Pregnancy and Politics On the Gender Gap in Political Knowledge, Attitudes, and Participation

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DEPARTMENT OF POLITICAL SCIENCE

Doctoral Dissertation in Political Science Department of Political Science University of Gothenburg 2024

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Front cover illustration: Jenny Wik Cover layout: Mats Widebrandt Back cover illustration: Hanna Blohm

Printing: Stema, Borås, 2024 ISBN: 978-91-8069-635-7 (Print) ISBN: 978-91-8069-636-4 (PDF) http://hdl.handle.net/2077/79661

This dissertation is included as number 182 in Göteborg Studies in Politics, edited by Johannes Lindvall, Department of Political Science, University of Gothenburg.



Abstract

Pregnancy and early parenthood are significant life milestones. They also affect women and men differently. The biological marvel of pregnancy and birth and the changing social roles of parenthood can trigger a reevaluation of personal and social values and political priorities among mothers and fathers and lead to new reflections.

I ask how the time around pregnancy influences political knowledge, attitudes, and participation and whether the experiences of mothers and fathers can explain political differences between women and men. There is a substantial amount of research on the political consequences of parenthood, but pregnancy is less well-understood. Furthermore, causal inference is uncommon in this area of research. I make two main contributions. I integrate pregnancy into the study of how parenthood affects politics, and I provide more robust inferences based on original longitudinal data in a research area that largely relies on data with single time points.

There are four research papers in the dissertation. Three of the papers study the Swedish case. They reveal that, overall, pregnancy and early parenthood have a surprisingly limited impact on a broad range of political outcomes at the individual level. Political demobilization is more likely than mobilization, and sometimes begins during pregnancy, but these changes usually dissipate one to two years post-partum. However, a closer examination of specific topics reveals that parents undergo a learning process and shift their attitudes concerning welfare-state policy and issues that are directly relevant to parents. Mothers and fathers are often similarly affected. Pregnancy and early parenthood cannot, therefore, explain the persistent gender gaps in political knowledge, attitudes, and participation. In the fourth paper, I extend the scope of the analysis beyond parenthood and study the effects of women politicians' media visibility—an alternative explanation for gender gaps in political knowledge. I find that an increased visibility of women does not significantly close the gender knowledge gap in the 49 countries under study. It suggests that if there is a role-model effect of women politicians on political knowledge, it is not a direct function of how often women are seen in the media.

In conclusion, although the effects of pregnancy and early parenthood appear limited, their significance should not be underestimated in relation to other events in people's lives, especially since prevailing expectations are rooted in decades of cross-sectional research that likely overestimates the effects of many different types of events. My findings underscore the critical importance of longitudinal research for furthering our understanding of the many ways in which life experiences, such as pregnancy and parenthood, influence democratic citizenship.

Sammanfattning på svenska

Graviditeten och början av föräldraskapet är viktiga milstolpar i livet. De är också skeenden som påverkar kvinnor och män olika. Blivande föräldrar ställs inte enbart inför graviditetens och födelsens biologiska under – de ställs också inför de förändrade sociala roller som följer med föräldraskapet. Det medför att både mammor och pappor kan behöva omvärdera såväl sina personliga som sociala värderingar, vilket i sin tur kan påverka deras politiska prioriteringar.

Jag undersöker hur perioden kring graviditeten påverkar politisk kunskap, attityder och deltagande och huruvida mammors och pappors erfarenheter kan förklara vissa av de politiska skillnaderna mellan kvinnor och män. Det finns mycket forskning om de politiska konsekvenserna av föräldraskap, men vi förstår graviditetens roll sämre. Dessutom är forskningsdesign som möjliggör kausala slutsatser ovanlig inom forskningsområdet. Jag lämnar alltså två huvudsakliga bidrag: jag integrerar graviditeten i studiet av föräldraskapets politiska effekter, och jag drar mer robusta slutsatser baserade på longitudinella originaldata inom ett forskningsområde som till stor del förlitar sig på tvärsnittsstudier.

Avhandlingen utgörs av fyra forskningsartiklar. Tre av artiklarna fokuserar på Sverige och visar att graviditet och tidigt föräldraskap har en förvånansvärt begränsad inverkan på den enskilde. Jag finner att politisk demobilisering, ibland redan under graviditeten, är vanligare än mobilisering. Förändringarna försvinner dock vanligtvis ett till två år efter förlossningen. En närmare granskning av särskilda ämnen visar dock att föräldrar genomgår en lärandeprocess och ändrar sina attityder till välfärdsstaten och till frågor som är direkt relevanta för föräldrar. Mammor och pappor påverkas ofta på liknande sätt, varför könsskillnader i politisk kunskap, attityder och deltagande inte kan förklaras av graviditet och tidigt föräldraskap. I den fjärde artikeln utvidgar jag analysen bortom föräldraskapet och studerar kvinnliga politikers synlighet i massmedia – en alternativ förklaring till könsskillnader i politisk kunskap. Jag finner ingen tydlig koppling mellan ökad synlighet för kvinnor och minskade kunskapsskillnader mellan könen i de 49 länder jag har undersökt. Det indikerar att eventuell påverkan från kvinnliga politiker på politisk kunskap inte nödvändigtvis är direkt relaterad till deras exponering i media.

Även om graviditet och tidigt föräldraskap inte verkar ha en avgörande påverkan på enskilda människors politiska kunskap, attityder och deltagande bör deras betydelse inte underskattas i jämförelse med andra livshändelser. Skälet är att decennier av tvärsnittsforskning sannolikt har överskattat effekterna av många olika typer av livshändelser. Mina resultat understryker vikten av longitudinell forskning för att fördjupa vår förståelse av hur livserfarenheter såsom graviditet och föräldraskap påverkar det demokratiska medborgarskapet.

Acknowledgments

As political scientists come, I am, ironically maybe, not all that interested in current politics. I have to keep up a bit with the news to not feel too ashamed at the lunch table looking out over Haga's red rooftops. But, I can feel a certain kinship with my study participants who want to stay away from what is going on out there. I am grateful for all of you who indulged me by answering my quizzes about union chairmen, nursing home guidelines, and adoption policy while they were kept up at night by kicking fetuses and screaming babies.

Above all, I am deeply indebted to Elin Naurin, my main supervisor and friend, who apparently saw something in me almost a decade ago that made her bring me on to study pregnancy and parenthood with her. I am always amazed by her dedication and skill in things big and small, from punctuation to wielding theories spanning the entirety of social science. Yet never losing sight of other important things in life. You know, family and friends. And unlike me, she really cares about politics and policy. My research will forever have an Elin tinge to it.

Few have had the fortune of having more than one good supervisor. I have had five. Together they made up a powerful quintet, although they only ever came together as duets. I do not know anyone quite like Johannes Lindvall who can so casually speak about links between the Italian masters, Swedish constitutional history, and why my scatter plot looks slightly off. All while making it sound like it matters and makes sense. I will never be a public intellectual like him, but If I can emulate any of these qualities, I will be a happy scholar. While Mikael Persson was brought on at a late stage, he made a perfect bad cop to Johannes' similarly bad cop. And that was exactly what I needed. Stuart Soroka kept me from being too Swedish (a virtue where I come from) by reminding me that welfare does not necessarily have the same connotations everywhere. Stefan Dahlberg taught me everything about panzerkampfwagens.

Writing is often lonely, yet I have had many lovely friends and colleagues who helped stave off the despair that sometimes seems to loom large. It is surprisingly easy to dispel with a few encouraging words about your paper, even if it is only "nice layout!" The Meat Mountain (yeah, still in development), my lovely Ph.D. cohort: Eva Hoxha, Amanda Linell, Laura Lungu, Frida Nilsson, Felicia Robertson, Elise Tengs, Sofia Wiman, and Magnus Åsblad. Felicia, I kind of want the time to be 15.40. And I think I'm going to miss you. For a long, long time. Eva, may our naive philosophy discussions never dry up. At least, I will remain la oscuridad encarnada. Both of you, I could have never asked for better friends and roommates (although Patrik Michaelsen sure is giving you a run for your money). Magnus and Sofia, thanks for adventuring with me *in the Third Horizon*.

Many of the ideas in this thesis were developed in discussions and in joint projects with all of you in the PregDem research group. Petrus Olander, in particular, has been an inexhaustible commentator and collaborator. I know you will keep us safe from crime, but what about the judicialization threat? Dietlind Stolle and Lucy Zheng both live beyond the ocean, but are never distant. Working with midwives and obstetricians in the PregDem kept me grounded. I think my work matters, but the notion of saving lives in addition to that final abstract touch-up—as Verena Sengpiel, Karolina Lindén, and Helen Elden do—somehow puts things into perspective.

Maria Andreasson and Johan Martinsson, together we braved the wild west of survey methodology of the 2010s and, oh, how we weathered (others') poor kitchenmanship. Along with Henrik Oscarsson, you helped me out in the depths of the data mines in so many ways long before I started the Ph.D. program. Sebastian Lundmark and Daniel Jansson served as both sounding boards and board game compatriots. Around the same time, Dennis Andersson (r), Maria Andreasson, Sofia Axelsson, and I formed the esteemed Thursday Association, which I expect to remain an institution at Gyllene Prag and Kometen. At times Per Oleskog Tryggvason, Edvin Boije, and Elina Lindgren all joined together to celebrate the joys of GD (not GT).

The SOM Institute and all who have contributed to the organization will always be close to my heart. Here, I first cut my academic teeth. I am grateful for financing my Ph.D., my data collections through the Swedish Citizen Panel, and for being a haven of serene cross-tabulation. Beyond those already mentioned, many thanks to Ulrika Andersson, Annika Bergström, Josefine Bové, Anders Carlander, Sophie Cassel, Anna Fägerquist, Sören Holmberg, Jonas Hägglund, Lennart Nilsson, Åsa Nilsson, Björn Rönnerstrand, Frida Vernersdotter, Lenart Weibull, Marcus Weissenbilder, and Patrik Öhberg.

Karl-Oskar Lindgren and Adam Shehata provided valuable feedback on parts of my work along the way, and Marcia Grimes and Moa Frödin Gruneau read the whole manuscript, which improved my dissertation in so many ways! Jana Schwenk and Laura Lungu, I am always so impressed with your detailed yet constructive criticism, keep it up! When it comes to practicalities, Lena Caspers, Christin Forsberg, Johanna Kviberg, Maria Lilleste, Susanne Sandberg, and Maria Thorson, I appreciate that you have always been there to ask questions about logistics, expenses, and teaching.

Over the years, I have learned so much from and appreciated working together with past, present, and future co-authors: Lisa Berglin, Rasmus Broms, Felix Bäckstedt, Monika Djerf-Pierre, Mikael Gilljam, André Krouwel, Yordan Kutiyski, Mary-Kate Lizotte, Monica C. Schneider, Maria Solevid, Anna Stenport, and Lena Wängnerud.

Much of my research has also been powered by the amazing research assistance of Anton Wallin, Julia Hugoson, Daniel Enström, Ingrid Andreasson, Elton Shanaj, Lisa Berglund, Ottilia Eriksson, Lars Hallberg, Oscar Magnusson, and Francine Molnár—who worked on the datasets—and Klara Martinsson and Birgitta Attebo who made great contributions catching expectant parents going to their ultrasound appointment at SU Östra.

The broader group of Ph.D. students has always provided a helpful environment, and I am thankful to Mattias Agerberg, Taiwo Ahmed, Elin Alfredsson, Elin Bergman, Daniel Carelli, Love Christensen, Dragana Davidovic, Stephen Dawson, Gard Olav Dietrichson, Felix Dwinger, Adea Gafuri, Simon Gren, Moa Frödin Gruneau, Felix Hartmann, Ezgi Irgil, Prisca Jöst, Joshua Krusell, Simon Källman, Felix Lehmann, Elena Leuschner, Stina Lindgren, Hilma Lindskog, Josefin Magnusson, Niels Markwat, Milla Marzelius, Valeriya Mechkova, Gefjon Off, Frederik Pfeiffer, Leonie Reicheneder, Jan Rustemeyer, Oskar Rydén, Monika de Silva, Nicholas Sorak, Marcus Tannenberg, Maria Tyrberg, Aiysha Varriach, Luca Versteegen, Erik Vestin, and Albert Wendsjö, as well as the post-docs Oskar Bäcksten Hultin, Jesper Lindqvist, and Jacob Gunderson. The GEPOP research environment includes many more great researchers that I am happy to have as colleagues, a list too long to cover here.

Furthermore, I extend my thanks to Susan Banducci for agreeing to serve as the external opponent, and to Kåre Vernby, Mattias Wahlström, and Marcia Grimes for being members of the examining committee. And to Carl Dahlström and Sverker C. Jagers for always being willing to lend an ear. The Swedish Research Council and Knut and Alice Wallenberg Foundation provided crucial research funding that made this whole project possible. Finally, while the content of this dissertation might not match Folio Society's standards, thanks to Mats Widebrandt, it sure looks like it does.

Although current events are not at the center of my mind, I do have a penchant for politics in general. Regardless of whether genes or socialization is the root cause, I fondly remember endless political discussions with my mother Ulla-Karin Karlson and father Rolf Markstedt, even though we sometimes made grandma Laila cry because we did not get along. I relish those memories (not the crying, of course).

Lastly, all the words I want to express to my life partner and wife, Hanna Blohm, seem trite and banal. Together, we have experienced many of the same things I report on in this dissertation when Edith was born in 2016 and Ilse in 2017. You have helped me in so many ways. Thank you, and I love you.

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Pregnancy and politics

Cissi Wallin, an influential social media advocate in Sweden, described her experiences of motherhood as follows:

One thing I noticed when I had kids was that moms were not expected to talk to each other about anything other than child stuff. If I brought something up that had flown by in the news feed at the open playgroup, people looked like I had just asked them to analyze Uzbek domestic politics.¹

Wallin's perception that mothers are expected to disengage from politics is common. Social norms that are prevalent in groups of "mom-friends" frequently reinforce gender stereotypes, as discussions are limited to childrearing and other parental responsibilities. While these norms are most widespread among moms, they are also influential across social contexts as a result of the centrality of the parental role in adulthood. Nevertheless, a dearth of longitudinal studies have examined the link between parenthood and political engagement.

In this dissertation, I focus on two primary research questions: First, how do pregnancy and parenthood shape parents' political knowledge, attitudes, and participation? Second, do parental experiences affect political gender gaps? More specifically, can life events such as parenthood prompt parents to reorganize their general societal perspectives, such as their ideologies or general political interests, or do parents only rally around the political issues that hold particular significance to them?

Caring for children requires an immense time investment and results in changes in priorities. The need to protect and provide health care, nutrition, education, and financial stability to a child may engender new interests and may trigger political actions. For example, a parent may engage in political activism to advocate for improved healthcare or education systems, thereby defying putative societal expectations dictating that their focus should be limited to household duties. Such expectations—transmitted via peers or seen in media—may cause a parent to act in ways that do not directly align with their needs and wants.

However, not all parents are likely to be equally affected. As Wallin's anecdote above implies, parenthood is more strongly associated with women. A persistent

¹My own translation: May 31, 2022: https://www.instagram.com/p/CeOT1eLNolc/.

and deeply ingrained gender stereotype is that women are more caring than men (Eagly et al., 2020). Since parenthood and caring are closely intertwined, this stereotype typically places higher societal expectations on women (as opposed to men) to prioritize childrearing. Consequently, mothers face more career disruptions and typically take on more parental responsibilities. Furthermore, the physical demands of pregnancy and caring for a child can place additional strains on mothers, both physically and emotionally, thus impacting their ability to engage in other activities, including political pursuits.

I explore these topics through four studies in this dissertation. Drawing mainly on two original large-scale longitudinal datasets from Sweden, I focus on the time around birth and the first two to three years of parenthood. My research in this dissertation demonstrates that pregnancy and parenthood are politically relevant processes that exert robust effects on political information-seeking behavior, political knowledge, and welfare state policy preferences. However, the estimated effects are small compared to those indicated by studies using mainly cross-sectional data. The impacts on mothers and fathers are often strikingly similar. Parenthood does not account for most of the observed gender gaps in areas such as political knowledge, discussions, participation, and attitudes toward the welfare state. This finding is particularly noteworthy considering the disproportionately greater time commitment and physical strain that women often experience during this period.

While changes due to parenthood can sometimes be long-lasting, most are temporary, challenging the common perception that expecting and caring for children fundamentally reshapes one's life. My findings suggest that parents make more incremental changes, selectively focusing on the policies that are most relevant to their new life stage while disregarding less relevant information. This pattern of adapting attitudes and participation is fairly consistent across genders.

In paper one (Naurin et al., 2023), my co-authors and I demonstrate that the onset of pregnancy and early parenthood tends to reduce political engagement among both parents; it also coincides with a widening of gender gaps related to political information-seeking and participation, and it only induces mobilization around child-related activities. The impact of parenthood begins during pregnancy, but the effects are limited. Building on this, paper two (Markstedt et al., 2024) investigates whether decreased political information consumption leads to less political knowledge. We have uncovered slight reductions in parents' knowledge of general current political topics but a more sizeable increase in knowledge regarding welfare state-related topics. At the same time, parenthood does not explain changes in the gender gap. In paper three (Markstedt, 2024a), I ask whether the change in welfare state knowledge aligns with a corresponding change in welfare state attitudes. It appears that pregnancy and parenthood lead to more

support for parentally important welfare state policies but that they exert no impact on overall attitudes toward the scope of the welfare state. My findings indicate few differences between men and women and no consistent feedback effect of healthcare satisfaction.

While there is a distinct impact on parents, the relatively minimal effects of parenthood on gender gaps suggest that parental gender roles are not as fundamentally important explanations of these differences as expected. This has prompted me to explore beyond the direct experience of parenthood and to consider broader political gender roles portrayed by the media. Therefore, in paper four (Markstedt, 2024b), I examine the role-model effect of women in politics on political knowledge in 49 countries. My findings indicate no clear connection between women politicians' visibility in the media and the gender gap in political knowledge. This points to the need for further research into the qualitative aspects of media representation, as the role-model effect may be dependent upon in what manner rather than to what degree women politicians are portrayed.

I argue that there are three main reasons why my study has indicated smaller effects than most previous research. First, longitudinal data provide more conservative and realistic estimates than alternative methods because they are more robust in relation to confounders and show whether effects last. Second, few projects have documented an equally broad set of political outcomes for the individual using longitudinal designs, which means that we lack useful benchmarks from experiences such as getting a job, undergoing a divorce, moving, migration, the death of a loved one, or other significant events. Third, Sweden's gender-equal context and generous welfare state have likely muted the impact of gender roles at this stage of life. However, the differences should not be overstated: Many countries are emulating Sweden and are increasingly introducing welfare policies such as parental leave.

Future research will have to compare more types of life events at different stages of life; they should incorporate more research designs to allow for causal inference over longer periods and to account for more geographical contexts. How do personal experiences, information from friends, or media exposure influence the gender differences in political engagement among adolescents, middle-aged individuals, and seniors? And is there an interplay between specific understandings of life situations and the general views of society, as captured in the position on the left-right ideological spectrum? These are some of the central future research questions this dissertation generates.

In the remainder of this dissertation summary, I broaden the view beyond the individual papers, elaborating upon various conceptual, theoretical, empirical, and practical aspects that are not thoroughly explored within the papers.

Concepts

Labels related to political knowledge might seem simple at first glance, but numerous nuances emerge when we are forced to define them. Several concepts related to my research topic—how pregnancy and parenthood shape parents' political knowledge, attitudes, and participation—require further elaboration.²

Pregnancy is a time-limited event with a distinct beginning and end. In this dissertation, I treat pregnancy as a standalone and continuous, albeit relatively brief, event and as the initial transition into parenthood. Similarly, actual parenthood unmistakably begins with birth (which has helped me identify the impact of parenthood) but has no definite ending (Luhmann et al., 2012).

The remainder of this section focuses on political outcomes for the individual—political knowledge, participation, and attitudes—since pregnancy and parenthood are discussed at length in the papers. I discuss political knowledge in papers two and four (Markstedt, 2024b; Markstedt et al., 2024), attitudes in papers one and three (Markstedt, 2024a; Naurin et al., 2023), and participation in paper one (Naurin et al., 2023). Together, they represent some of the main avenues through which citizens know of, think about, and engage in politics.

Political knowledge is often described as being pivotal for informed attitudes and efficient political action; it is therefore considered crucial to a democracy's health (Dahl, 1979; Mansbridge, 1983). However, as Arthur Lupia (2016) highlighted, there is a frequent lack of conceptual clarity in this field. Several factors contribute to defining political knowledge, but the critical element lies in identifying the specific stage of the learning process it targets.

Scholars have emphasized different stages of the process, including initial awareness, the retention of facts, analytical reasoning, and practical applications (Delli Carpini & Keeter, 1996; Oscarsson & Rapeli, 2019; Zaller, 1992). The most common definition of political knowledge is the "factual information stored in long-term memory" (Delli Carpini & Keeter, 1996, pp. 10–11). Others operationalize knowledge as analytical sophistication, or as citizens' capacity to think critically about political matters and to act on such information (Ferrín et al., 2015; Schulz et al., 2013). This largely reflects the distinction between "fluid" and "crys-

²The focus of my dissertation is on women who become pregnant and their male partners. Most of the partners are biological fathers. While contrasting female and male partners of pregnant women would be useful to isolate aspects such as gender roles from gender, the samples are too small (below one percent). This means that there is not sufficient statistical power for robust statistical analyses, and qualitative investigations are beyond the scope of my studies.

tallized" intelligence in psychology (see, e.g., Hambrick et al., 2008). In the context of political psychology, we can conceptualize fluid intelligence as a trait—the ability to adapt to new information—and crystallized intelligence as a resource of accumulated information.

The factual definition has dominated the field because it is more straightforward to measure than the sophistication conceptualization. Answers to factual questions can be classified as right or wrong. Sophistication may sometimes be what we are interested in, since the ability to put information into practice reveals something beyond what the resources we have would uncover, but it is also more inferential. For example, assigning a "correct" vote choice based on policy preferences requires assumptions about objective needs. I rely on the factual interpretation of knowledge, because it is easier to measure, more likely to respond to changing circumstances, more comparable to previous research, and a meaningful stepping stone to political action. That is to say, my definition is closer to crystallized rather than fluid intelligence. A recent suggestion to use open-ended questions to capture sophistication offers a promising complement (Kraft, 2023; Kraft & Dolan, 2023); however, this lies beyond the scope of my dissertation.

The definition of political knowledge points to different assumptions about the level of detail (depth) and the variety of domains (breadth) one should be familiar with to be an effective citizen. The depth varies from basic facts to complex understandings, and the breadth refers to the range of political domains, from local to global issues, reflecting the diverse nature of politics. I will return to these points when discussing how to measure political knowledge in chapter 5.

My two other sets of political outcomes are not necessarily easier to define, but they are less contentious. Political attitudes are the topics of papers one (Naurin et al., 2023) and three (Markstedt, 2024a), while political participation, encompassing more outwardly directed political activities (Burns et al., 2001), is investigated in paper one (Naurin et al., 2023).

Political attitudes are citizens' beliefs and emotions regarding issues, events, persons, groups, symbols, or objects. As with political knowledge, attitudes can be broad in scope or can span across the left-right ideological dimension and can thus approach basic political values, or they can be directed toward specific political policies (Zaller, 1992, pp. 28–39). Broader attitudes structure specific ones similarly to the relation between general and specific political knowledge (Gilens, 2001). For example, opinions about to what degree the state should regulate society are correlated with views regarding matters such as camera surveillance or the provision of public housing.

Although outside the purview of my dissertation, there are many factors through which to conceptualize attitude strength, such as direction, salience, intensity, extremity, whether it is informed or not, and so forth (Bassili, 2008; Krosnick &

Telhami, 1995). I will only use direction-based measures and focus on welfare state attitudes, even though distinguishing between these forms of attitudes could reveal more details about the mechanisms behind attitude formation.

I use the widely accepted definition of *political participation* by Verba et al. (1995, p. 38), according to which participation is an activity "that has the intent or effect of influencing government action—either directly by affecting the making or implementation of public policy or indirectly by influencing the selection of people who make those policies." Such activities include being involved in political parties, attending political events, and participating in demonstrations. Additionally, political participation can encompass behaviors such as political consumerism or online activities, although it does not include political discussions. We include conventional forms of participation, such as being involved in political parties, and less demanding forms, such as boycotting or signing petitions.

A common problem that arises when defining these concepts concerns the delineation of what is political (Leftwich, 2015). We can all agree that voting is political, but is a consumer buycott—such as buying fair-trade coffee—or recycling your plastic bags political (enough)? Since it is a political act to draw this distinction, the question of what is political will never be fully resolved, and it will remain a problem when studying gender differences in politics (Fitzgerald, 2013; van Deth, 2016). Keeping this conceptual debate in mind will be useful when theorizing what the link is between parenthood, political knowledge, attitudes, and behavior.

3

Theory

Why would experiences during pregnancy and parenthood matter in relation to political outcomes? From a political socialization perspective, how we think and act in politics is "in part a distillation of a person's lifetime experiences," as Zaller (1992, p. 23) puts it. Childhood events influence us, and we are also impacted when we grow up and get jobs, meet partners, retire, and so forth (Jennings, 2007; Stoker & Bass, 2011). Life events disrupt our daily routines and force us to change our thinking and behavior. This is not to say that heritability plays no role—genes matter in attitude formation (Alford et al., 2005) and political participation (e.g., through personality; Mondak, 2010)—but environmental factors are easier to change through policy and thus have greater societal relevance.

It takes time to raise children; parents undergo significant identity shifts and distinct hormonal and physical changes, aspects that affect political outcomes (Schlozman et al., 1995). While mothers and fathers have less time to develop new identities during this period, only mothers are directly impacted by the physical changes. Furthermore, mothers still did most of the childrearing more than a decade later (Paull, 2008), and the identity shifts often seem to be stronger for them than for fathers (Klar, 2013; Langner et al., 2017; Schneider & Bos, 2019). This suggests both parents would be more politically disengaged rather than engaged but that mothers would be more affected by parenthood in general.

How could shifts in available time and changing interests, identities, and biology translate to changes in political outlook? I will employ two perspectives to develop expectations about how parental experiences affect parents overall. The perspectives also provide a framework to understand the gender gap in political engagement, with distinct implications for mothers and fathers. Having children can affect the rational choices people make based on self-interest, but it can also affect the social expectations and gender roles that might sometimes contravene self-interest. These are not necessarily mutually exclusive perspectives and are often empirically difficult to disentangle, but they can help us consider why people act the way they do when having children.

In summary, the social expectations perspective envisions a broad influence of parenthood on cognitive and practical political engagement. Conversely, the self-interest perspective suggests a more focused or localized impact, with parents expected to concentrate on issues directly relevant to their caregiver roles.

However, context is relevant as well. While both cultural factors (as they relate to societal expectations) and policy environments (closely linked to individual self-interest) sometimes shape both mothers' and fathers' experiences similarly, they play an especially critical role in the case of the gender gap. This is because gender role expectations often exhibit greater diversity and complexity than the general expectations surrounding how parents are affected in general. Expectations are also more tentative because they involve the relative movement of two groups: mothers and fathers.

The distinction between self-interest and social expectations is not directly tested in most of my papers but can be inferred from the results. For example, in paper three, I compare the effects of parenthood on attitudes toward specific policies that are directly beneficial to parents with the effects on broader views regarding the welfare state. I most directly capture social expectations in paper four, in which I measure women politicians' visibility in media as a direct indicator of the social roles of women and men in politics.

3.1 Self-interest

From a *self-interest* perspective, we can anticipate that parents are more informed about, have firmer stances on, and are more likely to act on political subjects that align closely with their interests. I develop this discussion further in paper two. People develop interests in the matters that affect them personally, an idea captured in the issue-public theory (Boninger et al., 1995; Iyengar, 1990; Krosnick, 1990). Belonging to a given issue-public implies a particular motivation to learn about 'their' issue. A rational choice logic suggests that parents will, for example, favor state intervention if they expect to be beneficiaries of the policies (Jæger, 2006; Meltzer & Richard, 1981; Moene & Wallerstein, 2003). Parents become specialists who learn more about welfare state topics and adopt more positive attitudes toward healthcare, early childhood services, daycare, and school policy. Similarly, they are more likely to spend time engaging in those topics.

At the same time, parents' resources are limited, suggesting a trade-off between different policy areas. We know that parenthood means more time performing (unpaid) household labor and, hence, less time to do other things (Gjerdingen & Center, 2005). Time has been argued by Schlozman et al. (1995) to be important for political participation and likely for information consumption and attitudinal formation, too. The consequence should be reduced knowledge of current political topics and less participation in political issues outside the parenting domain.

The self-interest perspective posits particular predictions related to the gender gap. There are legitimate reasons to expect differing impacts of parenthood on mothers and fathers. Economic theory predict that individuals in households will

either specialize in home production or in market production (Becker, 1993). In practice, we know that mothers commonly face greater career disruptions due to childrearing (Dribe & Stanfors, 2009; Paull, 2008), resulting in more significant income losses than fathers (Kleven et al., 2019). They typically bear a larger share of the physical labor and responsibilities related to childcare, which applies even to mothers with full-time employment (Craig, 2006). Economic studies on child-related wage penalties indicate that gender wage disparities often stem from women reducing their work hours, exiting the workforce, or switching to lower-paying jobs post-childbirth (Kleven et al., 2019).

Furthermore, when divorce or separation rates are high, preferences should diverge more within a couple. Therefore, disparities between parents' political interests or participation levels can be expected, especially when one parent, often the mother, has comparatively fewer resources. Such differences in resources and interests are likely to be related and mutually reinforcing.

3.2 Social expectations

Social role theory (Eagly & Wood, 2012; Eagly et al., 2000; Schneider & Bos, 2019) is useful for considering the impact of social expectations on political outcomes. First, it can help us understand why outcomes differ from what could be expected from (easily identified) self-interest. This does not mean that social role theory necessarily clashes directly with the self-interest perspective, as deviating from prescribed behavior can have reputational consequences, and many parents wish to be a valued group member (Akerlof & Kranton, 2000; Ellemers, 2018); however, the outcomes could still differ when considering narrow self-interest. Second, and most importantly, it provides detailed theories regarding why women and men differ in their social behavior.

Social role theory suggests that gendered traits and stereotypes arise from the traditional societal roles of men and women, which are rooted in historical and biological differences related to men's strength and women's childbearing capacity (Wood & Eagly, 2002). The theory proposes that, initially, these differences led to men engaging more in hunting, plowing, and other strength-demanding labor, while women focused on childrearing and child-compatible labor such as foraging.

Even with industrialization, the physical demands of motherhood largely excluded women from the paid workforce, allowing men to dominate economic sectors and gain more resources and power. Consequently, women typically developed communal traits such as empathy and kindness suited to caregiving. In contrast, men developed agentic traits such as aggression and ambition, fitting their roles in hunting, labor, and leadership. This socialization process perpetuates these traits, with societal expectations enforcing traditional gender behaviors

(Rudman & Glick, 2001). Observations of men and women in these distinct roles further solidify stereotypes about gender-specific traits, reinforcing the belief that each sex innately possesses the traits needed for their respective roles. This is a theme I pursue the furthest in paper four.

Built into the theory is the expectation that as women and men increasingly divide tasks more evenly (both paid and unpaid household work) gender stereotypes will also change. Eagly et al. (2020) have studied long-term changes in Americans' perceptions of the typical traits women and men possess. They found that men were viewed as more agentic in the mid-1940s. However, in the late 2010s, women had reached the same level as men, i.e., they were viewed as equally agentic. This trend is possibly a result of the greater participation of women in the labor force during the same time. However, the public's view that women are more caring than men even strengthened somewhat. This change might be explained by the employment sector still being highly sex-segregated. Women still tend to take on socially demanding education or healthcare jobs. Whether these trends travel beyond the US context is uncertain. However, we know that labor market trends are similar elsewhere (Cortes & Pan, 2018), which might imply their findings are more generalizable.

When considering where social role theory-based hypotheses and narrowly defined self-interest hypotheses might deviate, we must acknowledge that, as Akerlof and Kranton (2000) contend, social norms can be integrated into a broadly conceived rational choice model by considering the utility derived from adhering to such norms.

However, to illustrate a scenario in which social roles are more dominant, let us consider an example involving a mother and father who share a child. If the mother would become more supportive of the welfare state relative to the father when transitioning to parenthood, this could suggest that the care trait linked to parenthood affects the mother more than the father. This applies if we assume that both parents derive the same (low) utility of an expansion of the welfare state. The mother would be fulfilling social expectations to a greater extent by adopting the traits of a "good parent." This broader welfare state support is not necessarily because they have rationally calculated that these policies will directly benefit their family but because doing so aligns with the societal expectation that prioritizing education is a key aspect of good parenting. It should also be noted that an alternative explanation for the broad support for the welfare state among women is that women tend to work more in the public sector.

Self-interest and social expectations can thus be expected to be structured through meso-level peer networks, but macro-level factors such as policy environment are likely as important in structuring them. This is what I will discuss next.

3.3 Macro-level context

The policy environment is an integral part of the macro-level context of parents. This includes how parental leave, childcare policies, other types of financial support, and labor market policies affect political engagement. Policy feedback theory stipulates that once enacted, "new policies create a new politics" (Schattschneider, 1935, cited in Soss and Schram, 2007). This is an important part of the theoretical framework in paper three. There, I discuss policy feedback in connection with how direct experiences of welfare state services matter in relation to the demand and support for the specific welfare services, as well as support for the welfare state overall.

The formal institutions are, however, not the only relevant macro-level factor. Informal institutions, or social norms, influence how closely gender and political roles overlap and are transmitted by the political world. For example, it has been suggested that the representation of genders in politics, particularly in relation to gender stereotypes and balance among politicians, matters for political interest, knowledge, and participation (Desposato & Norrander, 2009; Fortin-Rittberger, 2016; Karp & Banducci, 2008; Nir & McClurg, 2015; Pereira, 2019; Sanbonmatsu, 2002). The specific mechanisms suggested have often been vaguely formulated, but examples include proportional electoral systems signaling greater inclusivity (Kittilson & Schwindt-Bayer, 2010; Kittilson & Schwindt-Bayer, 2012), which might decrease gender gaps by motivating women to engage more with political topics.

An often overlooked factor is the media's role in shaping gender divides in political knowledge, which I argue in paper four. The media, being the main source of political information, dictates information quality and distribution (Andersen et al., 2016; Esser et al., 2012; Eveland et al., 2005; Graber & Dunaway, 2017; Jerit et al., 2006). Although debates about media's role in knowledge acquisition persist, gender disparities in representation are evident, with women being underrepresented in the news compared to their political representation (Benesch, 2012; Van der Pas & Aaldering, 2020). Factors such as dual responsibilities and shifting roles might play a part in this discrepancy, but the precise role of the media remains underexplored.

Clearly, there are many theoretical reasons to expect that parenthood can affect parents and create gender gaps. Understanding whether these are driven by self-interest, social expectations, or (more likely) a combination of both is important because it can help us understand the nature of political behaviors and attitudes.

4

Literature review

This section briefly delineates the empirical evidence related to how parenthood influences political attitudes and behavior. While this is not an exhaustive review—more thorough details can be found in the individual papers—the aim is rather to offer insight into the existing body of knowledge on this subject.

The available research concerning the impact of parenthood on political knowledge is limited, and the findings regarding political attitudes and participation are extensive but challenging to compare due to their diversity. There is also a notable scarcity of longitudinal studies, which is understandable given the substantial resources required for such research. While cross-sectional studies provide insights into the differences between parents and non-parents or mothers and fathers, they fall short in terms of determining whether parenthood is the causal factor.

Various operationalizations of the dependent variables and parenthood are used in the literature. Samples are drawn from different policy contexts and span decades, during which significant improvements in gender equality have been made. In addition, studying group differences inherently complicates matters, as mothers and fathers may react differently. Thus, it is no surprise that the findings are strikingly mixed: Having children is either interpreted as demobilizing (Brady et al., 1995; Ferrín et al., 2019; Quaranta & Dotti Sani, 2018), without significant effects (Schlozman et al., 1994; Verba et al., 1997; Voorpostel & Coffé, 2012), or even as mobilizing (Elder & Greene, 2012). However, most indicate a demobilizing impact, which is more applicable for mothers.

Regarding attitudes, parenthood seems to mean different things for women and men, and mothers are more likely to exhibit a left-wing or liberal stance on policy issues (Elder & Greene, 2012). In contrast, some research has revealed a "first daughter effect," wherein fathers whose first child is a daughter have been found to hold more progressive gender equality attitudes (Greenlee et al., 2020; Sharrow et al., 2018), although this effect is not consistent (Costa et al., 2019). The tendency for cross-sectional studies is to find larger coefficients, and longitudinal studies typically find smaller ones, which can be expected given that longitudinal studies isolate effects better but are also more conservative.

Furthermore, while pregnancy and parenthood can be examined from various perspectives, most research centers on parenthood, overlooking the distinct phases of pregnancy and childbirth. More nuanced research endeavors have spotlighted

various stages of parenthood (Banducci et al., 2016; Elder & Greene, 2012; Ferrín et al., 2019; Greenlee, 2014; Quaranta & Dotti Sani, 2018), emphasizing the importance of pinpointing when gender disparities in political behavior arise.

Despite these limitations, we can still discern some key takeaways from the literature. A useful starting point is to examine the size of the gender gap early and later in life. We have gleaned from long-term longitudinal studies that men gained more political knowledge than women as they grew older (Jennings, 1996). Nevertheless, life-cycle changes could not explain gender gaps in attitudes towards gender equality (Jennings, 2006). Rather, generational and contemporaneous factors seemed to explain the gap in this study. This suggests that experiences in adulthood play a role in some cases but cast doubt in others, although these studies are not always linked to specific events. Hence, the gap could be derived from any combination of events or processes. No similar longitudinal study has explored the long-term life-cycle effects of the gender gap in political participation or political attitudes in relation to factors other than gender equality.

A single cross-sectional study focused on how parenthood affects political knowledge. It demonstrated that the gender gap is greater among parents than non-parents (Ferrín et al., 2019), but whether parents have lower knowledge than non-parents was not discussed in detail.

More has been done on how parenthood relates to attitudes, although mostly cross-sectional designs have been used. Welfare state attitudes are more positive among parents than non-parents in cross-country comparisons (Ainsaar, 2012; Banducci et al., 2016): Mothers are, in particular, more positive toward government childcare provisions compared to all other categories (Ainsaar, 2012; Elder & Greene, 2007; Lizotte, 2017). Conversely, the only longitudinal study in this area revealed no impact on general welfare state support but found temporary increases in support for specific policies that are directly beneficial to parents: daycare and educational spending (Burlacu & Lühiste, 2020). This effect was somewhat more pronounced among mothers than fathers.

Political participation is the most well-researched topic, but the findings are mixed. Quaranta and Dotti Sani (2018) found that parenthood in 27 European countries was correlated with higher electoral turnout but no substantive gender gap, alongside a parental demobilization in demonstrating, particularly among mothers. Bhatti et al. (2018) found instead a temporarily lower turnout around when a child is born, particularly for mothers. Coffé and Bolzendahl (2010) found that having children was negatively associated with various acts of political participation in 19 Western democracies and found a larger coefficient for women. Mobilization appears mostly in child-centric arenas, such as involvement in school boards, which was greater among mothers (Jennings, 1979; O'Neill & Gidengil, 2017; Schlozman et al., 1995).

However, some longitudinal studies have examined participation. Using Swiss data, Voorpostel and Coffé (2012) found that parenthood did affect mothers and fathers differently. Turnout increased more among fathers while having schoolaged children increased volunteering and political activism among mothers. Using UK panel data, Grechyna (2022) found a temporary effect of the first birth on women's turnout and participation in party activities. Bellettini et al. (2023) also provided longitudinal estimates of turnout from Italian registers. They found that the demobilizing effects of small children on parents' turnout lasts at least five years, and the effects are greater on mothers than on fathers.

In conclusion, the empirical studies reviewed here exhibit a wide range of findings, but a common thread is the tendency to show that mothers are more politically demobilized than fathers. The variations in these results might be affected by different policy contexts, such as the availability of daycare or prevailing attitudes toward gender equality. For example, policies such as parental leave have been found to mitigate the negative impact of single motherhood on political participation within certain income brackets (Shore, 2020). Additionally, genderspecific policies seem to be linked to smaller differences in political interest, particularly during adulthood (Fraile & Gomez, 2017a).

Furthermore, there is growing interest in exploring how the norm context matters rather than the policy context. Here, norm context refers to the informal, unwritten rules of society, rather than the formal, written rules that govern policies. The norms can both be the consequences of policies, but also be derived from socialized beliefs, economic conditions, and so forth. For example, it has been suggested that women politicians, in particular, can help narrow the related knowledge gaps by serving as political role models (Dassonneville & McAllister, 2018; Fortin-Rittberger, 2016; Fraile & Gomez, 2017b; Pereira, 2019).

In summary, it is crucial to recognize that our grasp of the underlying mechanisms driving these findings remains tentative. A significant challenge is empirically demonstrating a direct causal relationship between parenthood and its impact on various intermediate political variables. This leaves unanswered questions about whether the observed effects are due to factors such as time constraints, financial pressures associated with the 'child penalty,' or less tangible factors such as identity and peer expectations. These are the issues I address in papers one, two, and three. In paper four, I focus on whether women politicians' media presence can explain the gender gap in political knowledge. The data and research designs that I used in my investigations are described below.

Data, design, and methods

This section delves into the methodologies behind my data collection and analysis, primarily focused on Sweden—a context critical for understanding the details of my findings. My work includes the creation of several original datasets and a new measure of women's representation in media, highlighting an area previously underexplored in the literature. I will discuss the implications of using longitudinal designs when studying gender gaps in political engagement, an approach that remains relatively rare in this field. Special attention is devoted to the methodological complications of measuring political knowledge, a cornerstone of my research that is particularly relevant to papers two and four (Markstedt, 2024b; Markstedt et al., 2024) of this dissertation.

5.1 Data

The Gothenburg University Research Program on Pregnancy and Politics (Preg-Dem) is a collaborative research project between political scientists, midwives, and obstetricians. My colleagues and I collected two original large-scale datasets to study how pregnancy and early parenthood affect citizens' political engagement.

The first dataset was collected via the online Swedish Citizen Panel (SCP; used in paper one, Naurin et al., 2023, and paper three Markstedt, 2024a). The SCP was established in 2010 and is administered by the SOM Insitute at the University of Gothenburg. It had 75,000 active respondents in 2020. Its sample is comprised primarily of non-probability recruited respondents, but it has the advantage of being sufficiently large to capture enough respondents within this transitory population. Every six months for six years (2015 to 2020), we asked panelists whether they or their partner was pregnant. The final sample consisted of 4,270 pregnant women and their partners and 11,022 respondents who did not become pregnant during this period.

The second original dataset I used is a longitudinal survey of pregnant women and their partners called the Swedish Pregnancy Panel (for more details, see Markstedt et al., 2022; used in paper two, Markstedt, 2024b). Participants were recruited between September 2019 and March 2020 in the ultrasound clinic waiting area at Sahlgrenska University Hospital in Gothenburg, Sweden. Since Sweden offers free antenatal care, almost all women undergo routine ultrasound scans.

Sahlgrenska University Hospital is a tertiary care unit with about 10,000 deliveries per year, making it the largest birthing hospital in Sweden. Most (96 percent) of the women in the area undergo their early ultrasounds at this hospital. It is therefore a unique place to recruit many pregnant women and partners.

While not strictly a probability sample, it was close to a census of that specific cohort of parents with an estimated 72 percent recruitment rate.³ Seven waves of data were collected starting mid-pregnancy until their children were two years old. I use a subsample of 3,554 of the 6,940 recruited respondents in my study. It is a subsample because the first round of knowledge questions started in the second wave, and some respondents had dropped out by then. To account for the knowledge question difficulty, I also created an auxiliary dataset of media coverage frequency based on media searches in a news media database (Retriever Research) of the 182 topical knowledge questions featured in the Swedish Pregnancy Panel.

To study the role of gender role models in the media in relation to the gender gap in political knowledge, in paper four (see Markstedt, 2024b), I created a new detailed measure of the representation of women politicians in the media in 49 countries between 1996 and 2015. To do so, I started with the EveryPolitician dataset,⁴ which includes the names of 78,382 politicians from 233 countries. I supplemented this when there was no data by, for instance, contacting legislatures or using publicly available lists. Finally, representativity measures were made by searching for politicians' names in Factiva, a news database. Robustness checks were made using the Global Media Monitoring Project's gender balance measures in news media (GMMP, 2020). For measures of political knowledge, I used two cross-national dataset collections: the European Election Studies (EES) and the Comparative Study of Electoral Systems (CSES). I used CSES modules 1–4⁵ and EES 2009 and 2014. Furthermore, to account for characteristics specific to the item level and data collection in the CSES and EES data, I also coded features of the questions and surveys we know to matter for the gender gap.

5.2 Design

The main aim of this dissertation is to capture what happens to citizens as they become parents and to ascertain whether this differs between women and men. Note that I define the treatment starting with the pregnancy. To investigate this, the research design is crucial. While it is often impossible to produce perfect causal estimates, such estimates allow us to distinguish the treatment effect of

³It was estimated since we did not have the exact number of pregnant women and partners who showed up at the ultrasound clinic, but we could get a good estimate based on registries.

⁴www.everypolitician.org

⁵Unfortunately, since political knowledge is difficult to measure—not least when conducting cross-country comparisons—CSES discontinued its efforts when fielding module 5 (Gidengil et al., 2016).

becoming a parent from threats to inference, such as selection effects (Morgan & Winship, 2015).

As I have argued elsewhere, cross-sectional data is unsuitable to estimate the effects of parenthood for two reasons. First, in cross-sections, comparisons can only be made between groups. We cannot know whether parents and non-parents are sufficiently comparable, even when using many control variables. We usually do not have adequate controls and settle on the low-hanging fruit, such as gender, age, education, etc. Second, the dynamics cannot be captured to identify when changes emerge and how long-lived effects are. This is why longitudinal designs should involve repeated measures of the same respondents, preferably also following people who have not been treated.

While we have learned much from previous research, the domination of cross-sectional designs has also created expectations of large effect sizes. Cross-sectional studies generally result in larger effect sizes than longitudinal ones because they do not control for stability effects inherent in repeated measures over time (see, e.g. Adachi & Willoughby, 2015). Longitudinal studies, by controlling for these stability effects, tend to reveal smaller effect sizes as they account for individual baseline levels and changes, thus providing a more conservative estimate of the effect of predictors on outcomes. This makes it tricky to assess whether the effects found in longitudinal research are small or merely smaller because it is not a cross-section.

I use longitudinal data in most of the studies included in this dissertation, which allows me to estimate within-person changes. Furthermore, I am able to compare the treatment group with a control group of people who did not become parents in the two papers using the Swedish Citizen Panel (papers one and three). This allows me to make comparisons between the changes in the treated group and the same change in the non-treated group. The continual screening of the Swedish Citizen Panel also allows me to test the parallel trends assumption, which holds that the treated and non-treated groups are not already on different paths before the expected treatment (Cunningham, 2021). I do this in paper three. This means that I have a better position to argue that what I find is caused by parenthood, although selection into parenthood is still a threat to inference.

In paper two, I use the Swedish Pregnancy Panel and have a cohort pre-post design. Here, I have repeated measures, but lack the control group available in the Swedish Citizen Panel (used in papers one and three). This design is a less robust causal estimate than in papers one and three, although within-person changes are substantially closer than between-group comparisons in a single time point. However, I still use a difference-in-difference design when comparing mothers and fathers. The Swedish Pregnancy Panel has other useful features. First, respondents were recruited continually for six months, and the following survey waves were matched to their estimated delivery time and later to the child's age. This means

that contemporary factors can excluded to some extent. Such factors include, for example, the state of the economy, the COVID-19 pandemic that hit during the data collection, or other news events. The Swedish Pregnancy Panel sample is closer to a probability-based sample than the Swedish Citizen Panel, albeit limited to a metropolitan area. A probability sample is generally preferable to a non-probability-based one as the generalizability is better.

What other threats to inference are there? If we are interested in parents worldwide, generalizability is a concern, since I mostly use Swedish data. As discussed throughout the papers (see, e.g., the extensive discussion in paper two; Markstedt et al., 2024), Sweden is ranked among the highest in terms of gender equality and the generosity of welfare state policy. This includes important policies, such as a sizeable earmarked paternal leave (Edlund & Öun, 2016), even though other countries are slowly catching up (Earle et al., 2023). However, it is similar to other OECD countries in terms of, for instance, the gender gap in educational attainment (OECD, 2019) and the gender wage gap (OECD, 2022). It is unclear to what extent this makes estimates comparable to other settings. Regardless, Sweden should be a strong example of what we might anticipate in numerous countries.

In paper four (Markstedt, 2024b), I use cross-national datasets. This design allows me to generalize across more political contexts. However, in light of the original cross-sectional design, I approach causal inference by collapsing the datasets to country-year means and estimating within-country changes. Such a design entails several assumptions, most notably that the respondents in a country answering one survey wave are comparable, as a group, to the sample in the following wave. I use survey weights, but this only partly improves inference. While this does not take us all the way, it is a meaningful improvement on previous studies that only estimated cross-country differences.

To accurately gauge what happens to citizens as they become parents, the range of measures used is pivotal as well.

5.3 Attitudes and participation measures

In the first paper, we aimed to explore a comprehensive range of aspects, what we labeled *political engagement*. This term encompasses the necessary factors for active political involvement, such as political interest and information-seeking, as well as actual political behaviors, including engaging in discussions, effecting change, participating in political consumerism, and sharing political content online. I followed up with a narrower range of measures in the other three papers.

In paper one, we assessed respondents' daily time devoted to gathering political information (via the Internet, TV, radio, newspapers, etc.) about local, Swedish, and international politics. It is important to note that while this measure indicated

changes in information-seeking, exact time estimates can be challenging to obtain through survey items, as individuals often over-report their news consumption (Prior, 2009a, Prior, 2009b, Prior, 2013; also see Dilliplane et al., 2013). Additionally, there might be gender-specific patterns in reporting the amount of information sought, but the within-person comparisons reduce this bias.

Attitudes regarding the importance of politics were gauged through questions about political interest, the value respondents placed on being "knowledgeable about politics," and how often they "ponder societal issues."

Moreover, we examined political participation, specifically discussing politics and political action. The discussion items included conversations with partners and colleagues, and political actions were captured through questions regarding, for instance, buycotting or boycotting, signing petitions, and attempts to influence local welfare state institutions, such as schools and childcare. This made it possible to explore whether motivations related to children and parenting trigger political engagement during early parenthood.

The third paper applied a more specific focus assessing attitudes toward the welfare state by analyzing views regarding its size and scope. This included both specific attitudes about welfare programs relevant to pregnancy and childbirth, such as "reducing preschool class sizes" and "increasing midwives in maternity wards," and general perspectives such as reducing the size of the public sector. This allowed me to distinguish between the more general outwardly directed attitudes and to capture parents' specific self-interest.

5.4 Knowledge measures

Political knowledge, central to papers two and four (Markstedt, 2024b; Markstedt et al., 2024), poses definitional challenges, as discussed in chapter 2. Measurement issues are even more pronounced here compared to attitudes and participation. These topics are vital, as the variance in political knowledge findings is likely often rooted in the definitions and measures used. I will discuss two key measurement factors: the range of political topics covered (breadth) and the question format.

Starting with the range of topics, a central question concerns whether it is unidimensional or multi-dimensional. Early propositions by Almond (1950) and subsequent validations by Zaller (1986) and Delli Carpini and Keeter (1996) suggested a dominant dimension of knowledge with additional, specialized dimensions. While these specialized dimensions, highlighted by researchers such as Gilens (2001) and Bendz and Oskarson (2022), are critical in shaping attitudes, much of the research skews toward a unidimensional view for simplicity's sake.

This unidimensional approach might limit the breadth of political topics included in the measure. Lupia (2016) observed a paternalistic attitude reflected

in the view that politically relevant topics only include "rules of the game, the substance of politics, and people and parties" (Delli Carpini & Keeter, 1996, p. 65). How can we claim authority over what citizens should know when the potentially relevant information for evaluating public policy is nearly limitless?

A more multi-dimensional approach would include a wider array of topics that reflect various aspects of political life, thus providing a more comprehensive understanding of political knowledge. Realistically, capturing the full spectrum of political knowledge would require an extensive set of questions, likely numbering in the higher tens or hundreds, to cover all potential fields of specialization. However, I extend beyond the unidimensionality in paper two by capturing two topical areas.

We know that the gender gap in political knowledge is partly due to the nature of the facts measured, often reflecting topics of greater interest to men (Dolan, 2011; Ferrín et al., 2015; Hooghe et al., 2007; Stolle & Gidengil, 2010), as initially outlined by Delli Carpini and Keeter (1996). This suggests an inherent gender bias in the measures themselves. However, when broader definitions of politics are considered, including practical aspects such as government benefits and local politics, women demonstrate equal knowledge (Coffé, 2013; Dolan, 2011; Shaker, 2012). In areas directly relevant to women, such as women's rights, abortion, healthcare, and local issues, women often outperform men (Hooghe et al., 2007). Therefore, a broader approach to discerning what constitutes political content is necessary to capture and understand the gender differences in political knowledge.

The gender gap can also be affected by how survey questions are asked (Ferrín et al., 2017, 2018; Fortin-Rittberger, 2020). These methodological studies were initially aimed at investigating how aspects of the question format affect the gap estimates: more specifically, what knowledge question "trait" increase the likelihood of correct guessing without prior knowledge (Ferrín et al., 2017; Lizotte & Sidman, 2009; Mondak & Anderson, 2004). Since men have a greater penchant for guessing, this can be an issue (Tsai & Lin, 2017). For example, fewer response alternatives make it easier to guess; therefore, how the question is asked matters in relation to the gender gap estimate.

Mondak and Anderson (2004) showed that anywhere from a third to half of the gender gap in political knowledge in the US could be attributed to the use of "don't know-responses" (DKs) and fewer response options. Similar results regarding the use of DKs have been demonstrated in British (Frazer & Macdonald, 2003) and Taiwanese data (Tsai & Lin, 2017) as well as in cross-national comparisons (Ferrín et al., 2018). Discouraging or simply excluding DKs can reduce differences by leveling the playing field (Miller, 2019; Miller & Orr, 2008), but measurement reliability might be compromised as a result (Sturgis et al., 2008).

Lizotte and Sidman (2009) have attributed these findings to differences in risk aversion between men and women. Although none of the studies above model risk-

taking specifically, they infer risk-taking from response behavior. Research on risk behavior, such as that conducted by Arnett (1992), has found that a combination of socialization and more inherent traits lie behind a higher risk aversion propensity among women compared to men. While individual research findings support this description, there is considerable cross-country variation (Bönte, 2015). Furthermore, a recent meta-analysis revealed that gender gaps in risk-taking are minimal and context-dependent when they are present (Tinsley & Ely, 2018).

The hypothesis that some methodological features trigger insecurity in women, which would limit their guessing propensity (Mendez & Osborn, 2010), has been thrown into question. Difficulties reproducing a clear link between stereotype threat and the gender gap (Azevedo et al., 2023; Pruysers & Blais, 2014) further suggest that we might have to discard the theory as relevant to the case of gender gaps in knowledge. Regardless, one could still allow respondents to express uncertainty about the correct answer and to provide more response alternatives to limit the risks.

Another methodological aspect of the gender gap was revealed in a study by Prior and Lupia (2008) on the effects of monetary incentives and extra time on knowledge discrepancies. They found that the gender gap increased when participants were given money to respond to the survey. At the same time, the gap decreased, but not to the same extent, when the respondents had more time to respond (c.f., Ferrín et al., 2022). Similarly, using visual questions rather than verbal ones, such as questions using the faces of politicians, also generated smaller gender gaps (Prior, 2014).

Finally, exploring how knowledge develops longitudinally—such as what happens when citizens experience life events—is fairly new. There are examples of longitudinal designs from political communications wherein current political events are measured (e.g., Shehata et al., 2015; Shehata & Strömbäck, 2018). This has engendered new measurement issues that have not been thoroughly explored, such as how to think about current events not being "current" for a long time; thus, they need to be measured using different events at different junctures.

All of these factors must be considered when measuring knowledge. Design features to reduce bias and increase validity and reliability thus include the following: 1) having more response options (such as four rather than two), 2) avoiding open-ended questions, 3) measuring as many questions as possible, and 4) asking many different kinds of questions. While these options are not always feasible, they are useful to keep in mind. In sum, I use a factual knowledge definition. When possible, I aim to use more inclusive measurements of political knowledge. Importantly, across the definitions, political knowledge can be regarded as a citizen resource, as opposed to a trait. Therefore, we can acquire, develop, and maybe even lose it as we age.

Paper summaries

In this dissertation, I investigate how pregnancy and parenthood influence parents' political knowledge, attitudes, and participation, focusing on gender differences. I summarize the content of the papers in Table 1.

The first paper establishes the groundwork by examining the demobilizing effect of pregnancy on political information intake and participation, revealing small but robust effects on parents but a more pronounced impact on mothers. Building upon this, the second paper delves into how becoming a parent affects political knowledge, demonstrating persistent gender disparities but increasing knowledge about welfare state topics over time. The third paper investigates whether the change in welfare state knowledge when becoming a parent coincides with an impact on attitudes toward state and welfare policies, noting growing support for child-centric policies but similar attitudes between men and women post-childbirth. Finally, the fourth paper broadens the scope to encompass societal influences—media representation—challenging the notion that the visibility of women in media correlates with women's political learning and participation. Together, these papers address how the personal experience of parenthood aligns with broader political and societal dynamics.

6.1 Paper one: The effect of pregnancy on engagement with politics

Are women and men mobilized or demobilized politically by the earliest phases of parenthood? Although a large body of literature has examined how parenthood relates to the gender gap in political knowledge, the findings of prior studies are inconsistent. Notably, most have not investigated the very beginning of parenthood—pregnancy—a key potential trigger for political gender gaps. My co-authors and I argue that examining parenthood from pregnancy onwards can further improve our adulthood and political socialization, especially given the significant gendered experiences during this transition.

Previous research has linked parenthood to reduced political engagement, while some studies have revealed a negligible impact or even heightened engagement in certain areas. Parenthood's main effect is likely related to the amount of time dedicated to childrearing, which removes parents from the labor market. It also

Table 1: Paper overview

| | Research question | Dependent variable(s) | Independent variable(s) | Data |
|-------------|---|--|--|--|
| Paper one | Are women and men mobilized or demobilized politically by the earliest phases of parenthood? | Information seeking, importance of politics, political discussion, political participation, trying to change services and organizations | Pregnancy and parenthood | Swedish Citizen Panel (SCP) |
| Paper two | What do expecting mothers and fathers know about current political events, and how does their knowledge change throughout pregnancy and as the child grows? | Political knowledge | Pregnancy | Swedish Pregnancy Panel, Retriever (Medie- arkivet) |
| Paper three | How do people's opinions of the state and its social policies change when expecting a child and becoming a parent? | Welfare state attitudes | Pregnancy and parenthood | Swedish Citizen Panel (SCP) |
| Paper four | How do women politicians' media representation impact the gender gap in political knowledge? | Political knowledge | Visibility of women politicians in news media | EveryPolitician Factiva, EES and the CSES |

involves identity shifts and cognitive investments, which are more pronounced for mothers. These are coupled with unique physical and hormonal changes.

We define political engagement broadly as a combination of necessary resources (e.g., political information and political interest) and actions such as political discussions, efforts to foment change, and online sharing of political content. We expect both parents to be demobilized by pregnancy and early parenthood, but with stronger effects on mothers compared to fathers, thus widening political gender gaps.

We used data from the Swedish Citizen Panel (SCP) collected semi-annually from 2015 to 2019, wherein 2,108 participants reported first-time pregnancies (note that the sample is smaller because we only use first-time pregnancies). We compared them to 11,022 non-pregnant respondents using sample matching. The findings across five indices suggest that demobilization occurs as early as during pregnancy and that it is stronger and more enduring for mothers, particularly in areas such as political information intake and participation. The effects are small, but there are both strengthened and new gender gaps, some persisting beyond when the child is two years old.

This study underscores the unexplored political implications of pregnancy, suggesting that political disengagement may stem from time restrictions and evolving life priorities as well as potential hormonal influences (Hoekzema et al., 2017). Future research is necessary to investigate *how* pregnancy and childbirth matter, which we address in paper two.

6.2 Paper two: Parents' political knowledge during pregnancy and after childbirth

What do expecting mothers and fathers know about current political events, and how does their knowledge change throughout pregnancy and as the child grows? Previous research has often found that women possess less political knowledge in this domain, leading researchers to speculate that parenthood is a probable cause. Some contemporary findings further emphasize a more pronounced gender gap among parents compared to non-parents. However, no studies have tracked this knowledge evolution, particularly from the onset of pregnancy, which we argue could be a pivotal period for potential gender disparities.

Parenthood is a profound experience, requiring cognitive and behavioral adjustments and possibly shifting information priorities. Heightened emotions, interactions with welfare services, and identity alterations characterize this phase. As evidenced in paper one (Naurin et al., 2023), both parents, particularly the mother, tend to engage less with political information during this phase. Other studies have revealed a more significant demobilization among women, though

their re-engagement varies. In relation to parenthood-related subjects, they are less negatively or even positively affected.

When focusing on knowledge related to current events, we expected that both parents would experience a decline in general knowledge post-childbirth, with mothers facing a steeper drop. Conversely, both were expected to increase their understanding of welfare state topics, especially women, given their more pronounced roles in childrearing and their more severe career interruptions.

We used a dataset of Swedish parents recruited at the largest hospital in Gothenburg, Sweden (N = 3,554). The collection spanned four waves, from mid-pregnancy to the child's first birthday. It included 171 political current affairs questions. Our findings revealed distinct gender differences. While fathers knew more than mothers about general current events, mothers possessed slightly more knowledge of welfare state subjects. These disparities remained consistent post-birth, although both genders exhibited more knowledge of welfare state topics as the child aged.

This paper contributes to the literature regarding life events, socialization, and how political knowledge develops as citizens become parents. By providing a longitudinal account, we can assess the gender dynamics during pregnancy and post-childbirth and offer a nuanced understanding of this critical adulthood phase. We have established that parenthood is a politically demobilizing phase that involves learning. Contrary to previous research, both mothers and fathers experience similar consequences. Do these changes have any consequences in relation to attitudes? I explore this question in the next paper.

6.3 Paper three: How pregnancy, childbirth, and experience with healthcare shape views of the state and welfare state policies

How do people's opinions of the state and its social policies change when expecting a child and becoming a parent? Previous studies have yielded mixed results. While some have found that parenthood increases support for the welfare state generally, others have found that it does not affect general attitudes but only specific policy attitudes. Some have also found that women's attitudes are more strongly affected than men's. However, a research gap remains, as no comprehensive within-person comparison of parents and non-parents over time has been made. Furthermore, it remains uncertain whether different types of welfare state service interactions play a role.

I expect that parenthood may reshape welfare state perceptions. As people become parents, they prioritize policies promoting the provision of healthcare and education. As women are more directly engaged in the parental role and exhibit greater interest than men in maintaining strong welfare state policies, I expect that women should be more heavily affected. Furthermore, I expect that

positive experiences with these services during events such as childbirth may increase support for policies related to their personal lives and the welfare state more generally.

I used data from the Swedish Citizen Panel to compare 2,464 first-time parents with about 13,000 non-parents from 2015 to 2020. Using staggered event timing regression models, I found that both parents grew more supportive of child-centric welfare policies, such as increasing the number of midwives, improving home-based healthcare, reducing preschool class sizes, and subsidizing children's glasses. This process started during or before pregnancies but intensified after children's births. However, these attitudes related to specific policies did not lead to broader welfare state attitude shifts. Notably, while women's political behaviors (such as participation) might have differed more than men's after childbirth, their policy attitudes aligned closely with men's.

While the results suggest that pregnancy may have become politically relevant by causing changes in policy preferences, foundational views on the state's role remained unchanged for most. As these findings emerged from a Swedish context known for its advanced welfare state and gender equality, further research could explore these dynamics in different societal settings and deepen understandings of how expecting parents may exhibit solidarity toward others in similar situations.

6.4 Paper four: Women in the media environment and the gender gap in political knowledge

The relatively modest impact of parenthood on gender gaps, especially that noted in paper two, indicates that parental gender roles may not be as critical in explaining these gaps as previously believed. This realization prompts me to shift the focus from the direct experience of parenthood to the wider political gender roles reflected in the representation of women in politics.

The greater representation of women in legislatures has been associated with a reduced gender gap in political knowledge. However, the direct link between gender equality in various countries and this observation has not been conclusively established. Scholars have argued that women in politics may serve as role models, though the exact mechanism is unclear. Previous literature has also not persuasively excluded endogeneity or reverse causality—more gender-equal countries might produce more women representatives and a smaller gender gap in political knowledge without a direct link between the two.

In my study, I argued that if there is a causal link, the visibility of women in media should ultimately matter in relation to women's political learning. Rather than only considering the number of women in legislatures, I focused on their media presence. I explored gender representation in the media using detailed, original

measures spanning 49 countries based on news media mentions of politicians. These confirmed the previous findings that women are underrepresented in the media in proportion to their presence in legislatures. This could be the result of women holding fewer significant political roles and harboring possible media biases.

I used two additional data sources to test this relationship: the individual-level European Election Studies (EES) and the Comparative Study of Electoral Systems (CSES), encompassing 290,000 survey responses in 49 countries between 1996 and 2015. Aggregate two-way fixed-effects and micro-level models indicated that the gender knowledge gap is not linked to women's media visibility or changes in parliamentary coefficients, challenging the role model mechanism. While I have no causal design, I demonstrated considerable variability in how strongly women's descriptive representation in parliaments is reflected in the media and proved that it is not connected to political knowledge gaps.

Here, I contribute to the literature on political socialization and the media's role in shaping how women and men experience politics. The paper underscores that we might be overestimating the role-model effect related to the visibility of women politicians. Despite using a better and more detailed measure of women's political representation from the perspective of citizens, I have found no effect. Future studies should consider whether there is a qualitative impact, such as how women and men politicians are portrayed differently.

Key insights

I have asked two key research questions in this dissertation. First, how do pregnancy and parenthood shape parents' political knowledge, attitudes, and participation? Second, can parenthood increase the difference between women and men?

I have used several original longitudinal datasets in a research area where these research designs are still uncommon. Previous research has mostly been unable to estimate causal effects and pinpoint when the effects start if they exist. This is because cross-sectional data, which dominate the area, cannot distinguish between the effects of parenthood and the ways in which the parental and non-parental groups differ and have a single time point. My original longitudinal datasets allowed me to provide more robust inference, particularly in papers one and three where I compared parents and non-parents (Markstedt, 2024a; Naurin et al., 2023). The detailed longitudinal designs also allowed me to incorporate pregnancy into the theory of how parenthood affects politics.

Pregnancy and parenthood frequently exerted a limited impact on parents' political knowledge, attitudes, and participation. When these life events affected parents' behavior and parenthood, they were almost always demobilizing or caused the parents to be more "inward-looking." The effects were also, in most cases, temporary and dissipated within one or two years after giving birth. Some exceptions include information-seeking behavior, which remained diminished beyond the first few years.

While these findings could be interpreted as small effects on political engagement, the impact of parenthood should not be underestimated relative to other events. Unemployment is a useful comparison given its impact, but even after the Great Recession of 2008, people often reverted to their original redistribution attitudes once they had acquired a new job (Margalit, 2013). Direct parallels are difficult to find between studies, given different designs, measurements, etc., but they reveal that the impact might not differ when comparisons are made. Furthermore, many expectations are arguably based on cross-sectional surveys that were initiated in the 1930s and 40s. Using greater longitudinal and causal inference adoption, social scientists should reconceptualize how we develop these effect size expectations. For example, we should examine within-person standard deviations in longitudinal research, to better capture how much people change over time.

Furthermore, the distinction between welfare state-related topics, which are more closely related to parents' personal situations, and more general political topics provides insights beyond simply confirming that there are no effects. This categorization has revealed that parenthood sometimes leads to a shift in priorities that align with parents' self-interest. Parents learned more about welfare state-related topics (Markstedt et al., 2024), became more positive about policies aligned with their parental roles (Markstedt, 2024a), and were more likely to try to change local school policies (Naurin et al., 2023). Although self-interest is difficult to empirically disentangle from societal expectations, minimal evidence has suggested that the role of parenthood exerts a transformative effect on more "global" attitudes, such as general wealth redistribution. However, I do not directly measure how much parents engage with the role, which could reveal more.

My second question concerned gender gaps. The findings also suggest that mothers and fathers are often similarly influenced during pregnancy and early parenthood. Therefore, it often cannot explain the small but robust gender gaps in relation to various political attitudes and behavior indicators. For example, while fathers generally know more about current political events, mothers exhibit slightly more awareness of welfare state topics. This distinction persists after childbirth, suggesting that parenthood does not radically reshape the knowledge gap. The same applies to attitudes toward state policies and the welfare state. Both genders display similar trends, growing more supportive of child-centric welfare policies but without a broader shift in their overall views regarding the welfare state.

The findings align with other longitudinal findings from my broader research agenda indicating that pregnancy and parenthood do not substantially affect gender identities (Naurin et al., 2021), that emotions are surprisingly stable, and that partners do not affect each other's emotional states (Zheng et al., 2022). Sometimes, however, the effects are more pronounced and enduring for mothers. This greater demobilization among mothers is evident in their reduced political information intake and participation measures. Previous research, mostly based on cross-sectional designs, has likely overestimated the impact of having children on the differences between women and men.

Extending the scope beyond parenthood to the visibility of women in politics does not significantly close the gender knowledge gap. This can be interpreted as indicating that gender role narratives in news media are not linked to how women and men learn about politics. More role models in the media might not directly translate to greater self-efficacy, increased persuasiveness, and the retention of more information.

The findings in this dissertation are unexpected from a feminist perspective, as they portray the caregiving and nurturing roles inherent in motherhood as having profound implications for political attitudes and actions (e.g., Hanisch,

1970; Ruddick, 1995). Furthermore, a common intuition is that parenthood, with its unique experiences and responsibilities, is believed to fundamentally reshape our views and behaviors (Senior, 2014).

7.1 Limitations

While the research in this dissertation has advanced our knowledge, it is not without limitations. Acknowledging its practical and theoretical limitations can help guide future research. First, the use of data from a relatively gender-equal context has the consequence that we cannot, without reflection, generalize the findings to substantively less gender-equal contexts. Given Sweden's socio-political and cultural specifics, particularly its progressive gender norms and welfare state structure, the findings may not directly apply to societies with different societal dynamics. The importance of policy contexts, as indicated in cross-sectional studies (Banducci et al., 2016), suggests the need for longitudinal studies with cross-country samples.

Despite being more robust than cross-sections, panel studies face challenges related to tracking respondents over time, particularly during significant life events such as pregnancy and parenthood. Samples can be subject to non-random attrition, potentially introducing biases (see analyses in Markstedt et al., 2022), and even though panel designs are a big step up from cross-sections, self-selection into parenthood is still a concern. Another methodological concern relates to measuring political knowledge, especially when using a few questions at each time point, as in papers two and four. Additionally, since the hypothesized mechanisms have not been closely examined, we need to devote greater effort to capturing them.

Finally, the challenges involved in establishing causality are considerable. While the media's influence in disseminating information and establishing agendas is undeniable, quantifying this impact accurately is an intricate process, given the vast array of media outlets and the diverse consumption habits of individuals. The conceptual gap between cause and effect means that many alternative causal pathways could still link politics and citizens beyond the media. Nevertheless, while all these are potential threats to the results' validity, the dissertation's research has significantly deepened our knowledge of important topics.

Theoretically, the study's examination of the role of the media in shaping political engagement (wherein I attempt to assess how social norms impact information intake) runs the risk of oversimplification. In contrast, the study has provided insights into the media visibility of women politicians and its potential role in shaping gender gaps in political knowledge; the compound nature of societal expectations and media impact merits further research and investigation.

7.2 Future research

Future research could pursue many different paths; however, I will propose three specific promising areas. First, comparing parenthood directly with other significant life events using longitudinal designs would lead to a more comprehensive exploration of life-long learning and priority re-adjustments as citizens transition from one citizen public to the next. This would equip us better to estimate relative effect sizes. Extending our dependent variables to include issue salience and attitude extremity would further this cause by providing more detailed accounts of attitude formation mechanisms.

Second, the underlying mechanisms driving political attitudes and behaviors in the context of life events remain underexplored. While the effects observed in the present study were smaller than anticipated, this raises questions regarding why certain factors, such as risk perceptions, might not significantly change attitudes. Alternatively, perhaps parenthood does not affect these perceptions, which could explain why general welfare state support was not supported (Rehm, 2016).

Third, we should attempt to unpack the qualitative impact of women in politics, especially as depicted in media. While this dissertation offers insights into the visibility of women politicians in media and its possible role in shaping gender gaps in political knowledge, a deeper exploration of this representation's nuances is warranted. Bridging the gap between feminist scholarship, especially that concerning social role theory and issue-public theory, and the portrayal of women in media can shed light on how gender roles and expectations are crafted and propagated. This could potentially impact our understanding of the broader societal implications of gender representation in media.

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Included papers I-IV

- I Naurin, E., Stolle, D., & Markstedt, E. (2023). The effect of pregnancy on engagement with politics. Toward a model of the political consequences of the earliest stages of parenthood. *American Political Science Review*, 117(1), 311–317.
- II Markstedt, E., Naurin, E., & Olander, P. (2024a). *Parents' political knowledge during pregnancy and after childbirth*. Unpublished manuscript.
- III Markstedt, E. (2024b). *How pregnancy and childbirth shape views of the state and welfare state policies*. Unpublished manuscript.
- IV Markstedt, E. (2024c). Women in the media environment and the gender gap in political knowledge. Unpublished manuscript.