's bodily violability. In 2004, a new penal code was introduced. The new penal code outlawed the violation of women's bodies by using the pretext of so-called moral concerns, such as public morality, honor and chastity.[6]

5 *Parla*, 2001, p. 68.
6 *İlkkaracan*, 2007.

These legal changes, together with the increase in women's educational attainment levels and labor force participation rates, unsettled the otherwise secure basis of gender hierarchies in Turkey, thus diminishing men's power over women. These initial gains in gender equality triggered a backlash, where men attempted to regain their lost power; namely, the power to control women's bodies. It is in this context that changes to gender inequality generate an aggravated pattern of hostility towards women. This hostility takes the form of punishment and refuels the patriarchal operations of power. It is often those women with increased autonomy and empowerment who become targets of this aggravated hostility.

My research asks us to pay more attention to the perils of improving gender equality in precarious political regimes. Vigilante attacks broke out in a period when the AKP government, following a failed coup attempt in 2016, further strengthened its grip on power and deepened its authoritarian rule. In this volatile period, women, who had been empowered by the gender reforms of the early 2000s, easily turned into targets of hostility. The AKP government's political efforts to undermine gender equality as well as the rule of law went hand in hand with the intensified workings of power, violence and exclusion. This set the stage for aggravated hostility against empowered women, provoking the eruption of vigilante violence in big cities.

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ABOUT THE INSTITUTE

Max Planck Institute for Human Development, Center for the History of Emotions
The Center for the History of Emotions has a robust research agenda that examines the complex ways in which emotions are integrally bound up with the individual, as well as with social and historical forces. Such an

agenda opens up a new direction for research that explores an underexamined area of the interactions between emotions and social relations of power and domination. Esra Sarioglu's research, by focusing on Turkey, investigates how emotions are integrated into gender hierarchies as a central category of analysis and explores how emotional practices stemming from hostility interacts with gender inequality and violence against women.

Gender Discrimination Survey in the STEM Field: a Case Study of Korean Science High Schools

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ABSTRACT
We conducted an online survey on gender discrimination in the Korean science, technology, engineering, and mathematics (STEM) community. Over 150 respondents voluntarily participated in the survey. The majority of the responses described how women were being discriminated against. Twelve female students reported their experiences in science high schools. These cases included sexual objectification, stereotyping and exclusion.

INTRODUCTION

There was a revivial of Korean online feminism in 2015 when the hashtag movement called "#나는_페미니스트입니다" (#I_am_a_feminist) was initiated. The following year, a series of hashtag movements "#ㅇㅇ계_내_성폭력" (#Sexual_violence_within_XX) exposed incidents from different fields, including literature, sports, art, film, religion, and social activism. As women realized that their experiences were universal, they built solidarities and continued to produce testimonies. In 2017, we initiated an online survey to collect incident reports of gender discrimination in the science, technology, engineering, and mathematics (STEM) community.

We were four graduate students, two women and two men, studying different subjects in the STEM field. Our aim was to record cases of gender discrimination in the STEM field and to raise awareness of the issue. We hoped that the victims would no longer trivialize their experiences or blame themselves, recognize the issue as a structural problem, and gain the courage to share their stories. As the project grew larger and more successful, we handed it over to "페미회로" (Femicircuit), a union of feminists from science and technology-oriented universities in Korea. The initial members remained as advisors.

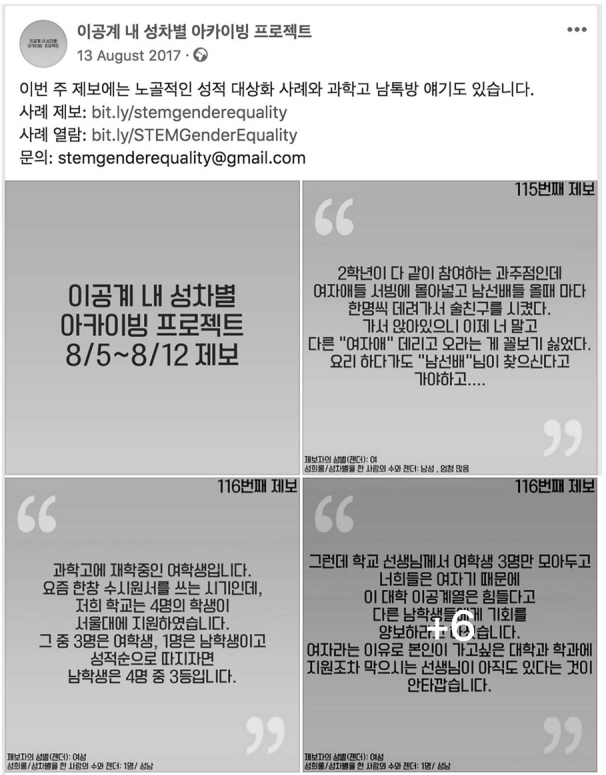
METHOD

We took an online crowdsourced survey called "서양에서 동양인으로서 경험하는 차별 아카이빙" (Archiving the stories of discrimination against Asian people in Western countries)[1] as a reference when designing this survey. Our survey was created using "Google Forms", a free online app. The survey consisted of three parts: an explanation of the project, a consent form, and the questionnaires. The first part introduced the organizers and explained the purpose of our project. Through the consent form, the respondents could elect whether their answers could be published openly online. Furthermore, they were asked if a third party could modify their answers and publish them in other formats (for example, as a novel). In the questionnaires, the participants were asked to provide their gender; the number of perpetrators; the gender of the perpetrators; the time and the place of the incident; and a detailed description of the incident. The questions were open-ended rather than in multiple-choice format. All responses, that the participants agree could be published online, are available at the following link: bit.ly/STEMGenderEquality.

In order to recruit participants, we contacted student groups with an interest in students' rights or feminism. We introduced the project and asked them to distribute the survey link using their platform (e.g. a university's own online platform). We established a database of contact information including student councils and feminist study groups from four universities that specialize in science and technology (Daegu Gyeongbuk Institute of Science and Technology, Korea Advanced Institute of Science and Technology, Pohang University of Science and Technology, Ulsan National Institute of Science and Technology) and feminist groups from universities throughout Korea (31 student clubs from 21 universities).

1 The survey was part of a project called "I am angry!," which was supported by the Federal Ministry of Education and Research of Germany. They collected 294 stories of discrimination against Asians living in "the Western world". The entries are available at: http://iamangry.de/

Figure 1. This is an example of the weekly post where we shared some of the new entries from the previous week.



We managed publicity using our own Facebook page called "이공계 내 성차별 아카이빙 프로젝트" (The archive of gender discrimination in the STEM field) and by collaborating with a podcast called "과학기술정책 읽어주는 남자들" (Science Technology Policy Readers). The Facebook page was the main platform on which we updated our progress and shared news. During the first two months, we regularly posted examples of survey responses (see Figure 1). The hosts of the podcast "Science Technology Policy Readers" were supportive of the project from the brainstorming phase of the project. The podcast released three episodes based on the survey responses and one episode in which two members of our team were interviewed.

RESULTS

From May 2017 to July 2019, 154 responses had been collected. After excluding duplicates and incomplete responses, there were 150 valid responses. Among the valid responses, 138 (92.0%) were from female respondents and 11 (7.3%) were from male respondents. In 144 (96%) cases, women were the victims of discrimination. This illustrates that many women in the STEM field experience gender discrimination.

Figure 2. The distribution of the online survey entries according to the academic level of the victims. The graph includes only the entries with information about the respondents' academic status.

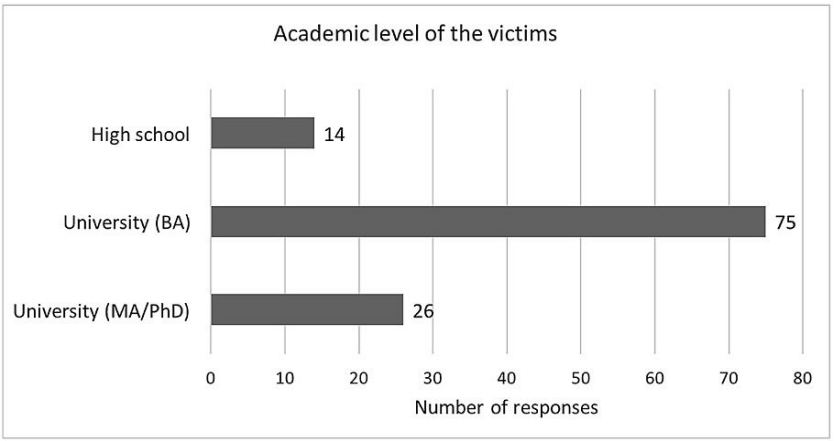


Figure 2 shows the categorization of entries according to the victim's academic status. We were surprised to receive reports from people at a stage as early as high school. In this paper, I will focus on science high schools, from which 12 out of 14 of the high school cases were reported. These 12 cases were reports from female students describing there experiences of sexual objectification, stereotyping and exclusion.

SEXUAL OBJECTIFICATION

Sexual objectification is an act of objectifying women as mere sexual beings. For example, respondent number 10 wrote:

> "When we first came to the school, female students' appearance was rated, including rating who has the best body shape, breasts, and legs… Similarly, I found out that, in their dorms, male students talked about what girls wore and how their breasts looked bigger on some days than others and maybe that's because they wore a padded bra."

Similar experiences of rating female students' faces and bodies were reported in three other responses. Other cases of sexual objectification included secretly taking pictures of female students when they were dancing (response 73), brazenly staring at female students' body parts and talking about them (responses 73, 91). According to responses 74 and 83, some schools responded with stricter dress codes for female students. Nonetheless, "there were always boys who would talk about breast size. (respondent 74)".

STEREOTYPING

Several responses revealed difficulties in facing stereotypes associated with female gender. For instance, respondent 73 wrote:

> "These comments from teachers and classmates were here, there and everywhere. Compared to male students, female students are worse at mathematics, worse at spatial perception, worse at physics, girls can stay up all night studying and memorize biology textbooks by heart but boys can't do that, girls are [inherently] good at English so they are privileged because they can read an English textbook faster (people never acknowledged that being good at English or sleeping less to study also requires hard work and competence)."

It is a common stereotype that women do not perform as well in mathematics, spatial perception and physics. Although there have been multiple scientific studies that have disproven any inherent gender gap in these subjects, the stereotype continues to survive within and beyond the scientific community. Other stereotypes were that: female students "tend to divide into groups and create conflicts (response 73)", "women don't have the physical strength required for engineering (response 101)", "majoring in science at Seoul National University will be difficult" for women (response

116), "it's okay for girls to study less because they can get married (response 129)" and girls are more attentive and refined whereas boys are naturally clumsy (entry 142).

EXCLUSION

Historically, women have been excluded from many opportunities and science education was not an exception. Science high schools in Korea only started accepting female students in 1988.[2] Since then, the number of female students in science high schools has risen to approximately 20%. However, female students still face exclusion. For example, respondent 73 wrote:

> "Since the number of female students is so much smaller, groups are usually made up of one female and three or four male students for group projects. When a female student creates a group chat to ask when to meet, male students just read and do not reply [to messages]. Then they finish the assignment on their own without taking the female student into consideration and hand in the assignment without her name."

The form in which female students were excluded varied. Some serious incidents were perpetrated by male students (responses 73, 96), but more were committed by adults, including parents of male students (responses 74, 129, 135) and a schoolteacher (response 116). The justifications were also different. Some male students justified their actions with the belief that female students "have relatively lower grades and are not strong minded"(response 96). Parents of male students worried that their sons would be distracted from their studies by the presence of females (responses 74, 135). One teacher tried to stop female students from applying for a science major in a highly competitive university, reasoning that it would be too difficult for them (response 116).

DISCUSSION

Although this paper focused on Korean science high schools, a similar pattern of discrimination against women continues throughout their academ-

2 *Yoon*, 2016.

ic careers[3] and extends beyond Korea.[4] Dr Karen Kelsky conducted an online survey called "Sexual Harassment in the Academy: A Crowdsource Survey"[5] which revealed that many incidents took place in the STEM field across the world. Prejudice questioning women's ability to study or conduct science also prevails globally. Although systematic studies have shown that there is no scientific evidence to support these stereotypes,[6] some scientists openly support such claims.[7] Lastly, testimonials from many female scientists have exposed experiences with implicit and explicit exclusion in the STEM field.[8]

Gender discrimination in the Korean STEM community was not discussed openly and individual incidents were treated as personal problems. However, our survey revealed that similar cases have happened across different institutes. Repeated reports prove that the problem is structural rather than personal. We hope that open access to the survey will allow people to see for themselves how prevalent gender discrimination is in the STEM field and lead to discussions that improve the situation.

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3 *Oh*, 2017; *Kim*, 2017.
4 *Hill/Corbett/St Rose*, 2010; *Libarkin*, accessed: 2019.
5 *Kelsky*, accessed: 2019.
6 *Lindberg/Hyde/Petersen/Linn*, 2010; *Fine*, 2010.
7 *Castelvecchi,* 2018.
8 *Margolis/Fisher*, 2015.

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APPENDIX

Here are the translated versions of 12 responses from female Science High School students, originally written in Korean. The translation was edited by Lana Balorda from the University of Tübingen. To prevent losing the implied message, we used brackets to complement the direct translation. Due to change of consent form, entry 10, 73, 74 may not be modified for redistribution by a third party.

Case number: 10
Gender of the subject: female
Number and gender of the offender(s): male community
Date and time: I don't know for sure
Place where the incident occurred: male dormitory
Explanation of the incident:
I graduated from a science high school, which had a high proportion of male students. I heard so many stories when I was attending the science high school, but I will select the ones that wouldn't identify me and my friends.

When we first came to the school, female students' appearance was rated, including rating who has the best body shape, breasts, and legs. I couldn't figure out who made the list because it was kept secret as an act of "loyalty." It was terrible to imagine that people who are friendly to me are evaluating my body behind my back. Similarly, I found out that in their dorms male students talked about what girls wore and how their breasts looked bigger on some days than the others and maybe that's because they wore a padded bra.

When a boy broke up with his girlfriend, he told people about sexual stuff and what the ex-girlfriend did wrong. As a result, the girlfriend went through a lot of hardship. This happened because the boy was a bad person but also since the boys outnumbered the girls so much at the high school so when a false rumor spread, it was difficult for the girl to explain or be aware of all of the rumors. She got a bad reputation.

Case number: 73
Gender of the subject: female
Number and gender of the offender(s): several males
Date and time: 2013–2015
Place where the incident occurred: classroom, dormitory, online etc.
Explanation of the incident:

1. In our high school, there was a greeting event for new students. 15 senior students and 15 junior students would form one team and pick a student from the first year through playing games. The first-year student who got picked had to give some kind of performance to entertain everybody. When the student hesitated, the senior students would decide what they had to perform. For the female students including me, they made us lie on the ground and imitate a mop or imitate a window that is minutely trembling with our bodies. When someone refused, they were blamed for acting like a prude or told that they shouldn't refuse to take part and that they were ruining the atmosphere.
2. There was a Facebook page where people could report incidents anonymously (the page is deleted now). Our school had a much higher male to female ratio. When I went to the cafeteria, library, or classroom while wearing shorts, boys would whisper and stare which was humiliating to me. I reported this on the Facebook page that I wished that boys wouldn't blatantly stare or whisper when girls wear shorts. There were many hateful comments on the post including: "Why are we not allowed to look?", "It's not because we admire you. Don't delude yourself", and "We were insulting you when we were whispering. Don't

worry." Someone also commented that girls didn't come to this school for boys to enjoy looking at them, to which others replied: "We want to look at pretty girls," and "Girls also like looking at handsome guys" and so on.

3. Male students' group chat
   There is a dance club at our high school. Some male students secretly take pictures of female students when they are practicing (pictures of the dancing girls included those taken slyly from below). They would make a separate group chat only including male members and share these photos to entertain themselves. This happened during class hours. There were female teachers and students in the same place and they were proudly sharing pictures that were taken without permission.
   In addition, there was an app developed by a senior student that could access student ID pictures. Male students would have fun taking female students' pictures from the app and editing them onto game characters' bodies, other male student's bodies, and dirty [sexual] pictures.
4. Annual official event actually used to rate female students
   Our school had dormitories. There was an annual meeting between the seniors and new students living in the same dormitory. During this meeting, the senior students would go into the first-year male students' room and ask them to pick three female students they think look the prettiest and would like to date. They would count the votes and broadcast it to the female dormitory, explaining how many votes they got for their body parts (including breasts and legs). They must have thought that they had the right to objectify and evaluate female students.
5. Casual sexist comments: These comments from teachers and classmates were here, there, and everywhere. Compared to male students, female students are worse at math, worse at spatial perception, worse at physics, girls can stay up all night studying and memorize biology text books by heart but boys can't do that, girls are [inherently] good at English so they are privileged because they can read an English text book faster (people never acknowledged that being good at English or sleeping less to study also requires hard work and competence).
   Furthermore, an English teacher seemed to show more concern for female students who are such a small minority and are often excluded. Whenever this happened, students would leave multiple comments in the feedback box that the English teacher favors female students and discriminates against male students.
6. Some teachers and parents said that the school admits fewer female students because they tend to divide into groups and create conflicts and have problems living in dormitories. If I were to use the same logic,

fewer male students should be admitted because physically violent incidents often occur in the male students' dormitory.

7. Since the number of female students is so much smaller, groups are usually made up of one female and three or four male students for group projects. When a female student creates a group chat to ask when to meet, male students just read and do not reply [to messages]. Then they finish the assignment on their own without taking into consideration the female student and hand in the assignment without her name. This was not a one-time thing but occurred often. It was the same for club activities.

All of the above are from one school. The tone of the writing may be a bit emotional as I became agitated. I wouldn't have shared these experiences if it wasn't for this database project. Thank you.

Case number: 74
Gender of the subject: female
Number and gender of the offender(s): several males and females
Date and time: during high school years
Place where the incident occurred: school
Explanation of the incident:
I also attended a science high school. I was once prohibited from joining a private tutoring group because I was a girl. The parents said that they were worried that their sons would be distracted and not be able to concentrate on studying if there was a girl in the group. Also, the school had strict dress codes for female students fearing that the boys would get distracted or sexually aroused. However, there were always boys who would talk about breast size.

Case number: 83
Gender of the subject: female
Number and gender of the offender(s): several males
Date and time: during high school years
Place where the incident occurred: high school
Explanation of the incident:
Our school didn't allow female students to wear shorts. The reason being that boys would make fun of female students' legs (???)

I was the only student in the class preparing for Physics Olympiad [*International Physics Competition for High School students*]. During break times, male students would tell dirty jokes, even when I was there. I was always annoyed and decided to put earphones on and put my head down on the

desk. I overheard them saying "Hey, what if she can hear us?", so they knew that it was inappropriate.

Male senior students messed around by labeling female students with the colors of the rainbow, red being pretty and purple being ugly. When female senior students criticized them, they said they were being [overly] sensitive.

My male classmates played a game where they would name their favorite girl every night. When the exam results were out, they would figure out the position of the female students in the ranking system by sharing their own ranks (this was only possible because girls make up less than 25% of all students).[9]

They would start rumors that a female teacher and a male student were in love. In retrospect, it was a total lie. Sexually offensive rumors were also spread about teachers.

Case number: 91
Gender of the subject: female
Number and gender of the offender(s): male
Date and time: one morning in 2015
Place where the incident occurred: Science High School
Explanation of the incident:
Every morning, we had to go to the cafeteria or the assembly hall for the roll call. Students were mostly in their pajamas. Me and my friend also went in our pajamas. Male students talked behind us trying to guess whether we were wearing bras, talking about breast size, saying they were getting aroused. After that, I couldn't go to the roll call in pajamas again.

Case number: 92
Gender of the subject: female
Number and gender of the offender(s): male community
Date and time: fall (*year not reported*)
Place where the incident occurred: Science High School
Explanation of the incident:
Someone spread a rumor about seeing me and my boyfriend having sex. I had never had sex then. In those days, my boyfriend wanted to have sex

9 After every examination period, students receive a breakdown of the points that they earn for each class, along with their rank in the class. By comparing the ranks they occupied with each other, the boys could figure out which ranks were missing, and therefore belonged to the girls. Knowing the past performance of the girls in the class, the boys could then guess which rank each girl occupied.

and kept demanding sex even though I didn't want to. So I was emotionally hurt. My boyfriend was one year above me and the person who started the rumor was as well. Therefore, there was no way that I could be aware of the rumor nor stop it. This kind of gossip is shared only between the boys. I didn't know until my boyfriend warned me that this rumor was going around and that I should be careful. The school was so small and the rumor spread to my classmates within two days. In that semester, I developed sociophobia and couldn't make eye contact with the male students. I was so distressed by the thought that male students would think about the rumor whenever they saw me. However, I never had a chance to explain and stop the rumor. Even though I didn't do anything wrong…

Case number: 96
Gender of the subject: female
Number and gender of the offender(s): several males
Date and time: during high school years
Place where the incident occurred: within school
Explanation of the incident:
In Science High Schools, there are several times more male students than female students. Female students are ignored when they try to speak and insulted publicly when included in a group for a course project. The reasons behind this behavior are that female students are believed to have relatively lower grades and are not strong minded. Male students would make sexually offensive comments and laugh in front of the victim. On the other hand, whenever there is a female face on the TV, they go crazy. They always make comments about how they look.

Case number: 101
Gender of the subject: female
Number and gender of the offender(s): relatives including men and women
Date and time: during holidays
Place where the incident occurred:
Explanation of the incident:
Hello. I am an ordinary girl attending a Science High School. Until I was in middle school, my relatives never cared about me even though I was really good at school. They only cared about my older, male cousin. When I got admitted to Science High School, they suddenly paid attention to me and told me what to do. Their advice was: women don't have the physical strength required for engineering, girls shouldn't study engineering, the best thing to do is to be a doctor or a teacher and meet a good husband

and have kids and to lead a happy life. They say these things to me and my parents. They didn't help me when I was preparing for Science High School admission at all. I don't get why they suddenly care about my life. Once, I told my uncle that I will not get married and he shouted back saying that it is insane. Spending time with relatives every holiday is so uncomfortable…

Case number: 116
Gender of the subject: female
Number and gender of the offender(s): male
Date and time: last week
Place where the incident occurred: teachers' room

Explanation of the incident:
I am currently attending a science high school. It is currently college application season. In our school, four students applied to Seoul National University (SNU). Out of the four, three are female students and one is a male student. The male student is ranked third out of the four. However, a schoolteacher just called the three female students together and said that majoring science in SNU will be difficult for us because we are women. The teacher asked us to give up the chance [to apply to SNU] so that male students could apply. It is a pity that there are still teachers that stop students from applying to a university and a major that they want just because they are female.

Case number: 129
Gender of the subject: female
Number and gender of the offender(s): several people
Date and time: during high school years
Place where the incident occurred: unspecific location
Explanation of the incident:
Adults and private tutors often said to science high school students "It's okay for girls to study less because they can get married, but men need to take care of their family so they must go to good universities" all the time. When female students don't get good grades in a test, the parents of the male students would proudly say that "girls just can't do as well as boys," "As expected, Science High School is a boy's school". The parents were all women.

Case number: 135
Gender of the subject: female
Number and gender of the offender(s): several people
Date and time: 2012
Place where the incident occurred: Science High School
Explanation of the incident:
In the morning, all male and female students gather in one place for the roll call. I found out that parents made complaints about female students coming to the roll call in shorts. The parents were worried that the male students would not be able to concentrate on studying because they would get aroused. The parents wanted a separate roll call for males/females or to set a dress code for the female students.

Case number: 142
Gender of the subject: female
Number and gender of the offender(s): senior student
Date and time: 3 years ago [2015]
Place where the incident occurred: school
Explanation of the incident:
When I was a first-year student in a science high school, there was an event where student clubs presented their investigations to students from other clubs and external guests. In our club, the first-year students mainly carried out the hands-on work and the second-year students instructed the first-years. As it was the first time the event was being held, the seniors and first-years were both confused. The seniors had to stay until late to fix our mistakes. During the first meeting after this event, the leader of our club discussed how we could improve and told us to get some rest after the big event. The first-year female students were called into a separate room. The leader told us how disappointed he was. He said that boys are naturally clumsy but you girls should've prepared more delicately. He blamed us for the work that the seniors had to do afterwards. He said he was worried about how we would lead the new students next year. At that time, I didn't have the chance to think about how this was wrong because I got scared because of the scolding (though it wasn't a serious scolding). Now that some time has passed, even though it is true that the seniors had to work a lot due to our mistakes, that was a mistake that all of the first years made and it wasn't right to scold the girls more.

ABOUT THE AUTHOR

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Ju Young Lee studied Biology at Korea University (BA) and Neuroscience at the University of Tübingen (MA). She is currently a PhD student at the Max Planck Institute for Biological Cybernetics and is investigating the human brain using medical imaging technologies such as ultra-high field magnetic resonance imaging and micro-computed tomography. The main topics for her PhD project include neuroscience, biomedical imaging and image processing. In addition to her main topics, she maintains an interest in the philosophy of science, and science and technology studies (STS). This article was developed based on an assignment for a course from the Department of Social and Cultural Anthropology at the University of Tübingen, called "Gender and STS".

ABOUT THE INSTITUTE

Max Planck Institute for Biological Cybernetics, Tübingen, Biomedical section/ High-field Magnetic Resonance
The project described in the article started during Ju Young Lee's master studies, independently of the University of Tübingen and the Max Planck Institute. It is a voluntary task to raise awareness of the difficulties that women in science, technology, engineering, and mathematics (STEM) experience. As an initiator of the project, she organized a team of four graduate students for the project. In addition, the podcast "과학기술정책 읽어주는 남자들" [Science Technology Policy Readers] helped organize and publicize the project. The results of the project may be used as a reference for educators, policy makers, scientists and anyone interested in improving the gender imbalance in the STEM field.

Preventing Sexual Violence against Women and Children: a Comprehensive Research Perspective

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ABSTRACT
Sexual violence against women is one of the most urgent challenges of gender research worldwide. The Department of Criminology at the Max Planck Institute for the Study of Crime, Security and Law (formerly: Max Planck Institute for Foreign and International Criminal Law) has carried out a number of different research projects to explore victimisation and sexual delinquency, and how to deal with sex offenders. This article provides an overview of these research projects. In doing so, a particular focus is placed on a project that is currently nearing completion. This project evaluates the treatment of convicted sex offenders, identifies risk factors for reoffending, and analyses the lives of sex offenders after prison release.

INTRODUCTION

In the 1990s, several sex offences against women and children, especially those committed by previously convicted sex offenders, hit the headlines and thus raised the public and political awareness of sex offenders in many countries. This led to a number of reforms in the area of sex offences.[1] One of these reforms was implemented in January 1998 with the "Gesetz zur Bekämpfung von Sexualdelikten und anderen gefährlichen Straftaten" (Law to Combat Sex Offences and Other Dangerous Criminal Acts). In accordance with this act, as of 2003, all sex offenders serving a prison sentence of two years or more were to be mandatorily transferred to so-called social therapeutic correctional treatment facilities—prison wards or inde-

1 For an overview, see *Wössner/Quenzer/Vig*, 2011, pp. 375–393.

pendent prison units where prisoners undergo therapeutic treatment. Against this background, the Department of Criminology at the Max Planck Institute for the Study of Crime, Security and Law, together with the Ministry of Justice in the Free State of Saxony, set up a longitudinal study to analyse recidivism of sex offenders and how it is related to correctional treatment.[2] Another question that was addressed was whether the focus on sex offenders is reasonable, as a large number of recidivist sex offenders do not commit the same type of offence for which they were previously convicted. A major aim of this research endeavor is to contribute to tertiary prevention; that is, improving the rehabilitation of convicted sex offenders and preventing them from relapsing, thus paying due regard to the protection of victims—especially women as victims of sex offences—and to the protection of the general public. In addition, the Freiburg Cohort Study has been investigating group-based trajectory models of crime, thus shedding light on the emergence and evolution of crime, judicial reactions towards crime, and criminal careers.[3] Moreover, the Max Planck Institute is part of a nationwide longitudinal research project on criminal sanctions and recidivism,[4] which aims to reveal important findings on patterns of sexual offending and recidivism.

This offender-focused research strand has been complemented by several victimological studies[5] and a study on the possibilities and limits of restorative justice approaches in cases of sexual violence.[6] The latter study was developed because the needs and responsibilities of those immediately involved (i.e., victims and perpetrators of sex offenders) are not necessarily being met by the criminal justice system.

This article provides an overview of the research activities being conducted at the Max Planck Institute for the Study of Crime, Security and Law and the state of play in these areas of research.

RESEARCH FOCUS 1: VICTIMS OF SEXUAL VIOLENCE

Victimology has evolved as a key area of research in criminology, with a particular interest in sexual victimisation that started prior to the "me too"

2 *Wössner/Hefendehl/Albrecht*, 2013.
3 *Grundies*, 2013, pp. 36–52.
4 *Jehle/Albrecht/Hohmann-Fricke/Tetal*, 2016.
5 *Kury/Chouaf/Obergfell-Fuchs/Wössner*,2004; *Kury/Obergfell-Fuchs/Wössner*, 2004, pp. 749–769.
6 *Zinsstag/Keenan/Wössner/De Brouwer/Bolivar/O'Nolan/Busck-Nielsen*, (in press).

debate. First and foremost, it is crucial to try to understand the true extent of sexual victimisation, since a large number of sexual assaults remain in what is known as the dark (hidden) figure of crime. Why this is the case is another important area of research. Approximately one in two women in Western societies experiences some kind of sexual victimisation at least once in her lifetime.[7] In most sex crime cases, the offender and the victim know each other,[8] and especially "severe sexual offences are committed by offenders who are close to the victim (i.e., friends, family)".[9] The closer the victim-offender relationship is, the lower a victim's willingness to report the crime. It is important to note that, even in victim surveys, it is a major challenge to gather the real number of sexual victimisations. Different victimisation surveys may result in different victimisation rates, because the response behaviour largely depends on how the questions are phrased, and whether, and how, a statutory crime is described in everyday language.[10]

Victims and survivors of sexual assaults have multiple needs. Very often, preliminary and criminal proceedings do not meet these needs. This may not only contribute to the aforementioned reluctance to report sexual assaults but also have detrimental effects on the survivor's psychological and physical well-being. Victims, in particular, want and need to receive answers about what happened to them. They also need the offender to acknowledge the harm done and to take responsibility for this. Thus, it comes as no surprise that those involved, especially victims, are the ones seeking alternative approaches to the injustice they have suffered. While restorative approaches are increasingly being applied to minor offences, practitioners and the judicial world in general are particularly cautious in applying restorative justice (RJ) to sex offences. As a result, victims of sex offences are very often the main instigators of an RJ process. Therefore, RJ practice in cases of sexual violence is ahead of theory concerning this alternative approach. Even though RJ may be very beneficial in cases of sexual violence, it is associated with a number of challenges and limitations that were identified in an international project on exploring the potential of RJ in cases of sexual violence.[11] For instance, RJ is a flexible and responsive approach to meeting not only the needs of victims but also those of the offenders and the communities involved. Among the most striking benefits are an improved perception of justice, improved psychological well-being

7 *Kury/Chouaf/Obergfell-Fuchs/Wössner*, 2004, pp. 589–602.
8 *Kury/Obergfell-Fuchs/Wössner*, 2004, pp. 749–769.
9 *Kury/Obergfell-Fuchs/Wössner,* 2004, pp. 749–769.
10 *Kury/Obergfell-Fuchs/Kloppenburg/Wössner*, 2003, pp. 277–320.
11 *Zinsstag/Keenan/Wössner/DeBrouwer/Bolivar/O'Nolan/Busck-Nielsen,* (in press).

(e.g., by being more actively involved in the criminal justice procedure compared to the victim's traditional passive role in formal court proceedings), and the opportunity to resolve relationship issues with the offender. There are, however, still a number of unsolved questions and challenges concerning issues such as the relationship between RJ and therapy,[12] RJ and the criminal justice system, and the role and definition of communities in RJ. The latter is a result of the important role communities have been playing in the development of RJ practice around the world.[13] In addition, the positive outcomes of RJ in cases of sexual violence must be interpreted cautiously, since these positive outcomes are based on a limited body of research. In any case, preparation, adequate procedural safeguards, and trained and experienced facilitators are essential components of successful RJ programs.

RESEARCH FOCUS 2: THE EFFECTIVENESS OF OFFENDER TREATMENT TO REDUCE RECIDIVISM

A key question in criminological research is what causes serious crimes such as sex offences and whether, and under which conditions, criminal recidivism can be reduced. In this regard, the correctional treatment of offenders, in particular sex offenders, is of major interest, as these offences may result in long-term consequences for victims and survivors in various aspects. These aspects include mental and physical health, as well as negative economic, financial, and social consequences.[14] Therefore, it is of great societal interest to constantly refine our understanding of how to prevent such crimes, not only in terms of primary but also in terms of secondary and tertiary prevention. A number of comprehensive reviews have identified core risk factors for offending and reoffending. It is assumed that the treatment of the core risk factors that are amenable to change results in a therapeutic change and hence reduces recidivism—a rationale that is central to the development of sex offender treatment approaches.[15]

According to the current state-of-the-art for sex offender treatment, cognitive-behavioural treatment reduces recidivism. However, the effects are very small. For this reason, the Max Planck Institute for the Study of

12 *Wössner*, 2017, pp. 248–264.
13 *Zinsstag/Keenan/Wössner/DeBrouwer/Bolivar/O'Nolan/Busck-Nielsen* (in press).
14 *Jewkes/Sen/Garcia-Moreno,* 2002, pp. 147–182.
15 *Wössner/Schwedler*, 2014.

Crime, Security and Law—following the Institute's long tradition of conducting prison research—analysed whether, and under which conditions, correctional treatment of sex offenders reduces recidivism, with the aim of contributing to the further development of sex offender treatment. To this end, a longitudinal prospective study was carried out. A total sample of over 400 sex and violent offenders was explored at several points of data collection—first, at the beginning of the offenders' incarceration; second, shortly before the offender's prison release; and third, on average 18 months after release. A variety of information was collected over the data points, including each subject's personal history, personality, and criminogenic risk factors; the kind of correctional treatment the subjects underwent; and their social situation in the community, including information on self-reported delinquency at the third data collection point in the study. In addition, official criminal records were analysed at a fourth data collection point. The study took a multimethodological approach, including different quantitative and qualitative methods. The main objective of this research project was to analyse recidivism amongst sex offenders and how it is related to correctional treatment. A secondary goal was to further develop the theoretical understanding of sexual delinquency. In this context, Gottfredson and Hirschi's "General Theory of Crime" was of particular interest, as a large number of recidivist sex offenders do not commit the same type of offence for which they were previously convicted. As such, certain non-offence-specific etiological factors might be of relevance.[16] This is closely linked to the third goal, improving the risk assessment for sex offenders. Finally, the lives of sex offenders after prison release were examined, because surprisingly little is known about the actual life of sex offenders post-incarceration. In order to better understand the offender-specific characteristics of these research questions, the study examined not only sex offenders but also violent offenders. The results of this study provide answers to some of the most urgent questions with regard to managing sex offenders. It could be shown, for instance, that correctional treatment yields prosocial changes in sex offenders and violent offenders. However, this therapeutic outcome does not easily translate into a lowered risk of criminal involvement post-release and challenges major assumptions of offender treatment.[17] The study's findings on the lives of sex offenders and violent offenders after prison release contribute to the discussion of why this treatment effect fails to appear. Sex offenders, in particular, are con-

16 *Siegfried/Wössner*, 2016.
17 *Wössner/Schwedler*, 2014.

fronted with several obstacles, difficulties, and stigma after prison release. Whether they successfully cope with these impediments depends on a multifaceted dynamic between their social situation (e.g., having a supportive relationship), functional or dysfunctional coping strategies, adherence to probation conditions, and very often on mental health issues, such as substance abuse problems. Likewise, narratives of change and narratives of being disadvantaged manifest their effects within this complex dynamic.[18] Bearing these results in mind, it should be emphasised that severe crimes (e.g., sex crimes) are rare and that the majority of these crimes are committed by a small group of multiple offenders.[19] Thus, a relapse with a new sex offence is a rare event among the majority of persons who already committed a sex offence. The most promising prevention strategy is to focus on identifying high-risk children and juveniles and to provide them with early intervention measures in order to prevent them from sexually offending in the first place. In most cases, incarceration, especially long-term incarceration, is not associated with a lower risk of reoffending, since they hinder efforts to rehabilitate offenders. Lastly, it should be emphasised that most sex offenders do not recidivate with a new sex offence.[20]

CONCLUSION AND OUTLOOK

Sexual violence against women has remained a politically and emotionally charged topic over the last several decades. Even though the body of scientific knowledge about sex offending and sexual victimisation has been growing steadily, there are still a lot of unanswered questions. One of the aims of the researchers at the Max Planck Institute for the Study of Crime, Security and Law has been to help find answers to these questions. In doing so, both the victim's and the offender's perspectives are considered. The research conducted at the Department of Criminology aligns well with the Department of Criminal Law's new research project "Sexual Autonomy and Sexual Offences." The purpose of this project is to trace and evaluate developments in sexual offences law, to identify best models and practices for future law reforms, and to provide a better understanding of the concept of sexual autonomy.

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18 *Wössner/Gauder/Czudnochowski*, 2019, pp. 66–78; *Wössner/Wienhausen-Knezevic/Gauder*, 2016.

19 *Albrecht/Grundies*, 2007, pp. 447–475.

20 *Albrecht/Grundies,* 2007; *Jehle/Albrecht/Hohmann-Fricke/Tetal*, 2016.

Sexual violence against women, but also against men and children, has a social dimension that needs to be recognised and understood. It is a weapon of warfare and a hallmark of female oppression. Science can help to better understand, and hence to change, the roots of sexual violence against women.

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ABOUT THE INSTITUTE

Max Planck Institute for the Study of Crime, Security and Law – Department of Criminology

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Women in the Captaincy of Paraíba: a Legal History Approach to the Sources of Colonial Brazil

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ABSTRACT
This chapter lays the groundwork for a legal history perspective for the history of women in colonial Paraíba, a captaincy of the Portuguese Empire in Northeast Brazil, based on an analysis of normativities. Using documents about women in colonial Paraíba sourced from Portuguese and Brazilian archives from the sixteenth century until the early nineteenth century, I question the mainstream understanding of women in the colonial period by arguing that there were many differences among women. I demonstrate that women in colonial Paraíba were far from static categorizations and prove that women's legal history in colonial Brazil cannot be understood without connecting gender, religion, condition and status.

INTRODUCTION

After the Brazilian Declaration of Independence in 1822, historians and sociologists began to write about the colonial period, influenced by the nationalism of the nineteenth century. They created and reproduced a colonial discourse describing fixed types of women in the colonial period: the white bourgeois woman, the black woman, the "Indian", and the "mulatto".[1]

1 Conceptions described by the following authors, among others: *Varnhagen*, 1857; *Abreu*, 1998; *Viana*, 2005; *Freyre*, 2006. They describe white women as maiden-like, pure, catholic, mother of many children, always at home, and a guardian of tradition; a lascivious black, seductress of the landowner; an "Indian", catechized, silly and poorly educated; and the "mulatto", slicker, marginal, the sexual "necessary evil" of the colonization. These definitions are described in detail in my doctoral thesis: *Silva*, História do Direito e Colonização do Brasil: as Mulheres da Capitania da Paraíba, 1661–1822, Lisbon 2018. In this chapter, I use the English translations for "*mulato*" (mulatto) and "*índio*" (Indian) without any modern connotation to

According to them, the colonization of Brazil placed Europeans, "Indians" and African slaves together in the American territory, generalizing their different cultures and practices. Women were described in fixed models of identity and classified into racial boxes. Furthermore, they interpreted the colonial process as a one-way relationship where the Aryan (Portuguese) "race" improved the Brazilian people, representing the salvation of the "bestial Indians" and Africans in the new world.

This traditional historiography has been dismantled since the 1970s. Scholars began to develop new approaches and created a specific women's history[2] and, later, a specific postcolonial critique to the understanding of social positions of fixed races and superior classes.

However, other approaches have been able to help dismantle this construct of placing women into fixed categories. These other perspectives highlight the importance of historicizing and contextualizing gender relationships in order to avoid feminist universalism. I appeal specifically to a legal history perspective, a field that has combined women's history and feminist jurisprudence, adding complexity and depth to the interpretation of source documents about women.

In this paper, I demonstrate my own uses and understanding of a legal history approach to women's history in the colonization of Brazil by interpreting documents about the Captaincy of Paraíba sourced from archives in Brazil and Portugal. This captaincy was located in Northeast Brazil and was one of the first to be settled after the Portuguese arrived in Brazil in 1500 as part of the Iberian overseas expansion. The conclusions will prove that the source documents about colonial Brazil cannot be studied without interlacing gender, religion, social position, status, and other classifications.

PLACING LEGAL HISTORY, WOMEN'S HISTORY AND BRAZILIAN COLONIALISM TOGETHER

Since the 1960s, women's history has developed within the feminist movement itself and the sexual revolution. In the 1970s, profiting from the ethnographical developments of anthropology, the history of mentalities,

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the expressions, but according to the use of these words in the documents from this period. These words have been placed in inverted commas to reflect their historical context. When possible, I will mention more specific terms, trying not to generalize groups and identities, as this chapter argues.

2 For example, see *Dias*, 1994; *Soihet/Pedro*, 2007; *Algranti*, 1992.

and the social history stemming from the United States and the Annales School in France (albeit only from the third generation—the *Nouvelle Histoire*), the gendered dimension in historiography began to emerge, associated with the enlargement of the sources. Marxist epistemological premises also helped develop women's history in an attempt to identify symbols of capitalist oppression.

The changes to historical approaches benefited from the aforementioned feminist movement that marked the twentieth century, and which enabled women to gather together in different countries for legal reasons, to demand rights, to fight against what they called male domination, and to demand equality and the right to vote.[3]

During the events and activisms of the 1970s, feminists also founded journals with the specific purpose of publishing women's history and feminist studies, such as *Signs* and *Feminist Studies*, which still serve as scientific landmarks for the field. They also organized meetings and conferences, such as The Berkshire Conference on the History of Women ("The Big Berks") which first took place in 1973.

Historians were finally adding women's history to the picture, making them visible in historical, social and political spaces, with a special emphasis on women's participation in social movements, the fight against famine and political amnesty. A redefinition of politics in everyday life took place, which helped rescue women's experiences, restoring their own history. Notwithstanding, in that very early stage, historians still confronted the binary and simplistic conception of power in which men are dominators and women are subordinated. This homogenized feminist perspectives in European and North American academia for a very long time.

In the 1980s, although the suffragettes' movement and their demand for the right for women to vote had long ago raised awareness, and domestic violence had widely been denounced in many parts of the globe, the movement was still failing to represent all women's voices. The myth of a unified movement and of being one single fight for "the woman" was questioned and criticized for being a white woman's issue. The black feminists movement "shocked" feminist practices and the making of history, questioning second wave feminism. There was not just one women's movement—on the contrary—class and race also shaped women's experiences. It became impossible to continue describing the experience and history of only one type of woman, namely the white bourgeois woman.

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3 For a more detailed description of the developments of women's history in different countries, see *Offen/Pierson/Rendall*, 1991.

Therefore, women's history in the 1980s involved a unique meaning of the category of "woman" itself, including, for example, women of color, Jews, lesbians, women living in poverty, and single mothers. Thus, challenging the heterosexual hegemonic implication of the white middle class, making a sole identity impossible.

The black feminist movement added the black voice and specific demands to the cause that could only be understood via an intersectional approach to the experiences of black women, taking into consideration age, color, sexual orientation, class, religion, and disability.[4] Finally, in 1989, Kimberlé Crenshaw coined the term intersectionality,[5] highlighting the multidimensional and simultaneous character of injustices and social inequalities, making clear that it was impossible to study women without giving consideration to all those influences that generated discrepancies.[6]

By the end of the 1990s and in the early twenty-first century, researchers were retelling the experiences of men and women from different perspectives, with specific consideration to periods of time and geographical locations, with greater attention paid to the representation of daily life, actions, practices, resistances and struggles, and including many different women.[7]

Later on, the concept of intersectionality was used in postcolonial theory by postcolonial feminism, one of the central points of postcolonial criticism in the study of women in colonial contexts. This field cannot be regarded simply as a subset of postcolonial studies or as a variation of feminism. It is more like an intervention that changes the configuration of feminist and postcolonial studies. Postcolonial feminist theory emphasizes the specificities of race, class, nationality, religion, gender-intersections, sexualities and their hierarchies, and epistemology, as well as the social, political, and economic issues that exist among women, their subjectivities, work, sexuality and rights.[8]

Scholars taking this perspective agree that "power relations of gender have intertwined with those of class, race, and sexuality and that these technologies of power have been at the heart of the histories of imperialism, colonialism, and nationalisms shaping our modern world."[9] The most important aspect in the study of the history of gender and women is the

4 *Davis*, 1981.
5 *Crenshaw*, 1989; *Crenshaw*, 1991.
6 For more on the definition of Intersectionality, see *Collins*, 2015.
7 *Samara*, 2003; *Silva*, 1984; *Priore*, 1995.
8 *Rajan/Park*, 2000.
9 *Pierson/Chaudhuri,* 1998.

relationship between class, race and sexuality, and to take into account intersectionality. Gender is not only plural, but is also influenced by class and race.

Aída Castillo, theorist of postcolonial feminism and border identities in Latin America, has demonstrated how postcolonial theories were incorporated into Latin America.[10] In Latin America, colonization brought together different cultures and set off a course of acculturation of indigenous peoples who were considered essentially inferior. Indigenous peoples continue to be constructed by the academia, the media, and the law as different, pre-modern and opposed to progress. This makes it necessary to analyze how discourse strategies are used to perpetuate these colonial relations. Indigenous peoples remain marginalized, even those living in urban centers; they are economically exploited and their culture continues to be "colonized. Thus, it is evident that the concept of colonialism is not unknown in modern Latin America.

Gender analysis of postcolonial theory and its critique of nationalisms indicate the way national narratives have subordinated women to make them "guardians of tradition" and "mothers of the nation". Castillo prioritizes the gender perspective and the analysis of power. Several postcolonial feminists point to the fact that academic feminist discourse replicates the same problems as metamodern discourses when, through an ethnocentric and heterosexist perspective, they appeal to the experience of the Western, white, middle-class woman as the experience of women in general.

In Castillo's words, historicizing and contextualizing all forms of gender relations help to avoid feminist universalism. In the critique of feminist essentialism, postcolonial feminists show that these universalist perspectives of patriarchy also assume that the category of woman is a construct and inherently homogeneous, regardless of class, race and ethnicity. These colonizing discourse strategies tend to build the third-world woman as constrained to the domestic space, to victimization, ignorance and poverty and limited to tradition—the alter ego of the feminist scholar, who is liberal, modern and educated, who makes up her own mind and has control over her body and her sexuality. The problem with these representations is that they reflect a perspective that fails to integrate the specific needs of black and "Indian" women into the agenda of the feminist movement.

The emergence of the decolonial approach also sheds some light on the critique of gender, colonialism, and the development of the link between modernity and coloniality. This approach is closer to the context of South

10 *Castillo*, 2008.

America and focuses on the history of the fifteenth century onwards. Maria Lugones built her theoretical approach to the concept of the coloniality of power, and the way race, gender and sexuality are interlaced when re-reading the relationship between modernity and coloniality, by looking at the development of these categories.[11]

In a similar way, albeit by analyzing another empire, Ann Laura Stoler showed how sexuality is central for colonial governance and a powerful tool for maintaining power in colonial contexts. She demonstrated how gender and sexuality were key to maintaining racially-stratified colonial order in the Dutch Indies. Her argument focuses on the statement that the personal is political in daily life practices; for example, that the prescribed instructions for acts such as bathing, breastfeeding, cooking and sleeping were intimately tied to feelings over personhood, race, and what it meant to be Dutch. She stressed the importance of understanding discourses of racism in dialogue with those of sexuality. Identities in the colony and the formal center of the empire emerged tacitly and were emphatically coded by race. In these colonial models, parenting, breastfeeding, cultural boundaries, illicit sex, orphans, and race emerge as central problems of colonial policy—knowledge of the carnal, the domestic, the intimate, was important to the colonial government.[12]

Parallel to all of these feminist approaches to history, feminists working with contemporary law also established their demands in the same period. While the first specific demands made by women were shaped by the feminist waves, women jurists also put forward their demands on specific issues.

Ann Scales created the *Harvard Women's Law Journal* in 1977,[13] which is still very active today. In 1984, Martha Fineman founded the *Feminism and Legal Theory Project*, a project that aims to connect feminist theory, practice and law. It produced the first studies on women, gender and law.

The new approach taken by the critical legal studies movement questioned the construction of law as the result of a patriarchal and dichotomous world.[14] In the 1980s, Frances Olsen and the feminist group *the FemCrits*, argued that law had a sex—like Western thought, law was based on dualisms that were sexualized. However, this way of thinking is not balanced, because it reflects hierarchies.[15] The problem of such a way of

11 *Lugones*, 2011; *Lugones*, 2007.
12 *Stoler*, 2010.
13 Now called the *Harvard Journal of Law & Gender*.
14 *Weisberg*, 1993.
15 *Olsen*, 1990.

thinking is that the law "lied" in its pretended impartiality, objectivity and rationality. Nevertheless, law for many years was practiced almost exclusively by men, and, because of this, the law both imposed and obscured disparities of sex.

Tove Stang Dahl was responsible for establishing *Women's Law* at the University of Oslo, which officially became an academic field in the university's Faculty of Law in 1974. After the first students enrolled in 1975, the same faculty made classes from the women's perspective a compulsory component of all subjects in the first year of law school. Dahl advocated for a systematization of methods for the new approach, which should be multidisciplinary, considering that the law denied women's experiences and needs, and was not unbiased in terms of class, age, race and gender.

Although these new points of reference could agree on the necessity of a new approach between two scientific traditions, that of legal sciences and of women's studies, they did not agree on a common methodology.

In the same way, historians and other scholars from the human sciences were already writing about how the study of history and the study of law overlap and affect one another. Embryonic ideas of women's legal history were already being discussed in history and other fields in the 1970s and 1980s[16] under other denominations such as: women and the law;[17] women's access to legal professions and lawmaking;[18] women and crime;[19] women and justice;[20] how the law has treated women; women's participation in specific legal institutions; women's rights during certain periods; women's legal activism; women, conflict and resistance facing the law.

Much later, the term appeared in publications under titles referring specifically to women's legal history and feminist legal history.[21] Making use of all these developments, legal historians began to organize the first conferences on women's legal history[22] in order to rethink the dominant narratives of legal history and the role of law in producing and reflecting

16 For Canada, see the work of Constance Backhouse. For Australia, Ann Genovese. For Brazil and Portugal, Maria Beatriz Nizza da Silva. For the United States, Tracy Thomas.

17 *Kane/Williamson,* 2015.

18 *Weisberg*, 1982.

19 *Strange*, 2018; *Uribe-Uran*, 2016.

20 *Batlan,* 2015.

21 *Thomas/Boisseau*, 2011; *Kimble/Rowekamp*, 2017; *Drakopoulou*, 2018.

22 In October 2007, Akron School of Law, Ohio, organized a conference: "The new face of women's legal history". In 2013, the 19th European Forum of Young Legal Historians had as its theme: "(Wo)men Legal History". In 2016, the Institute of Advanced Legal Studies in London organized a one-day conference: "Doing

norms. They questioned the ways in which law historically has clarified women's rights and how the law shaped feminist discourse; how women's historical use of the law has been able to help advance feminist discourse; and how law structures shaped practices and institutions such as marriage, concubinage, divorce, motherhood and inheritance.

Although making an important contribution to the field by placing women at the center of a historical understanding of the past, this new literature focuses heavily on an English-speaking context, especially in the modern era (mid-nineteenth to mid-twentieth century). The texts highlight topics such as: the legal history of women's linear progress from oppression under the law to equal opportunity in modern times; family law; women in the legal profession; how laws were made and interpreted by men; and how gender permeated legal practices. Although all these approaches are important for modern legal history, they still need to do more to cover the colonial era and other periods, such as the early modern period.

Furthermore, many other approaches to the study of gender and sexuality deal competently with the analysis of sexuality and gender in legal history, such as gender legal history,[23] gay legal history[24], transgender legal history[25], queer legal history.[26] Notwithstanding, this paper only focuses on taking a women's approach to the legal history of the Portuguese Empire in a specific colonial space, benefiting from the theoretical developments highlighted in this section.

Taking into consideration these premises, I defend a women's legal history as a useful way to understand and interpret Brazilian colonial history. To do so, it is important to understand the context of the Iberian Expansion and how the Portuguese Empire came to include Brazil in the sixteenth century as part of their "conquests", as well as how legal history cannot be seen in this period as a block of written laws, but as a complex web of normativities.[27]

Women's Legal History". *Vandenbogaerde/Lellouche/Duffuler-Vialle/Dhalluin/Debaenst*, 2016.

23 The term took on special interest in historical analysis following the Joan Scott paper, see *Scott*, 1986. See *Downs*, 2005.

24 *Koppelman*, 2000.

25 Scholars writing on the topic include: Regina Kunzel, Kate Redburn, Marie-Amélie Georgeis.

26 *Minto*, 2018.

27 *Duve*, 2014.

WOMEN IN THE CAPTAINCY OF PARAÍBA: DOCUMENTS AND INTERSECTIONAL APPROACHES IN LEGAL HISTORY

The Portuguese arrived in Brazil in 1500 as a consequence of the Iberian overseas expansion in the sixteenth century. In 322 years of formal colonialism, Lisbon maintained circulating agents and institutions, books and knowledge, as well as people to implement the model of administration and governance they had planned in Lisbon. This circulation was based on normative practices that were already part of a complex system of jurisdictions, known as the *ius commune.* In addition to the influence of religious norms and the use of Roman law interpreted by the medieval tradition, the *Iura propria* ("local laws and customs") also played an important role in this multilayered system. Religious norms influenced everyday practices, such as marriage and divorce, particularly through casuistry that incorporated questions of the "new world" and the novelties of probabilistic thinking on a global scale.[28] Norms could come from the mouth of the priest in the confession, from the hand of the judge educated in Coimbra, or from the thinking of an illiterate judge without any legal education at all. They could also be found in the torture of bodies by the Inquisition, or an order of the king contradicting a written law, a possibility that would take the form of as a grace (*graça*, *mercê*) of the monarch.

In this space, law and practice could seem to be incongruous. Written laws stipulated that marriage, as imported from Europe, was the central event in a woman's life. Traditional marriage in the colony was based on monogamy, concomitant with an intense persecution of bigamy.[29] Concubines and prostitutes were considered "bad women" by social judgment.[30] Sodomy, that is, practices that did not follow what were considered "good uses" of the body, such as homosexuality, could lead people to be literally "turned into ashes", as it was phrased in the law—which meant that bigamists would be burnt at the stake.[31] Men could kill their wives under the protection of the law if they were found committing adultery.[32] Women belonged to the *imbecilitas sexus* ("weaker sex"),[33] and could not be

28 *Tutino*, 2017.
29 Ordenações Filipinas, «fac-simile» da edição de Cândido Mendes de Almeida, Rio de Janeiro, 1870, Coimbra: Fundação Calouste Gulbenkian, 1985, livro 5, título XIX.
30 Ibid., título XVIII.
31 Ibid., título XIII.
32 Ibid., título XXV.
33 *Hespanha*, 2010.

trusted as men should—only honest legitimate wives could have some certain rights and protection. Marriage, especially after the Council of Trent, incorporated even more formalities to be followed and to be recognized. Many black women (and men) were enslaved, but without a systematic and specific law pertaining to their condition.[34]

In any case, these Portuguese recommendations would never be blindly applied with success in the colony. Actual practices never strictly incorporated a foreign model, but adapted some of the norms or established new ones. Furthermore, in daily life, people in the colonies even disobeyed norms, or certain laws simply never made it across the Atlantic.

Departing from this complex scenario, it is clearer to see that, on the ground, the reality of day-to-day life was different from what was prescribed in written laws, which themselves were not written just by one single powerful legislator. As an imperial space, laws other than the *Ordenações Filipinas*—the main body of laws compiled at the beginning of the seventeenth century—were constantly being made specifically for the colonies. Religious "laws", such as the *Constitutições arcebispais* from Portugal, were the model for the *Constituições Primeiras do Arcebispado da Baía*, the first religious law of the colony that replicated the decisions of the Council of Trent[35]. Other sources of law were equally important, such as legal doctrine, or even constant pragmatical problems brought to bear by Jesuits missionaries. New institutions created for the colonies, such as the *Conselho Ultramarino* (Overseas Council), also shaped new ways of translating everyday problems into formal documents sent to the kingdom.[36]

Therefore, we should rather speak of legal practices that traveled to a different cultural context, where processes of translation were in place, even though they sometimes took the shape of the colonial administration.

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34 It is difficult to find a definition for the legal nature of the slave in the law of the seventeenth century because they were, on the one hand, treated as an animal or a beast, or like a child, a servant, a woman, an apprentice, a deaf mute, a demented person, or a prodigal. On the other hand, they were not different from the *peão* or other free men of lower social status. Furthermore, beyond the law, slavery was not static and shaped only by one kind of relationship between slave and owner. It is also wrong to think and say that they did not have rights in an absolute sense. For more, see *Paes*, 2019.

35 Constituições Primeiras do Arcebispado da Bahia feitas, e ordenadas pelo Illustrissimo, e Reverendissimo Senhor D. Sebastião Monteiro da Vide: propostas, e aceitas em o Synodo Diocesano, que o dito Senhor celebrou em 12 de junho do anno de 1707. São Paulo: Na Typographia de 2 de de dezembro de Antonio Louzada Antunes, 1853.

36 For more details on the uses and importance of all these sources, see *Silva*, 2018.

Ann Stoler has shown that colonial cultures "were never direct translations of European society planted in the colonies, but unique cultural configurations, homespun creations in which European food, dress, housing, and morality were given new political meanings in the particular social order of colonial rule".[37] These rules shaped what she calls the education of desire, where aspects of the most private and intimate part of people's lives were controlled by colonial rule. This also happened in Brazil, as I will demonstrate, but there were other influences. In addition to centralized governance of the colony, the regulation of "desire" also happened in much more decentralized spheres, most of the time in both directions.

In the historiography of colonial Brazil, the production of historiographies and a specific connection between history, colonialism and women became even closer in the 1990s, marked by influences from cultural history, historical demography and the history of mentalities. Women's colonial history reflected the documentary revolution that emphasized ecclesiastical archives over public archives, revealing all kinds of records, such as baptisms, marriage dispensations and more. However, the women's perspective could not be analyzed directly; it could only be analyzed through mediators and the voices of men.

Taking this perspective, the latest historical discoveries critique the universality of the patriarchal family model based on the existence of numerous types of families and households.[38] Unlike the classical model of the patriarchal family where the husband, the "man of the house", was the center of the family and the wife was a subordinate woman, subservient to male power, many other types of families can be described through the sources and archives. For example, some of the norms mentioned in reference to marriage were never followed in Brazil.

These examples demonstrate how far women were from static written laws that never existed in isolation in the *Ius Commune* and in the Portuguese Empire. The details of these historical documents, including the women's names, attempt to classify condition and status, and references to local practices show how people lived a different normative life and how the colonial administration tried to solve conflicts by adapting norms and creating new ones.

To begin with, let's think about the idea of gender, the definition of a woman in such a period, and people's sexual orientations. Far from admitting the exclusive existence of static women and men, many sources refer

37 *Stoler*, 2010, p. 24.
38 *Samara*, 2004.

to different interpretations of sexualities in the Portuguese Empire. Sodomy was a practice widespread in the Empire and persecuted by the Inquisition, as the trial of Gonçalo Garcia in 1799 tells us. Born in Paraíba and a sailor in the English and Portuguese armies, he voluntarily sought out the Inquisition in the colony to confess that he practiced innumerable "complete" acts of sodomy with people of the same sex in the *vazo preposto* ("prefixed vessel") and even sometimes tried to perform the same acts with animals. He could not even state how often and where, because of the diversity of locations, times and people. But even with all this "depravity", he said that he kept the Catholic faith, he was sorry and he wanted to save his soul. Because he confessed, he was acquitted of any secular punishment, and instead instructed in the mysteries and dogmas of the Catholic religion.[39] Acts of sodomy among women were more difficult to punish considering that Inquisitors could not identify the exact moment of the consummation of the act, since it did not involve ejaculation.[40] Nevertheless, this does not mean that it did not happen; for example, there are still many secrets of life in a convent which could explain the intimacy among women.[41]

Sex changes and hermaphroditism were also concepts widely discussed in the literature, the medical treatises and processes of the Inquisition. Isaac Cardoso wrote in the sixth book of *De Philosophia Libera in Septem Libros Distributa* about fetuses, the mother's female contribution during gestation, the generation of the male and the female, hermaphrodites and sex change.[42] According to Cardoso, women could become men, whereas men could not become women. He was not very sure about how it could happen—it was an unknown process, hidden by nature and uncertainty—nonetheless, it was very important to him that no one confuse these with situations where women had a very developed clitoris. Amatus Lusitanus also admitted the possibility of sex changes and hermaphroditism based on the model of improvement, a movement that went from femininity to

39 Lisbon, Torre do Tombo Archive (henceforth TTA): *Apresentação de Gonçalo Garcia*. Tribunal do Santo Ofício, Inquisição de Lisboa, proc. 13638.

40 Lisbon, Portugal, Biblioteca Nacional de Portugal (henceforth BNP): *Consulta: pode a Inquisição proceder contra mulheres que umas com as outras tiveram cópula e atos sodomíticos sendo íncubas ou súcubas agentes ut viri com instrumento ou sem ele por vias anteriores ou posteriores. Biblioteca Nacional de Portugal. Colecção de papeis impressos e manuscriptos originaes, mui interessantes para o conhecimento da hsitoria da Inquisição em Portugal.* Códice 869, fls. 361–364.

41 For other parts of Brazil, see *Algranti*, 1992.

42 BNP: *Cardoso*, De Philosophia Libera in Septem Libros Distributa, Venetiis: Bertanorum Sumptibus, 1673. Biblioteca Nacional, microfilme, F 6008.

masculinity as a type of human advancement, describing specific cases of ambiguous genitalia, gender change and hermaphroditism.[43]

Women and men were also subject to different applications of laws, penalties, privileges and rights.[44] The identification of the physical sex interfered drastically in the application of justice, the access to rights and duties, and even in the choice of the specific jurisdiction in the colony. For example, if a cross-dressed person offered sex in public, their sex would define if she or he was committing sodomy (which also included homosexual acts), which could result in them facing the Inquisition. Therefore, there were more options than just the alternative of man or woman. Questions were raised firstly about what a body looked like and secondly, what did someone do with it and with whom.

The general ideas of this time established in laws and medical treatises about women and sexualities shaped the social and juridical treatment dedicated to gender relations, but not in isolation. Status mattered, and here we understand this concept as the division of human gender, the quality of people regarding their rights and obligations, or their situation within the political community. The status of people depended on the social groups to which they belonged, as each one performed a specific social function. The same individual could have more than one status, and, as such, several legal entities could coincide.[45]

Keeping this in mind, let's dive into the sources of colonial Paraíba. Since the beginning of colonization, the Jesuits would write to the kings describing diverse cases of sexual relationships between the Portuguese colonizers and the indigenous peoples.[46] They even asked the king to send prostitutes, orphans and all kinds of unwanted women from Portugal to Brazil, because they could arrange a very good marriage for them in the colony depending on the color of their skin. On the other side of the Atlantic they could find a "good, rich man" and marry "well". The color of the skin mattered more than social position in these situations.[47]

Even orphans could achieve a good position in Paraíba. For example, D. Isabel de Siqueira came to the colony to marry João de Britto Correa, a governor of the Captaincy of Paraíba. She was an orphan in Lisbon at the

43 *Lusitano*, 2010, p. 230.
44 *Gonçalves*, 1992. Edição fac similada da edição da 1a edição de 1557.
45 *Hespanha*, 2015.
46 *Leite*, Cartas dos primeiros Jesuítas do Brasil. Comissão do IV Centenário da cidade de São Paulo, 1956–1958, vols. 1, 2 e 3; *Leite*, Novas cartas jesuíticas. De Nóbrega a Vieira. São Paulo 1940.
47 *Nóbrega*, 1955, p. 79.

Castle of Lisbon.[48] Female orphans were treated differently to male orphans. An example of a further distinction was whether they were legitimate, illegitimate, or born illegitimate but later legitimized. Although children were supposed to be born from a legitimized marriage, parents who did not marry according to the Council of Trent could ask the king for their daughters and sons to be legitimized. Religious men had children with single and married women, lived with them as a family and even asked the king to recognize these children as legitimate sons and daughters, because they could not marry their mothers and the children were considered illegitimate.

That is why many priests wrote to the king asking for the legitimization of children they had in colonial Paraíba, such as the priest of the Habit of St. Peter, Marcos Ferreira de Morais, who requested the king to legitimize two children he had in a relationship with a white woman, D. Anna Francisca Xavier da Cunha in 1771. She was the former wife of Joze Rodrigues, from whom she was divorced according to the court ruling of the ecclesiastical jurisdiction.[49] The children, Manuel Antonio Sarmento Castro and Alexandre Joze de Moraes Sarmento, were educated and had always lived with him. Since he had no legitimate ascendants or descendants, he wanted to have his children legitimized in order to guarantee their inheritance rights, honors and nobility. The supplicant thus asked the king for a provision or letter of legitimization for his children with Anna Francisca, attaching a *treslado de escritura* ("charter") that he had made.

All these status of filiation are important for understanding women in colonial Paraíba as they could potentially compromise their lives, as would their classification as *habitantes* ("inhabitants"). The Portuguese bureaucratic administration system classified the population according to categories that it itself had created.

I found in the baptism and marriages records of the Archdiocese of Paraíba all sorts of classifications for the people in the "new" colony: *pardo* (literally, brown), *cabra* (usually used to refer to a son of a person of African origin and a "*mulatto*"), "*mulatto*" (the son of a white person and a person of African origin), and "*mamaluco*" (the son of an "Indian" and a

48 Corpo Chronologico, parte 1ª, maço 112–dec. Nº 3 do rei D. Felippe II, livro de Doações 31 (fl. 223). Transcripted and published in: *Barbosa*, 1946.

49 Lisbon Overseas Historical Archive (henceforth AHU): AHU_CU_014, Cx. 25, D. 1906.

white person).[50] By the end of the colonial period, the Portuguese administration in the Captaincy of Paraíba had divided people in official reports, classifying women and men as white, "Indians", free blacks, black slaves, free "mulattos" and enslaved "mulattos".[51]

These classifications were important because they reflected a person's state of freedom, or whom they could and could not marry. In the eighteenth century, after the Marquis of Pombal's political and administrative reforms, marriages between white Portuguese and "Indian" persons were registered in Paraíba after 1755, when the King allowed marriage between them without dishonor, because the earlier prohibition had not prevented these groups from having sexual relationships.[52]

The registers show that "Indians" intermarried with people from all different classifications of society. On 17 August 1800, Captain Antonio da Silva Lisboa, an "Indian", married the white woman Maria Jose dos Anjos. On 4 March 1771, Joseph was born, son of the "Indian" João de Araújo and the white woman Ivana Correa—he was the paternal grandson of the "Indian" couple Paulo de Araújo and Luiza Pereira and maternal grandson of Captain Manoel Lopes Machado and Josefa Maria. Likewise, the records show that João was registered on 29 June 1772 as being born the *natural* son—meaning his parents were not married—of the "Indian" Francisco and the widow Marcelina. Josefa, daughter of the "Indian" Domingos Barbosa Correa and Francisca, was born, according to the records, on 3 February 1771.[53]

There are also records of baptisms of children born to "Indian" and "non-Indian", non-white people, such as Constancia, on 17 February 1771, legitimate daughter of an "Indian" and the "cabra" Michaella da Cruz, paternal granddaughter of "Indians" and maternal granddaughter of Marcal Lopes and the "Indian" Paula da Cruz. Casimiro, registered on 11 March

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50 João Pessoa, Paraíba, Brasil, Arquidiocese da Paraíba: Paróquia Nossa Senhora da Assunção, Alhandra, Paraíba. Livro de Registros de Batizados, 05.11.1770 a 17.12.1775; ibid., 26.10.1799 a 25.09.1805; ibid., 1787–1813; Paróquia São Pedro e São Paulo, Mamanguape, Paraíba. Livro de Registros de Matrimônios, 1762–1819; ibid., 1731–1807; ibid., 1798–1806; ibid., 1807–1812; Diocese de Cajazeiras, Paróquia do Bom Sucesso, Pombal, Paraíba. Livro de Batizados, ano de junho 1794 a outubro de 1796.

51 AHU: AHU_CU_014, Cx. 35, D. 2510. AHU_CU_014, Cx. 36, D. 2617. AHU_CU_014, Cx. 38, D. 2711. AHU_CU_014, Cx. 39, D. 2764. AHU_CU_014, Cx. 41, D. 2890. AHU_CU_014, Cx. 46, D. 3273.

52 Alvará régio de 4 de abril de 1755. Transcribed in: *Varnhagen*, 1857, pp. 242–245.

53 João Pessoa, Paraíba, Brasil, Arquidiocese da Paraíba, Paróquia Nossa Senhora da Assunção, Alhandra, Paraíba. Livro de Matrimônios, 1787–1813.

1771, baptized at home due to fears he would die, was the son of an "Indian" and of a "mestiça" abandoned in an "Indian" house, descendant of "Indian" and black grandparents, all incognito. On 17 February 1800, the "Indian" Pedro Roiz and the "parda" Ritta Maria were married.

These same sources prove that slave women were not only sexual slaves of their owners. They married in the Captaincy of Paraíba and baptized their children, constituting families. This was made possible by the *Constituições Primeiras do Arcebispado da Baía*, which, for the first time, allowed marriage between two slaves, as well as between a free person and freed person at the beginning of the eighteenth century. This meant that João and Ana could get married on 18 October 1798. They were from Angola, slaves of Cozme da Costa Teixeira. On 1 December 1798, Antônio and Margarida got married, slaves of the *Reverendo* Luiz Gomes de Melo, both from Angola. In the same year on 28 August, Pedro, from Angola, married Ana, a creole, slaves of the captain José Pereira de Castro.[54] On 24 November 1809, João, a widow, and Gracia got married, both from Angola, slaves of Manoel Pinto.[55] Single slave women also registered their children as the offspring of unknown fathers. In the baptismal books of Paraíba, there are records of slaves baptized as *natural*, without any information about their fathers. For example, Juliana was baptized on 8 May 1797 as the natural daughter of Luzia, slave of Maria Pires. On 20 January 1797, Joana was baptized as Barbara's natural daughter, both slaves of Jose Antonio de Faria.[56]

These status and conditions are all important for analyzing gender: free, freed or slave; prostitute, single or married; orphan, natural or legitimized; "mulatto" or white, as did a person's social position as noble or commoner, which is essential for unraveling colonial society. Colonial Brazil formed an elite, differentiated people according to their financial status in society. Considering regional specifications and Brazil's vast territory, let's take a look at Paraíba again.

The concept of a good man, meaning a man of pure blood and wealth, also traveled from Lisbon to the colony. They were members of the colonial elite that belonged to the so-called "good" families for several generations, keeping bloodlines pure and separate from Jews, new Christians,

54 João Pessoa, Paraíba, Brasil, Arquidiocese da Paraíba, Paróquia de São Pedro e São Paulo, Mamanguape, Paraíba. Livro de registros de matrimônios, 1798–1806.

55 Ibid., 1807–1812.

56 João Pessoa, Paraíba, Brasil, Arquidiocese da Paraíba, Diocese de Cajazeiras, Paróquia do Bom Sucesso, Pombal, Paraíba. Livro de Batizados, ano de junho 1794 a outubro de 1796, fólios 46 e 46v.

Arabs, or black people. None of their ancestors ever worked in occupations involving a craft or trade. With this "clean" past, they could join prestigious institutions and exercise local power in the municipal councils. They could hold positions of power and prestige such as chief captain or a member of lay brotherhoods (such as *Irmandades* and *Confrarias*) and military orders, or even as judges. Men belonging to a higher social position and considered good, usually owned goods and concentrated wealth, power and prestige. For generations, they passed on a code of honor together with a lifestyle and kinship ties based on the ownership of lands and slaves.

The Captaincy of Paraíba had a group of landowners considered to be landed nobility. The occupation of Paraíba resulted from the expansion of the Captaincy of Pernambuco, based on a local elite involved in sugar plantations and enslaving indigenous persons, as well as exercising its power through its involvement in local administration.[57]

This elite group from Pernambuco came as conquerors in exchange for positions and lands. The elite was also composed of those who fought and won against the Dutch and indigenous peoples, having received offices from the Portuguese Crown. They were also characterized by their ownership of land, farms and slaves. This landed elite also held positions as parish priests, military officers and lawyers in the local *câmaras*, farms and local governance. The famous and wealthy Silva Coutinho family had a crown judge, Gregório, and his father was the Chief Captain of Goiana, in the Captaincy of Itamaracá. His uncle was the parish priest of the main church. Gregório married Francisca de Morais de Aragão, daughter of Amaro Gomes Coutinho, master of a sugar mill and one of the richest men in the Captaincy of Paraíba. In 1799, he asked the king for permission to marry Francisca and administer her goods.[58]

Some positions could be acquired independently of social position, others not. Some depended on noble attributes, as was the case for the position of *Escrivão da Fazenda Real, Alfândega e Almoxarife da Paraíba* ("Registrar of the Treasury, Customs and Warehouse"). The Bandeira de Melo family held this position in its family for almost 150 years and was of one of the wealthiest families in colonial Paraíba. Their family history dates back to the coming of Duarte Coelho as the captain of the Captaincy of Pernambuco together with his two brothers. Bento Bandeira de Melo owned the title of Registrar of the Treasury, Warehouse and Customs. His brother, Antonio Borges Bandeira de Melo, was the sergeant-in-chief of

57 *Gonçalves*, 2007.
58 AHU: AHU_CU_014, Cx. 35, D. 2514; AHU_CU_014, Cx. 35, D. 2554.

Paraíba and also a master of a sugar mill.[59] Their uncle, Antônio Bandeira de Melo, was a priest.[60] When Bento Bandeira de Melo died, leaving only his daughter Luiza Maria Rodrigues Bandeira as his heir and successor, she wrote to the king asking him to assign the office to the person who would marry her. In the meanwhile, she asked for the income from the post immediately, so she could feed herself and her sister because they were orphans.[61]

Marriage was one of the means used to keep the same families in power, or to further increase their local importance. But this is not the only connection between gender and social position in this period in Paraíba. The elite women of Paraíba participated actively in the colony's economic life.[62] In many cases, wealthy women could be the administrators of sugar mills after the death of their husbands or during their temporary absence. Many women often took the place of their husband in the administration of the business. Women owned land and ran sugarcane plantations without the interference of men. This could happen for many reasons: because they inherited the property and duties of the husband; because men were away travelling; or, simply because they owned the land themselves or via the donation of *sesmarias* ("land grants").

Women's possessions and actions to obtain goods are frequently mentioned in the documents. Widows listed their belongings in their wills, such as slaves, carts, sickles, axes.[63] Anna da Silveira de Moraes left some money for the marriage of her granddaughters.[64] Clara Spindola asked the king to confirm the limits of her *sesmaria*, since she occupied the land with cattle and horses. She wanted to use the land as her dowry, since she was a young lady and ready for a good marriage.[65]

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59 AHU: AHU_CU_014, Cx. 14, D. 1146.
60 AHU: AHU_CU_014, Cx. 24, D. 1842.
61 AHU: AHU_CU_014, Cx. 48, D. 3378.
62 Until the eighteenth century, sugar plantation owners were prominent in this elite because of the importance of the sugar business. However, after this period, they had to diversify production, expanding to the cotton business and raising cattle. By the beginning of the nineteenth century, consumption and export included not only sugar but also cotton, tanned leather, soles (prepared ox leather), flour, rice, beans, corn, tapioca, tobacco, *carrapato* oil, soap, and cattle. Therefore, we do not find a mercantile elite, as we can observe in other captaincies. In: AHU: AHU_CU_014, Cx. 39, D. 2764; Diálogos das grandezas do Brasil. São Paulo: Melhoramentos, 1977.
63 AHU: AHU_CU_014, Cx. 40, D. 2810.
64 *Ramos/Pinto*, 2012.
65 TTA: *Carta de Sesmaria*. Chancelaria de D. João V, tomo 55, fólios 24V – 26.

Other implications of these analyses can be seen in the fact that the daughters of influential people in colonial Paraíba had easier access to complain to the king in the case of the loss of virginity under the promise of marriage. In the event that a woman lost her virginity under the promise of marriage, but this did not eventuate, they could apply for a forced marriage or monetary compensation of the dowry, according to their position. The two cases we know from the Lisbon Overseas Archives concerning this issue in Paraíba are from the daughters of important men in the colony: Josefa Rodrigues Pires da Silva, the daughter of the captain José Rodrigues Pires,[66] and Teresa Maria do Espírito Santo, the daughter of António de Melo Moniz, *Alferes de Infantaria paga* ("ensign") of the fortress of Cabedelo.[67] However, women of less privileged social status never came to sue and denounce their "violators", as was the case of the rape of many women by the powerful crown judge António Brederode. He used to rape honest women as he please because he was not afraid of any repercussions since he controlled the denunciation of crimes.[68]

Women who belonged to the lower classes became laborers, making up a large proportion of the colonial economy. In the eighteenth century, women were practically the majority of workers in all the colonial cities of Latin America. Work was divided by sex and status. If necessary, colonial women fought for positions, struggling for their own survival. Their work would not make them rich or independent, nor was it a means of social promotion but only a guarantee of some sustenance, sometimes for themselves and their children, as many women would form a family as single mothers with their sons and daughters of unnamed fathers.[69] Among many others, Antonio, born on 7 December, was the natural son of the "mamaluca" Tereza de Jesus, widow, and an unnamed father. Registered on 4 December 1772, Maria was the natural daughter of the "mestiça" Maria dos Santos and an unnamed father. Antonio was born on 20 December, 1771 and was the natural son of the "mamaluca" Tereza de Jesus, widow, and an unnamed father.[70]

The concept of work, however, needs to be analyzed carefully and adapted to the colonial context, according to social conditions. The same

66 AHU: Pernambuco AHU_CU_014, Cx. 23, D. 1765.
67 AHU: AHU_CU_014, Cx. 27, D. 2071.
68 AHU: AHU_CU_014, Cx. 34, D. 2452.
69 *Socolow*, 2015.
70 João Pessoa, Paraíba, Brasil, Arquidiocese da Paraíba: Paróquia Nossa Senhora da Assunção, Alhandra, Paraíba. Livro de Registros de Batizados, 05.11.1770 a 17.12.1775.

work could have different forms—what was work for the woman of a certain status might not be for another. For example, embroidery could be a pastime for the richest housewives but mean the livelihood of some poor women.[71] In this context, the Inquisition accused Luzia Barbalha Bezerra of practicing Judaism. According to the testimonials in her trial, she was poor. She made her living working in the fields, sewing and doing lacework, and she was used to eating whatever she had. These testimonials saved her from being convicted of practicing Judaism, because not working on Saturdays and not eating some kinds of meat or fish could constitute Judaism habits.[72]

Participation in economic life did not mean a free—in the liberal modern sense—and equal world among independent women, or that they earned the same as men. In general, women received less than men. They worked as bakers, innkeepers, seamstresses, saleswomen, weavers, as well as workers in taverns and bakeries.[73] Furthermore, whether they were slaves or not, they could also work as prostitutes. Even mothers seemed to survive by prostituting their daughters, as Adriana did in 1782. She and her son maintained a house of prostitution with her daughters under the protection of the governor in colonial Paraíba.[74]

In addition to status, condition and sexuality, belonging to a religion is another aspect that influences the analysis of colonial women. It was very difficult for women to join a Catholic order in the colony. The king forbade the construction of female convents in the colony because it was part of the duties of women to populate the land.[75] If a woman did have a calling from God, she had to ask for special authorization from the king, as was the case for Prudência Catarina de Lima. After having been called by God to enter religious life, her father, the captain Amaro de Barros Lima, asked the queen for a special authorization to send her to a convent in Baía, since there was not a single convent in the Captaincy of Paraíba in 1778.[76]

Notwithstanding this prohibition, women kept building *recolhimentos* by themselves, a kind of house for "good women", where they could stay

71 *Silva*, 2002.
72 TTA: *Processo de Luzia Barbalha Bezerra*. Tribunal do Santo Ofício, Inquisição de Lisboa, proc. 816.
73 *Schwartz*, 1988.
74 AHU: AHU_CU_014, Cx. 28, D. 2107.
75 Carta Régia 2 de setembro de 1603. *Não se fundem Mosteiros de Freiras na Baía e Pernambuco, mas sim Recolhimentos para donzelas e órfãs*. In: *Silva*, 1854.
76 AHU: AHU_CU_014, Cx. 26, D. 2025.

protected for a period of time without having to take religious vows (for example, when husbands were away on journeys). Maria de Jesus was responsible for a *recolhimento* in Paraíba; she wrote a letter to the king in 1754 asking for alms and described the precariousness situation of 16 women who had come together to live away from the sins of the world. Suffering from serious shortages, she asked the king for support and patronage.[77]

Since the main aim of the Portuguese Inquisition was the persecution of Jews and new Christians that had not truly converted, the accusation of Judaism in the colony was supposed to be judged by this jurisdiction. Without a physical tribunal in the colony, accused people had to face their trial in Lisbon, sometimes tortured and in some cases they were burned in a public ceremony. Filipa Nunes was accused of practicing Judaism because he prayed to God without mentioning the name of Jesus Christ; she kept Saturday as a holy day; and she did not eat pork, hare, rabbit or fish with skin. Mariana Páscoa Bezerra, accused of the same in 1731, was tortured naked in the *potro* until she fainted.[78] In these cases, regardless of gender, status or social position, they all had few options once they fell into the arms of the Inquisition.

CONCLUSIONS

The documents of colonial Paraíba dismantle the original tale of Brazilian historiography from the nineteenth century and beginning of the twentieth century. Instead of a woman slave waiting in the slave quarters for her master to have sex with her, we discovered families composed of slaves inside these same quarters. Instead of a rich white woman making embroidery while waiting to be married, the documents revealed a woman asking the king for land to graze livestock. Religion, in its turn, surpassed other aspects of analysis—status or social position could matter much less if you were accused of practicing Judaism; but a woman from a higher social position had a better chance of becoming a nun. Furthermore, gender and sexualities are much wider and richer fields of analysis than was generally perceived after the colonial period, including the recognition and discussion of homosexuality, sex changes, and hermaphroditism—demonstrating that

77 AHU: AHU_CU_014, Cx. 17, D. 1385.

78 TTA: *Processo de Mariana Páscoa Bezerra*. Tribunal do Santo Ofício, Inquisição de Lisboa, proc. 3514.

there were far more nuances among the differences between men and women.

These documents strongly contradict an approach to analyzing the legal history of women in colonial Brazil that views them as fixed types of women. Instead, the archives open up the possibility to interpret the documents taking an intersectional approach. It has now been demonstrated that to change the history of colonialism it is also necessary to avoid the essentialization of culture, as discussed by feminist postcolonial theory. This must also be applied to the Brazilian colonial context.

Using a legal historical approach, my proposal for a new interpretation of women's colonial legal history is based on several premises. Firstly, the understanding of Portuguese legal history as it simply was—multinormative. This means that the system functioned as a complex fabric of many jurisdictions and was far from the written law prescribed by Portugal; rather, it was closer to the norms stipulated in the colony, which also took into consideration a global dimension of an Empire. Although postcolonial critique revealed the importance of assuming the unbalanced relation between colonized and colonizer, as it should be, it is time to say that although the central power dictated general life in the colony, much more happened that is still being uncovered in sources related to daily life. It is also important to note that postcolonial theory is very useful for deconstructing historiographical narratives that created unequal relations which denied power and agency to those described as subaltern subjects. That is why it is important to stay closer to documents that describe everyday life, by looking for normativities on the ground. Power did not only depend on one single aspect of sex or social position, but on the way these aspects intersected and influence one another.

Secondly, it is vital to move away from the analysis of women's legal history which uses the dominant narratives closer to the modern period and English speaking interpretations, in favor of other periods and places, such as Latin America and the Iberian empires with a long-lasting perspective. Thirdly, it is essential to consider intersectional approaches to understanding women in specific times and places. As has been demonstrated, the nexus between gender, sexual choices, family status, social positions, financial status and religion seen in the documents related to Paraíba has opened up a discussion that is still in its initial steps in legal history and studies about colonial Brazil. The everyday situations presented in this paper run contrary to any pattern that can be seen in any legal history approach based only on written laws. A fully comprehensive legal historical perspective must take into consideration social groups, institutions, forms of associations, and local practices.

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Luisa Stella de Oliveira Coutinho Silva is a researcher at the Max Planck Institute for Legal History and Legal Theory and a qualified lawyer in Portugal and Brazil. She graduated in Law and Psychology, and received her MSc and PhD in Legal History from the Institute of History of Law and Political Thought at the University of Lisbon. She works with the Legal History of the Portuguese Expansion and Women's Legal History. Her current research project investigates Japanese and Portuguese normativities between 1540s and 1630s in a global perspective.

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ABOUT THE INSTITUTE

The Max Planck Institute for Legal History and Legal Theory

The Max Planck Institute for Legal History and Legal Theory, located in Frankfurt am Main, Germany, has three departments dedicated to the study of history and theory of law. Department II, directed by Professor Thomas Duve, studies regimes of normativity in Medieval, early Modern and Modern periods in Europe and beyond. These regimes, based on a broad concept of normativity, allow the interpretation of the history of law as a process of the translation of normative knowledge through a dynamic interaction of norms, institutions and practices in global historical perspectives.

In this department, we are developing a new project, Glocalising Normativities, which aims to construct a global history of normative produc-

tion in a vast historical space that includes places in Asia, Africa, Europe and the Americas. The project proposes focusing on localized observations of the histories of normativities within a global horizon, combining a global perspective on legal history with local case studies, based on detailed analysis of archival sources. While the case studies provide insights into how norms were produced, used, shaped, and given new significance in different contexts, the project as a whole seeks to find a more general picture of how different normative orders interacted, how institutions were created and reshaped through everyday practices, and how media and communication enabled the circulation of normative knowledge.

In the context of this project, my paper questions the traditional historiographical categorization and also lays the groundwork for the history of women in colonial Paraíba, as a local and global example of a part of the Portuguese Empire in colonial Ibero-America. From a legal historical perspective, based on the analysis of normativities beyond written laws, I demonstrate that women's legal history in colonial Brazil cannot be understood without interlacing gender, religion, social position and status, developing a specific approach for women's colonial legal history based on documents from local archives in Portugal and Brazil. I look for a local praxeology in the daily lives of women in the northeast colonial Brazil, to write a legal history of a part of the Portuguese Empire in a transnational context. The content and methodology of this paper are in line with other works in the Institute about the Iberian empires, sharing the approach based on primary sources and the concept of normativities. This approach cares deeply about how the global and the local are connected, and emphasizes how processes of translations and adaptation are important to reconstruct the normative knowledge of the past.