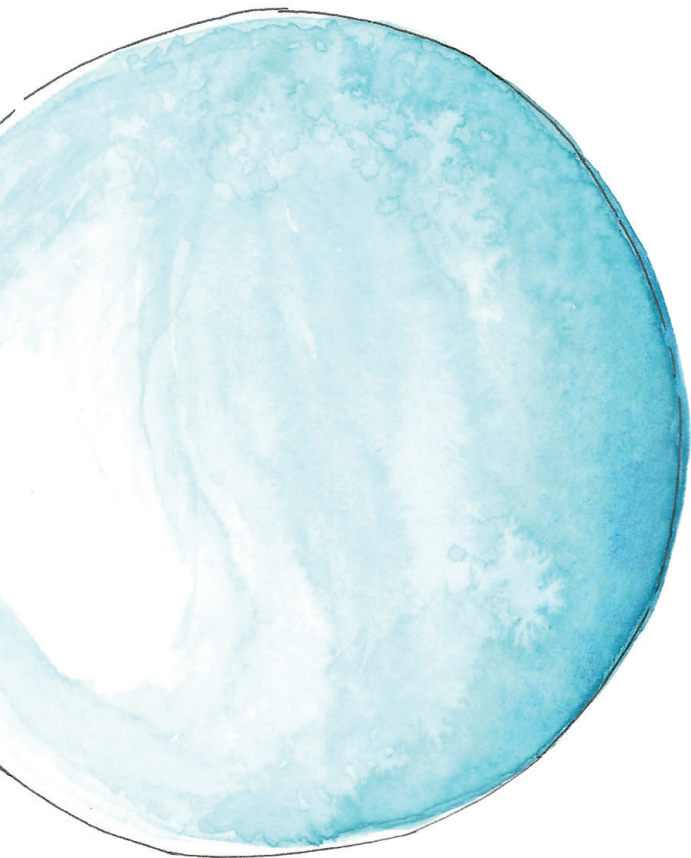# Who's in(to birth) control?

A sociological perspective on contraceptive use

Rozemarijn Dereuddre

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GHENT UNIVERSITY

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LIST OF ABBREVIATIONS

AIDS	Acquired immune deficiency syndrome
CEE	Central and Eastern Europe(an)
DHS	Demographic and Health Survey
DRM	Diagonal reference model
FFS	Fertility and Family Survey
IUD	Intra-uterine device
GGS	Generations and Gender Survey
GII	Gender inequality index
GP	General practitioner
HIV	Human immunodeficiency virus
ISCED	International standard classification of education
LAM	Lactational amenorrhea method
NE	Northern Europe(an)
NUTS	Nomenclature of territorial units for statistics
NWE	Northwest Europe(an)
OR	Odds ratio
SE	Southern Europe(an)
SES	Socioeconomic status
SRHR	Sexual and reproductive health and rights
STI	Sexually transmitted infection
U.S.	United States
WE	Western Europe(an)

LIST OF PUBLICATIONS AND MANUSCRIPTS

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<div align="right">Roeselare, 20 mei 2017</div>

1. INTRODUCTION

The birth control pill has been hailed by many as a symbol of women's freedom and equality (Gupta, 2000; Wajcman, 1991). Its introduction in the 1960s in Western countries, along with the increasing availability of other highly-effective contraceptives (e.g., the intra-uterine device (IUD)) and their rapid uptake, has been credited with making significant steps forward in the advancement of women's rights and agency over their reproductive lives (Kavanaugh & Anderson, 2013; van de Kaa, 2011; Wajcman, 1991). By severing the direct connection between sexuality and pregnancy (Gupta, 2000; van de Kaa, 2011; Wajcman, 1991), the pill enabled women to plan family formation more accurately and to achieve their personal, social, and professional aspirations (IPPF European Network, 2015; Kavanaugh & Anderson, 2013).

It is remarkable to note that more than half a century later, contraceptive use is far from trouble-free in many developed countries (Oddens, 1996). Paradoxically, in advanced economies were effective birth control is considered the default option, a significant proportion of sexually-active women who do not want to become pregnant practice contraception inconsistently, switch from highly-effective to less-effective methods, or abandon contraceptive use altogether (Balbo, Billari, & Mills, 2013; Frost & Darroch, 2008; Grady, Billy, & Klepinger, 2002; Guttmacher Institute, 2008; Moreau, Bouyer, Gilbert, & Bajos, 2006; Vaughan, Trussell, Kost, Singh, & Jones, 2008). As a consequence, unintended pregnancies[1] account for almost half of all pregnancies in Europe, ranging from 34 percent in the Western European (WE) region to 52 percent in the Central and Eastern European (CEE) region (Sedgh, Singh, & Hussain, 2014). Nevertheless, empirical research into European contraceptive behavior remains relatively limited. In the years after the introduction of more-effective contraceptives, scholars had demonstrated the acceptance of the methods, had tackled the fears about sexual immorality, and had concluded that medical contraception was in essence not harmful to health, which resulted in a considerable decrease in research interest in the topic (Oddens, 1996). There is also a lack of systematically collected, standardized representative data about contraceptive behavior, significant gatekeepers and

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[1] When considering unintended pregnancy, it is important to distinguish between unwanted pregnancies (i.e., pregnancies occurring when no, or no more, children are desired) and mistimed pregnancies (i.e., pregnancies occurring earlier than desired) (Santelli et al., 2003, p. 94).

reimbursement policies across the continent (da Silva, 2011). This has left the "contraceptive paradox" insufficiently understood.

The need to study contraception in Western countries has mainly been driven by U.S. scholars, but fruitful studies have been carried out in European contexts as well, although to a lesser extent. The major share of research builds on a demographic approach and examines structural characteristics relating to contraceptive use. Women's socioeconomic status is the focus of attention in many of these studies, although more recent research also includes that of men's (Almeling, 2015; Becker, 1996; Greene & Biddlecom, 2000). The rationale behind the focus on women lies in the gendered nature of contraception (i.e., most methods are female), women's higher burden in the case of unintended pregnancy, and women's traditional roles in the family (Miller & Pasta, 1996; Thomson, 1997). Overall, empirical evidence indicates that socioeconomic advantage relates to higher reliance on effective contraceptive methods, and more consistent use of these (Eeckhaut, Sweeney, & Gipson, 2014; Janevic, Sarah, Leyla, & Elizabeth, 2012; Martinez, Chandra, Abma, Jones, & Mosher, 2006; Mosher & Jones, 2010; Serbanescu, Goldberg, & Morris, 2004; Serbanescu & Seither, 2003; Spinelli, Talamanca, & Lauria, 2000). Specifically, barrier methods (e.g., condoms, diaphragms, or spermicides), oral contraceptives, and IUDs are more likely to be used by the higher educated than by the lower educated. In the event of inconsistent use of the pill, the higher educated are also more likely to use a backup method (Moreau et al., 2006). Furthermore, the employed and those with a higher income are found to consistently use effective methods to a greater extent (Martinez et al., 2006; Moreau et al., 2006; Mosher & Jones, 2010; Spinelli et al., 2000). By contrast, educational level and paid employment negatively associate with not using contraception, natural family planning (e.g., withdrawal, rhythm method), and female sterilization (Anderson et al., 2012; Eeckhaut & Sweeney, 2016; Martinez et al., 2006; Mosher & Jones, 2010; Serbanescu & Seither, 2003; Spinelli et al., 2000). The socioeconomic gradient in male sterilization remains puzzling as the positive relationship between socioeconomic status and practicing vasectomy that has been repeatedly found in U.S. contexts (Anderson et al., 2012; Barone, Johnson, Luick, Teutonico, & Magnani, 2004; Bertotti, 2013; Martinez et al., 2006) is not replicated in European countries (Eeckhaut & Sweeney, 2016).

Other lines of research rely on cognitive theory and attempt to obtain a better understanding of the contraceptive decision-making process, but this research is substantially less developed in terms of contraceptive behavior compared with, for

instance, other preventive health care measures or fertility measures. The health belief model suggests that contraceptive use is determined by the perceived threat of unintended pregnancy (e.g., the subjective assessment of the social and medical consequences of becoming pregnant), a cost-benefit calculation of the barriers and benefits (e.g., the side effects versus the effectiveness of contraception), cues to action (e.g., via contraceptive counseling or a worrying partner), and other modifying and enabling factors (e.g., socioeconomic status or prior experience of abortion) (Hall, 2012). Another example is the theory of planned behavior, which posits that the intention to engage in contraceptive behavior is shaped by a combination of positive and negative attitudes toward contraception/having children, normative beliefs and social pressure with regard to contraception/having children, and perceived behavioral control (i.e., the perception of having the skills and resources to use contraception/to have children) (Liefbroer, Klobas, Philipov, & Ajzen, 2015; Sprecher, 2013; Testa, 2012). These models have also been applied to the use of condoms for disease prevention (Albarracin, Johnson, Fishbein, & Muellerleile, 2001).

This traditional line of thinking considers contraception as a choice located at the individual level (most often the woman), influenced by individual characteristics or intentions, and shaped by the effectiveness of the method. Although successfully delineating how effective and consistent contraceptive use or non-use is guided by socioeconomic status or the motivation to prevent pregnancy, these individual-centered paradigms are insufficient to obtain a full picture of the "contraceptive paradox", as they leave many questions unanswered. Why are the higher educated more likely to switch from the pill to less-effective condom use than their lower-educated counterparts (Grady et al., 2002)? What explains the persistently high levels of natural family planning in many CEE countries, despite the increasing availability of highly-effective fertility control over multiple decades (Frejka, 2008a; United Nations, 2015b)? And, why do the prevalence rates of tubal ligation exceed those of vasectomy in almost all countries worldwide, although both are similarly effective and the latter entails lower financial and physical costs (Shih, Turok, & Parker, 2011)?

Recent developments have reformulated contraceptive behavior as a social practice that results from a complex interaction between roles, responsibilities, expectations, and commitments (Fisher, 2000) rather than as an individual choice in itself. On the one hand, researchers emphasize the dyadic nature of contraceptive decision making. Contraception is mostly used within the context of a relationship, and empirical evidence

confirms that both partners have at least some say in the contraceptive domain (Bauer & Kneip, 2013; Fennell, 2011; Grady, Klepinger, Billy, & Cubbins, 2010; Miller & Pasta, 1996; Testa, 2012). Multiple decision heuristics on how partners decide about contraception have been proposed, often rooted in literature concerning marital power (e.g., Blood & Wolfe, 1960), economic exchange (e.g., Becker, 1991), and gender theory (e.g., West & Zimmerman, 1987). On the other hand, it is increasingly acknowledged that individual and couple decisions are influenced by the sociocultural context in which they are made (Clark, 2006; Corijn, Liefbroer, & Gierveld, 1996; Grady, Klepinger, & Billy, 1993). The reproductive climates in which people live accommodate diverging health care systems, counseling and knowledge to provide information and access, prevailing norms and values concerning fertility, contraception, and abortion, equality in the possibilities for men and women to engage in paid and unpaid labor, etc., and influence the extent to which men and women feel ready, willing and able to use contraceptives (Coale, 1973).

I draw on these efforts to contextualize contraception in order to advance the understanding of the "contraceptive paradox" in European societies. In this way, I aim to go beyond the common assumption that a linear transition toward a "perfect contraceptive society" can be expected, in which less-effective methods logically give way to more-effective methods, and in which people opting for less-effective methods are assumed to be irrational, uninformed, or uncommitted to contraception (Gribaldo, Judd, & Kertzer, 2009; Johnson-Hanks, 2002). The objective of this dissertation is threefold. First, I intend to reach a better understanding of the unilateral focus on the female population with regard to investigating reproductive issues (Chapter 3). To date, research has repeatedly indicated that the inclusion of men in the analysis proves fruitful, as reproductive health is not only a woman's issue (Greene et al., 2006). Second, I explore how the division of contraception in couples can be examined as the outcome of a bargaining process (Chapter 4). Contraception gradually shifts from being an individual's responsibility in the beginning of a relationship toward being a couple's responsibility as it becomes more serious (Fennell, 2011), which makes it sensitive to couple dynamics and interactions. Lastly, I take a closer look at the cross-regional and cross-national variation in reproductive behavior, and how these differences translate into varying contraceptive patterns among European countries (Chapter 5).

All three parts of this objective are translated into specific research aims in Chapter 6. Thereafter, the methodology section discusses the data, measurements, and statistical

techniques that are employed (Chapter 7) to investigate the research questions in the empirical chapters (Chapters 8 to 12). I conclude by reviewing the main findings and limitations, and the suggestions and implications for future research, policy, and health care providers (Chapter 13). Before all of this, however, Chapter 2 provides some insights into the history, developments, and classification schemes of the wide range of contraceptives that are available to us today.

2. OUTLINING THE APPROACH TO CONTRACEPTIVE USE

2.1 A brief history of contraception

Reversible contraception: Toward medical technologies

It seems that the idea of fertility control has always been present to some extent and that a wide range of techniques had already been used in ancient times (e.g., herbal potions, condoms, pessaries, abortions, etc.) (McLaren, 1990; Wajcman, 1991). Nevertheless, the conventional assumption is that couples in pre-industrial societies were the victims of their own fertility, because they lacked the necessary technology to take control into their own hands. Many researchers accordingly mark the invention of the vulcanized rubber condom in the nineteenth century as the factor that made contraceptive practice possible. The use of condoms increased over time, together with reliance on the diaphragm (invented in 1842), douche, and rhythm method. However, it was abstinence and withdrawal that played the major role in the start of the historical decline in fertility rates that characterized Western countries from the end of the 1800s onward (Frejka, 2008a; Harvey, Bird, & Branch, 2003; Santow, 1993).

The 1960s were characterized by a "contraceptive revolution" and are established as the benchmark for the transition toward the dominant use of medical contraception in the West (Frejka, 2008a; Westoff & Ryder, 1977). The first medical technologies were intra-uterine devices (IUDs) (Frejka, 2008a). The original version dates back to the early 1900s and was composed of a contraceptive ring made out of silkworm gut, steel, or other materials. The method was not widely used, and was even considered criminal in many countries (Kaneshiro & Aeby, 2010). The IUD was reinvented in the 1960s by relying on plastics, and subsequently introduced into clinical practice (Family Planning Association, 2011; Frejka, 2008a; Kaneshiro & Aeby, 2010; Oddens, 1996). The first birth control pill, called Enovid, was developed in the U.S. and was initially approved for the regulation of menstrual disorders in 1957 (Bailey, 2010; van de Kaa, 2011). Three years later, the United States Food and Drug Administration approved it for contraceptive purposes. However, it took until the famous case of Griswold versus Connecticut in 1965 – based on the closure of Estelle Grisworld's family planning clinic due to the Connecticut law that banned contraceptive use – before medical contraceptives were permitted in law. In the following years, the pill was quickly legalized

– often stimulated by women's movements – and made available in many other Western countries (Le Guen, Ventola, Bohet, Moreau, & Bajos, 2015; Leridon, 2006).

Over the past half century, multiple generations of IUDs and pills have been developed, leading to the wide array of options that are available today. Both method types suffered from health scares – with regard to the pill, these are often related to blood clots or strokes (Bajos, Rouzaud-Cornabas, Panjo, Bohet, & Moreau, 2014; Furedi, 1999; Watkins, 2012) and with regard to IUDs, to increased infection rates (Kaneshiro & Aeby, 2010; Roepke & Schaff, 2014) – but generally remain widely used in Western contexts (United Nations, 2015b). In the meantime, additional hormonal contraceptive options have been developed – such as contraceptive implants or injections (Family Planning Association, 2010) – although these are used to a lesser extent (United Nations, 2015b).

Table 2.1 provides an overview of the most important types of contraceptives currently in use.

Sterilization: From eugenics to contraception

Sterilization has an ominous history of abuse, and in many countries started as a means of social control before becoming a means of individual freedom (Broberg & Roll-Hansen, 2005; Eeckhaut & Sweeney, 2016). It was introduced in the first half of the twentieth century as a way to prevent people with undesirable hereditary characteristics or people considered incapable of taking care of their children from reproducing (Hemminki, Rasimus, & Forssas, 1997). In Europe, the idea of coercive sterilization is strongly associated with the Nazi period, during which the eugenically "unfit" on mental, moral, or political grounds were involuntary sterilized (Dorbritz & Fleischhacker, 1999). However, other reports of forced sterilization have more recently emerged (Zampas & Lamackova, 2011).

The Nordic part of Europe installed sterilization laws, with eugenics as an important purpose, in the 1930s (Broberg & Roll-Hansen, 2005). Involuntary sterilization constituted part of social reform programs, and aimed at preventing the procreation of "inferior" social groups who were believed to have hereditary low social capabilities (e.g., mentally ill people). The practice was introduced in close consultation with scientific experts, and it was argued that sterilization was a more humane solution than institutionalization, because it restricted reproduction but no other behavior. By the 1970s, forced sterilization for any reason was prohibited (Hemminki et al., 1997), but

Table 2.1 Overview of contraceptive methods [a]

Method type	Specific method	Description	Effectiveness for pregnancy prevention: Correct and consistent use (actual use) [b]	Mechanism	Classification
Natural family planning	Withdrawal, coitus interruptus	Man withdraws his penis from his partner's vagina, ejaculates outside the vagina	96% (73%)		Male method, traditional
	Rhythm method	Avoiding (unprotected) vaginal intercourse during the first and last estimated fertile days	91% (75%)		Female method, traditional
The pill	Combined oral contraceptive pill	Daily pill	> 99% (92%)	Prevents the release of eggs from the ovaries	Female method, modern
	Progestogen-only pill	Daily pill	99% (90-97%)	Thickens cervical mucous to block sperm and egg from meeting and prevents ovulation	Female method, modern
	Emergency contraception	Pill taken to prevent pregnancy up to 5 days after unprotected sex	99%	Delays ovulation	Female method, modern
IUDs	Copper-containing IUD	Inserted into the uterus, lasts up to 12 years	> 99%	Copper component damages sperm and prevents it from meeting the egg	Female method, modern
	Levonorgestrel IUD	Inserted into the uterus, lasts up to 5 years	> 99%	Suppresses the growth of the lining of the uterus	Female method, modern
Implant		Placed under the skin of the upper arm; lasts 3-5 years	> 99%	Thickens cervical mucous to block sperm and egg from meeting and prevents ovulation	Female method, modern
Injectable	Combined injectable contraceptive	Injected into the muscle every month	> 99% (97%)	Prevents the release of eggs from the ovaries	Female method, modern

[Progestogen-only injectable]	Progestogen-only injectable	Injected into the muscle or under the skin every 2-3 months	Thickens cervical mucous to block sperm and egg from meeting and prevents ovulation	> 99% (97%)	Female method, modern
Patch	Combined contraceptive patch	Placed on the skin, releases hormones directly through the skin, replaced weekly	Prevents the release of eggs from the ovaries	Unclear	Female method, modern
Vaginal ring	Combined contraceptive ring	Inserted monthly in the vagina, releases hormones directly	Prevents the release of eggs from the ovaries	Unclear	Female method, modern
Spermicide	Foam, cream, gel, vaginal suppository or vaginal film	Inserted in the vagina before every occasion of sexual intercourse	Substance forms a barrier that damages sperm	82% (72%)	Female method, modern
	Diaphragm, cervical cap	Inserted in the vagina before every occasion of sexual intercourse, used in combination with spermicide	Forms a barrier by covering the cervix and preventing sperm and egg from meeting; the spermicide damages sperm	94% (88%)	Female method, modern
Condom	Male condom	Covering of man's erect penis, every occasion of sexual intercourse	Forms a barrier to prevent sperm and egg from meeting	98% (85%)	Male method, modern
	Female condom	Linings that fit loosely in a woman's vagina, every occasion of sexual intercourse	Forms a barrier to prevent sperm and egg from meeting	90% (79%)	Female method, modern
Sterilization	Male sterilization, vasectomy	Blocks/cuts the vas deferens tubes that carry sperm from the testicles, meant to be permanent	Keeps sperm out of ejaculated semen	> 99% after three months semen evaluation (97-98% without semen evaluation)	Male method, modern
	Female sterilization, tubal ligation	Blocks/cuts the fallopian tubes, meant to be permanent	Eggs are blocked from meeting sperm	> 99%	Female method, modern

Notes. [a] This overview is limited to the methods that are most widely used or that are referred to throughout this dissertation. Therefore, it should not be considered an exhaustive list of available contraceptives; [b] The effectiveness of all methods for pregnancy prevention is based on U.S.-specific data, and the rates refer to the first year of use only (Trussell, 2011).

Sources. European Parliamentary Forum on Population & Development (2017); Trussell (2011); World Health Organization (2016b)

tens of thousands of people – mainly women – had already been involuntarily sterilized. After the exposure of the practice in the 1990s, commissions were formed to examine its extent, and recommendations were made to compensate people whose rights had been violated (Broberg & Roll-Hansen, 2005; Zampas & Lamackova, 2011).

Recently, the practice of involuntary sterilization of Roma women and women with disabilities in communist Czechoslovakia (from the 1970s to the 1990s) and thereafter in the Czech Republic has been brought to light. The last known case dates back to 2007, despite legal changes in the 1990s that should have outlawed the practice (European Roma Rights Centre, 2016). The 1971 Decree on Sterilization legally regulated the medical procedure as a means of birth control, clearing the way for systematic sterilization of these women against their will or without free, informed consent. On the one hand, sterilizations were performed as a part of a caesarean section, or women were presented with the consent forms when in great pain during labor or delivery. On the other hand, women were convinced to undergo a tubal ligation by financial incentives, threats concerning the institutionalization of their children and withdrawal of their social benefits, misinformation about the nature of the procedure, or false justification by doctors presenting it as a life-saving intervention. With some delay, the government acknowledged the violations and took steps to address the numerous complaints from those who had been involuntarily sterilized (Zampas & Lamackova, 2011).

Overall, sterilization became legalized as a form of birth control in many European countries, starting around the 1970s (e.g., Austria in 1974; Germany in 1976; Romania in 1989), but at the same time, the legal regulation remains unclear in many other countries (e.g., Belgium, Bulgaria, and Estonia) (David, 1999a; EngenderHealth, 2002; IPPF European Network, 2015).

2.2 Classification of contraceptive method types

Among scholars who consider the multitude of contraceptive options that are available today – rather than focusing on a yes/no approach toward contraception or studying one particular method in detail – multiple classification schemes have been proposed in order to capture the wide array of contraceptive devices. Two are particularly relevant for this dissertation (see also Table 2.1).

The first is based on the shift toward medical contraceptives, which is often perceived as a transition toward increased female control in contraception (Dalla Zuanna, De Rose,

& Racioppi, 2005; Santow, 1993). Up to the 1960s, many couples relied on condoms or withdrawal to regulate their fertility; methods that were mainly controlled by men or – at most – required both partners' involvement (Le Guen et al., 2015). The condemnation of these male methods was part of the argument of the women's movements that advocated female contraceptives and women's control over their own reproduction (Santow, 1993). After all, men can only access the pill, IUD, etc. when negotiating their use with a female partner (Fennell, 2011). A distinction can thus be made between "male methods" and "female methods".

The second classification is based on effectiveness, as it is fairly straightforward to rank contraception types from less effective to more effective. A commonly made distinction in this regard is between "traditional" and "modern" methods, with the former being considered less effective and the latter more effective (Frejka, 2008a). The generally accepted categorization of traditional methods includes natural family planning, and that of modern methods includes barrier methods (e.g., condoms, diaphragm), hormonal contraceptives (e.g., the pill, injectables), IUDs, and sterilization. It should be noted that this terminology is historically inaccurate.

3. THE MISSING PIECE OF THE PUZZLE: INCLUDING MEN IN THE ANALYSIS

Social scientists who focus on reproduction have mainly studied the female population, a research tradition that stubbornly persists to this day, despite some signs of change (Almeling, 2015; Becker, 1996; Greene & Biddlecom, 2000; Inhorn, Tjornhoj-Thomsen, Goldberg, & la Cour Mosegaard, 2009). Biologically, reproduction is conceptualized as a series of events (e.g., menstruation, pregnancy, delivery, breastfeeding) that occur primarily in women's bodies (Almeling, 2015). Socially, reproduction is located within the female sphere of influence and decision-making domain, given women's traditional mothering and caring roles (Grady et al., 2010). The marginalization of men within the reproductive domain is paralleled by the assumption of male disinterest and disengagement in matters of reproduction, which has led scholars to define them as "the second sex" with regard to reproductive issues (Inhorn et al., 2009). Moreover, as mentioned by Greene and Biddlecom (2000, p. 81), "the predominant approach assumes that men might be interesting to study but are not inherently important for understanding reproductive behavior".

This chapter focuses on the biological and social underpinnings of research into (female) reproduction. Particular attention is paid to the tension existing between the male-dominated medical perspective and the alternative discourses formulated by health sociology and feminist theories. The discussion here is restricted to some of the main and common arguments made by feminists, although the broad spectrum of approaches to women's reproduction is acknowledged. An elaborate discussion on the distinction between the various strands and their arguments would be beyond the scope of this dissertation. To conclude, I use these contrasting lenses to look at contraceptive use.

3.1 A medical discourse

The approach to hysteria[2] as a strictly female disease in the late nineteenth century serves as a prime example of medicine's narrative toward women (Devereux, 2014; Ehrenreich

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[2] Nowadays, hysteria is recognized as a mental disorder in both men and women. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), however, no longer refers to "hysteria" but instead uses "conversion disorder" (American Psychiatric Association, 2013; Devereux, 2014). This is defined as a "functional, neurological symptom disorder" with multiple

& English, 1977; Lupton, 2003; Micale, 1989). Hysteria was defined as a disease of the uterus – also called a disease of "wandering wombs" ("hysteria" is derived from the Greek word for uterus, *hystera*) – and served as a medical metaphor for everything that men thought of as mysterious and unmanageable in their female counterparts. The symptoms were linked to women's volatile and unpredictable nature, their sensibility, and the instability of their minds. Hysteria was totally resistant to medical cure, given that there was no discernible organic basis, but marriage and pregnancy – not coincidentally two corner stones of patriarchy – were recommended as a cure for some time (Bernheimer, 1985; Ehrenreich & English, 1977). Apart from hysteria, almost all female complaints, ranging from a sore throat, to indigestion, to bad posture, were linked to disorders in the uterus or ovaries (Ehrenreich & English, 1977).

Ehrenreich and English (1977, p. 13) summarize the male-dominated medical management of women as follows: "Medicine's prime contribution to sexist ideology has been to describe women as sick, and as potentially sickening to men". In Western contexts, medical science historically defined the male body as "normal" and the female body as "abnormal" (Annandale & Clark, 1996; Gupta, 2000; Mitchinson, 2013). Female reproductive processes were seen as a deviation from the healthy and strong male body, and as an indication of weakness. According to Hubbard (1990), a woman's life cycle can be classified into five debilities: menstruation, pregnancy, childbirth, lactation, and menopause. This perception of female vulnerability – in combination with the idea that women's bodies are overruled by cycles, hormones, and emotional sensitivity – shaped the assumption that female bodies are beyond control and that women are passive victims of their own body (Moore, 2010). The rise and necessity of gynecology as a medical specialization in women's anatomy further underscores the extent to which male and female bodies were viewed as substantially different (Moscucci, 1990).

The pathologization of women's reproductive capacities translated in a preoccupation with abnormalities and an emphasis on negative outcomes; the "output" of women's bodies was quantified mainly by examining mortality or impairment in women and infants (Annandale & Clark, 1996; Oakley, 2016). In response, from the 1960s on, there was a trend toward increasing technological intervention in pregnancy and birth, characterized by a growing centralization of care, extremely high rates of hospital confinements as a "better" alternative to home births, rising rates of Caesarean sections,

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symptoms among which are weakness or paralysis, abnormal movement, or attacks and seizures (American Psychiatric Association, 2013).

etc. (Macintyre, 1980; Oakley, 2016). In this way, reproductive events could be properly controlled and managed (Gabe, Bury, & Elston, 2004).

3.2 Toward an alternative discourse: Cross-pollination between feminist theories and sociology of health and illness

As long as it is only women, not men, who are able to produce and grow children in their bodies, there remains something to be said about being female that naturally connects all women, and distinguishes them from all men (Gupta, 2000). Hence, biological reproduction is an area in which men and women are by definition unequal and therefore, biology served as the baseline to look at male-female differences for a long time. Sociologists interested in reproduction initially worked in collaboration with obstetricians, and the medical perspective on women was thus echoed in social science research; the sociology of reproduction was driven by the Parsonian idea about the "sick role" and unilaterally examined abnormalities related to pregnancy and birth (e.g., complications in pregnancy, low birth weight), thereby often looking at variations between social groups (Annandale & Clark, 1996; Macintyre, 1980; Oakley, 2016).

This situation in which the male-female dimensions in (reproductive) health were neglected changed dramatically during the 1960s and 1970s (Micale, 1989; Moore, 2010). Triggered by the introduction of the birth control pill, this period was characterized by a growing interest in contraception and abortion, pushing aside the focus on perinatal problems (Macintyre, 1980). While the medical profession was not uniform in its opinion about the liberalization of fertility control, the vigorous public debates united sociologists, feminist and women's health movements, and consumer movements in their opposition to the medical establishment (Macintyre, 1980; Oakley, 2016). The sociology of reproduction broadened its focus by including the study of sexuality, reproductive technologies, and the social relations involved into its repertoire, rather than merely looking at reproductive processes such as conception, pregnancy, birth and motherhood (Gabe et al., 2004). This sociological study was further nourished by a plethora of feminist contributions (Oakley, 2016). Despite the wide variety in discourses, a new perspective toward medicine was developed, and was centered around two main themes: the recognition of gendered bodies and the medicalization of the reproductive process.

The social construction of gendered bodies

The distinction between sex and gender – made in an attempt to distinguish biological differences between the sexes from the social and relational differences between men and women (Stoller, 1968) – is key to fully understanding women's reproductive health experiences (Moore, 2010). Feminist theory in particular appropriated the task of showing how bodies are socially constructed by members of a social group in ways that conform to notions of masculinity and femininity (Lorber & Martin, 1998). Gender can thus be considered as a social institution based on social arrangements and cultural beliefs and, moreover, as one of the most significant factors in the transformation of physical bodies into social bodies. By associating women's reproductive bodies with deficits, medical science unintentionally conflated sex and gender (Annandale & Clark, 1996). The "othering" of a woman's body in medicine mirrored women's disadvantages in society, rather than merely reflecting women as a biological entity (Mitchinson, 2013). In other words, the ways in which reproduction is managed reflects women's position in society and within family relationships (Gabe et al., 2004). Moreover, the statements on women having uncontrollable, vulnerable bodies further strengthened the argument to deny them any form of social or political status (Moore, 2010).

The question is raised, however, of whether this led to women's reproductive bodies being an asset or a barrier to their emancipation: two alternative perspectives have been presented (Gupta, 2000). The mainstream feminist discourse up to the mid-1980s took a critical position toward female reproductive capacity (Neyer & Bernardi, 2011). It was argued that women's subordinate position and exclusion from positions of power were rooted in their ability to bear children (Gupta, 2000; Inhorn et al., 2009; Neyer & Bernardi, 2011). From this point of view, becoming a mother served the patriarchal systems exploiting women, and the rejection of motherhood was a necessity in order to obtain gender equality (Neyer & Bernardi, 2011). The French feminist Simone de Beauvoir (1953 [1949]) was one of the main proponents of this stance, labeling reproduction as "slavery". She criticizes the notion of motherhood as a "natural calling" for women, and points out that maternity is never performed in complete liberty.

By contrast, many others emphasize the ability to become pregnant and to have children as a source of female identity or, moreover, as *the* ultimate source of power, given that men's incapacity to bear children makes them in this regard dependent upon their female counterparts (Gupta, 2000; Inhorn et al., 2009). Postmodern and poststructuralist

feminist theories largely fit into this line of thought, although they reject the notion of a "universal woman" (Gupta, 2000). Specifically, they dispute the duality in opposing men and women, as this implicitly or explicitly centralizes reproduction in all women's lives (Annandale & Clark, 1996). Instead, being a mother is seen as only one part of a woman's identity, which does not necessarily implies subordination (Neyer & Bernardi, 2011). Another important addition here is that women are no longer perceived as passive victims, but are granted agency (Annandale & Clark, 1996; Neyer & Bernardi, 2011).

The medicalization of reproduction

Another main theme in the opposition to medical orthodoxy is the struggle for women's control over their own bodies, which is considered a necessary step to improve freedom and autonomy for women as a group (Neyer & Bernardi, 2011). Foucault's *History of Sexuality* (1978) inspired many scholars to understand how medicine exercises power within the reproductive domain (Annandale & Clark, 1996; Moore, 2010). According to Foucault (1978), medical power can be situated in the fostering of life, as opposed to the ancient power of taking lives. He distinguishes two poles around which this power is organized: the disciplining of the body (by optimizing its capabilities and increasing its usefulness) and the regulation of the population (by intervening and regulating biological processes; e.g., births or life expectancy). Sex and sexuality are identified as crucial targets of power; given their "natural" character, they are particularly susceptible to "normalizing" interventions.

Following from this and from other pioneering theories on medicalization – such as Zola's (1972) or Illich's (1976) – advocates of the medical perspective were confronted with sustained critique on their approach toward women's bodies and reproduction (Murphy, 2012), and were accused of generalizing the problems of sick women to healthy ones by medicalizing normal physiological processes (Mitchinson, 2013). Not only the power of the medical profession as such, but also the asymmetrical gendered relationship between the male doctor and female patient were problematized (Gupta, 2000; Wajcman, 1991). An often-cited definition of medicalization is that of Conrad (1992, p. 209), who defines it more in general as "a process by which nonmedical problems become defined and treated as medical problems, usually in terms of illnesses or disorders". Accordingly, reproductive phenomena that are healthy and normal came to be considered as pathological conditions and risky events, and women became

patients, being particularly susceptible to medicalization (Christiaens, Nieuwenhuijze, & de Vries, 2013; Gabe et al., 2004; Gupta, 2000; Wajcman, 1991).

Key to this discussion is how the "medical model" is separated from the "natural model" (Brubaker & Dillaway, 2009). As mentioned, the former is often dominated by male doctors, who approach pregnancy as a medical process that requires medical control to guarantee safety (Comaroff, 1977; van Teijlingen, 2005). This perspective is science-oriented and there is high reliance on standardized procedures. The latter model, also known as the "social model" or "midwifery model", instead considers pregnancy and birth as normal events in a woman's life cycle, which require *some* extra attention in the form of care before, during, and after the birth. The satisfaction of the mothers' needs is brought into prominence. In a more extreme form, this model associates with the back-to-nature movements in the U.S. It is noteworthy that the interpretation of what constitutes a "natural" or "normal" birth is subject to pre-established, socially accepted behavior (Brubaker & Dillaway, 2009). Today, medical birth is so common that it is often perceived as the natural way, whereas the "natural" becomes abnormal for most.

Overall, medical control over everyday bodily experiences is mainly depicted from a negative point of view and it is questioned in whose interests reproductive technologies are developed (Gabe et al., 2004). Many feminists state that women's bodies are reduced to medically manipulable and economically marketable objects (Chokr, 1992; Wajcman, 1991). They represent reproductive technologies as potentially dangerous instruments, employable for patriarchal control over women; stopping their use and further development is hailed as the solution. It is suggested to take pregnancy and childbirth out of the medical domain, for instance by encouraging home birth. Nevertheless, it is safe to say that the medicalization of reproduction also gave rise to salutary effects for sick mothers and babies (Christiaens et al., 2013). The other end of the spectrum accordingly clusters feminists who perceive reproductive technologies as beneficial and possibly empowering to women, and as an extension of their reproductive rights (Chokr, 1992; Wajcman, 1991). Autonomy and self-determination are key to allow women to make their own reproductive choices. The notion of "choice" in this context, however, remains puzzling to many scholars; women's preference for hospital births, for instance, may be a response to the repeated warnings of risks by obstetricians (Oakley, 2016).

Whether viewed positively or negatively, the legitimization of the reproductive domain as an important area of intervention made women dependent on medicine for even the most basic control over their body (Brubaker & Dillaway, 2009; Ehrenreich & English,

1977; Moore, 2010). When looking at childbirth nowadays, it can be noted that pregnancy is monitored through routine clinical appointments, in which ultrasound and other prenatal screening have become an integral part, and that women are encouraged to carefully select their diet and watch their physical fitness (Almeling, 2015; Lupton, 2003; Neyer & Bernardi, 2011). With regard to delivery, the vast majority of women in Western countries – up to almost 100 percent, the Netherlands being the exception that proves the rule – opt for a hospital birth (Euro-Peristat Project with SCPE and EUROCAT, 2013). Furthermore, the ideal rate for Caesarian sections – which is assumed to be somewhere in between 10 and 15 percent (WHO, 2015) – stands in sharp contrast with the high European average rate of 26 percent and the observation that not a single country in the region scores below the upper threshold of 15 percent; scores range from 15 percent in Cyprus to 39 percent in Bulgaria (WHO, 2016). Interestingly, these high numbers have been associated with increasingly vague medical reasons (e.g., failure to progress or presumed fetal compromise) as well as non-medical reasons (e.g., maternal request) for the procedure (Lavender, Hofmeyr, Neilson, Kingdon, & Gyte, 2012). In a similar way, other reproductive processes such as infertility (for example, consider assisted reproductive technologies), premenstrual syndrome, or menopause are increasingly embedded within a medical framework (Becker & Nachtigall, 1992; Bell, 1990; Figert, 2005; Gabe et al., 2004; Greil & McQuillan, 2010; Lupton, 2003; Neyer & Bernardi, 2011; Ussher, Perz, & Parton, 2015).

For now, one final important remark has to be made: the definition of what constitutes a "natural" – as opposed to a medical – approach to reproduction is continuously debated not only by doctors and scientists, but also by women themselves (Brubaker & Dillaway, 2009). Either as a result of free or medically guided choice, women also take part in the translation of their experiences into medical definitions (Gabe et al., 2004).

3.3 The natural woman versus the cultural man

In order to fully capture the context in which the image of women developed, attention should also be paid to the "nature-culture debate" that started in the 1970s (Gupta, 2000). Rather than sticking to the biological and socially constructed female body in order to understand women's inferior position in society, some feminist perspectives additionally focus on the public/private and production/reproduction duality.

It is argued that women's bodies are "crucially anchored in reproduction" (Annandale & Clark, 1996), that their bodies are "finalized for reproduction" (Moscucci, 1990) and, accordingly, that motherhood is innate to women (Neyer & Bernardi, 2011). The many reproductive processes – among which are menstruation and pregnancy – that are characteristic of women's anatomy but not of men's, are assumed to entail that sex and reproduction are more fundamental to women than to men (Moscucci, 1990). Hence, female biology and reproductive capacities gave rise to the idea that women can be related to "the wild" and to being close to nature (Gupta, 2000). This is at odds with the idea of men as embodying the cultural, political, and social spheres. The perception of nature as inferior to culture leads women to be inferior to men, and the perception of culture as aiming to control nature leads men to seek to control women. As a consequence, women were identified as particularly suited for activities in the private domestic domain and men for those in the public domain (Gupta, 2000; Moscucci, 1990).

The distinction between the private and the public sphere lies at the baseline of men's and women's productive and reproductive roles, the gendered division of labor, and their perceptions of themselves and the other sex (Gupta, 2000). Many feminist approaches see the family as the key instrument of women's oppression, and according to the Marxist/socialist line of thinking, this is closely intertwined with the capitalist mode of production (Abbott & Wallace, 1990; Coltrane, 2000; Shelton & John, 1996). It is stated that women's dedication to unpaid work – taking care of their husband, and bearing and raising their children – is a necessity in the continuation of the capitalist system (Abbott & Wallace, 1990; Chafetz, 1999). Moreover, patriarchal culture refers to reproductive differences between the sexes in granting male authority and justifying women's domestic roles (Chafetz, 1999). In this way, it became increasingly obvious that the personal and domestic sphere is also political, and the traditional emphasis in sociology on the state and other public institutions as the main sources of oppression was criticized (Abbott & Wallace, 1990; Oakley, 2016). Nowadays, theories about gender inequality tend to focus on both the organization of production – thereby stressing men's and women's economic positions and their control over economic resources – and the organization of reproduction – mainly looking at childbirth and parenting (Collins, Chafetz, Blumberg, Coltrane, & Turner, 1993). An important aspect of this research has been dealing with the (in)compatibility of productive and reproductive labor; the compatibility between childcare and housework led women to reside in the invisible private sphere for a long time, and also today, despite many "freeing"

reproductive technologies available (e.g., contraception, the sterilized baby bottle), the reconciliation of work and home remains a heavier struggle for women than for men. Chapters 4 and 5 elaborate on the processes of gender inequality in more detail.

3.4 A focus on contraception

The sexual revolution in the 1960s – characterized by the introduction of highly-effective birth control methods and the legislation of abortion in some countries – coincided with the beginning of the new women's movement (Gupta, 2000). Contraception has been interpreted as one of the key instruments leading to the rapid social changes toward more gender equality; the technology enabled women to gain control over their own bodies by severing the direct connection between sexuality and pregnancy (Gupta, 2000; Wajcman, 1991). Moreover, it challenged the traditional definition of femininity that perceived motherhood as all women's destiny (Wajcman, 1991).

At the same time, however, the repeated focus on reproductive technologies as a woman's right and as a prime instrument to gain gender equality blurs the socially constructed relations around which these technologies are developed and that are inherently present (Wajcman, 1991). In the wake of the lively debates and numerous perspectives on women's reproductive capacities and the control over female bodies, reproductive technologies have been described as a "double-edged sword": "On the one hand, they have offered women a greater technical possibility to decide if, when and under what conditions to have children; on the other, the domination of so much reproductive technology by the medical profession and the state has enabled others to have an even greater capacity to exert control over women's lives" (Stanworth, 1987, p. 15). This statement underlines the complexity of the arguments concerning control; increasing women's control over their own fertility paradoxically also reinforces medical control over women's bodies (Gupta, 2000; Wajcman, 1991).

Contraception serves as a clear example of a reproductive technology that is subject to established medical autority and sexual relations (Wajcman, 1991). It is said that the development of the hormonal pill was deliberately delayed for 13 years, due to popular morality, pronatalist policies, and doctors holding a strong resistance against birth control on both moral and medical grounds (Walsch, 1980 in Lupton, 2003; Wajcman, 1991). In the early twentieth century, birth control was for instance linked to promiscuity and prostitution, perceived as dangerous to health, and related to medical conditions

such as sterility or aggressive cancer (Walsch, 1980 in Lupton, 2003). Effective hormonal contraceptives gained medical acceptance over time, as it became clear that they also helped to avoid heavier ethical dilemmas such as unintended pregnancy or abortion (Wajcman, 1991). Moreover, female contraceptives made women primarily responsible for their use and offset the decrease in sexual pleasure related to condoms (Lupton, 2003). The stalled progress in the development of new contraceptives – the major breakthroughs date back to the 1970s – the fact that still nearly all female contraceptives require a prescription and consultation with a professional, and the long-time medicalization may be perceived as a continuation of medical control (da Silva, 2011; Wajcman, 1991; Watkins, 2012).

The question may be raised as to why the overall majority of contraceptives is female, keeping into the back of our minds that even the only effective reversible method available to men – the male condom – was developed for disease protection rather than pregnancy prevention (Wajcman, 1991). According to Becker (1996), multiple biological reasons underlie this imbalance in the development of contraceptives, among which are the fact that women become pregnant, that there are more possibilities to influence a woman's reproductive system than a man's, that it is easier to prevent ovulation or the implantation of one egg per month rather than to prevent the production of millions of sperm, that the woman is considered to be more motivated to prevent pregnancy than her male counterpart, and that women are more in touch with health care facilities (e.g., for prenatal care). These aside, male hormonal manipulation for contraception *did* precede tests in female hormonal manipulation in the early twentieth century (Manetti & Honig, 2010) and large-scale tests *were* carried out after the 1970s (Dismore, Van Wersch, & Swainston, 2016). However, once the female hormonal pill had become established, it was a challenge to equal or improve its qualities in terms of safety, efficacy, and reversibility (Manetti & Honig, 2010), although one might also wonder why new male methods are not measured against less-effective condoms (Dorman & Bishai, 2012).

Nowadays, multiple hormonal options based on the suppression of spermatogenesis as well as non-hormonal options impacting the production, function, and motility of sperm have been developed in the form of, among others, daily pills, regular injections or yearly implants (Dorman & Bishai, 2012). These reach the high bar set by the female methods and are pharmaceutically implementable (Dismore et al., 2016; Liu, Swerdloff, & Wang, 2010; Manetti & Honig, 2010). Moreover, there is a general preparedness and willingness

by many men to use a male hormonal pill when it becomes available – although potential use most likely overestimates actual use – and the majority of women indicate that they would trust their partner to use these contraceptives (Glasier, 2010). Nevertheless, it seems as though the debates on male hormonal contraception are a vicious circle, as the male discourse aims at 100 percent safety from a health perspective (Dismore et al., 2016). However, largely similar side effects have been identified comparable to those of female methods (i.e., acne, fatigue, night sweats, weight gain, aggression, altered mood, change in libido, and reduced testis size), and long-term health effects cannot be tested as long as these contraceptives remain unmarketed (Dismore et al., 2016; Liu et al., 2010). Accordingly, the pharmaceutical industry is not convinced that the availability of male contraceptives will result in a large uptake, and investments in the field have been partly abandoned (Dismore et al., 2016; Dorman & Bishai, 2012).

In addition to the medical developments in contraceptives, the social construction of gendered bodies may have negative consequences for the use of highly-effective hormonal contraceptives. According to Littlejohn (2013), cultural norms about gender and women's bodies may shape women's experiences of hormonal contraceptive side effects. Hence, medically defined side effects such as mood swings, weight gain, headaches, change in libido, and breast tenderness (Huber et al., 2006; Johnson, Pion, & Jennings, 2013; Rosenberg & Waugh, 1998; Rosenberg, Waugh, & Meehan, 1995) seem to be closely related to ideas of idealized femininity (Littlejohn, 2013). The emphasis placed on women's appearance and thinness in Western countries, for instance, may influence their interpretation of the weight changes caused by hormonal contraceptives. Although the weight gain clearly results from the resource vital to prevent unintended pregnancy, the pressure to monitor their bodies to conform to cultural beauty standards and the consequent discomfort related to weight gain make women reluctant to continue using hormonal contraceptives. Interestingly, women living in societies where low body weight is not so highly valued do not perceive weight gain as a disadvantage of hormonal contraceptives.

3.5 Concluding remarks: Integrating the "non-reproductive sex"

The invisibility of men in the medical discourse on reproduction echoes the male dominance that shaped the reproductive framework from the end of the nineteenth century until today (Annandale & Clark, 1996). The fact that their non-reproductive bodies were put forward as the healthy standard, and that reproduction was considered

innate to women, legitimized their lack of involvement in fertility control, birth, childcare, etc. (Annandale & Clark, 1996; Gupta, 2000). However, the many feminist theories focusing on gender have also mainly emphasized women, instead of additionally looking at men (Annandale & Clark, 1996).

It took until the outbreak of the AIDS epidemic in the 1990s to substantially include men in the domain of reproductive health and, more specifically, contraceptive behavior (Becker, 1996; Grady et al., 2010; Inhorn et al., 2009). Since then, scholars, medical professionals, and policymakers have been forced to enlarge their perspective on family planning. In addition, the renowned 1994 International Conference on Population and Development in Cairo helped to pave the way for the inclusion of men by emphasizing the need to promote men's involvement in family planning and reproductive health issues (United Nations, 1995). Overall, it has been increasingly recognized that the *a priori* exclusion of men from reproduction reinforced them not to engage and not to take responsibility in – what is called – a female domain (Edwards, 1994).

Although women remain overrepresented in literature on reproductive health and contraceptive use, the recognition that these are more than just female issues has begun to sink in and empirical research confirms that many men are keen to be involved in reproductive decision making (Fennell, 2011; Glasier et al., 2000; Grady, Tanfer, Billy, & Lincoln-Hanson, 1996; Greene & Biddlecom, 2000). My thesis aims to contribute to this relatively recent research tradition by including men in the examination of contraceptive use. On the one hand, this is accomplished by selecting study samples that contain both men and women[3], thereby acknowledging men as equally important data carriers. This aligns with other work that focuses on the associations between men's individual characteristics and their (partner's) reliance on contraception (e.g., Anderson et al., 2012; Barone et al., 2004; Martinez et al., 2006). On the other hand, it is acknowledged that people's ability to manage their sexual and reproductive lives is dependent on their social relationships (Greene et al., 2006). This is translated into a focus on partnered men and women in all empirical chapters (Chapters 8 to 12), and specific attention paid to how relationship dynamics may relate to contraceptive practice (Chapters 10 to 12). I build on the repeated observation that neither men nor women fully dominate fertility decisions (Bauer & Kneip, 2014; Thomson, 1997; Thomson &

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[3] One of the empirical studies – Gender inequality and the "East-West" divide in contraception: An analysis at the individual, the couple, and the country level (Chapter 12) – is limited to the female population. This is due to data restrictions.

Hoem, 1998; Thomson, McDonald, & Bumpass, 1990) or contraceptive behavior (Bauer & Kneip, 2013; Miller & Pasta, 1996; Testa, 2012), and that contraception is often a source of negotiation and/or disagreement within couples. The following chapter elaborates on the specificities of looking at contraception as a joint couple decision.

4. IT TAKES TWO: ADOPTING A COUPLE PERSPECTIVE

It is argued that contraception gradually becomes a couple's rather than an individual's responsibility when relationships become more serious (Fennell, 2011). Partners' focus tends to shift from contraception as a means to protect themselves from pregnancy or disease in the beginning of a relationship, to how contraceptives can protect the success of a relationship by avoiding unintended pregnancy. Only recently has the recognition of both men's and women's roles in the use of contraception led to increasing attention being paid to the dyadic nature of contraceptive decision making, which has urged scholars to apply theoretical approaches that look at both partners' roles in the reproductive decision-making process (e.g., Bauer & Kneip, 2013; Fennell, 2011; Grady et al., 2010; Miller & Pasta, 1996; Testa, 2012).

A first body of research concentrates on contraceptive use in heterogamous, as opposed to homogamous, partnerships. These studies are mainly carried out in a U.S. context and primarily focus on the onset of sexual activity – by examining adolescents and young adults – or on the termination of childbearing – by examining respondents "at risk" of sterilization. A second upcoming research stream takes this a step further by centering the arguments around a power perspective and by looking at reproductive decisions as the outcome of partners' power differences. The underlying assumption is that contraceptive decision making is likely to be a subject for bargaining, as both partners have different desires, needs, priorities, opportunities, and perceptions of methods of contraception (Forste, Tanfer, & Tedrow, 1995; Grady, Klepinger, & Nelson-Wally, 1999). Grady and colleagues (1999), and Fennell (2011) identify several reasons that explain this argument. Partners are, for instance, exposed to different forms of information; medical professionals tend to direct information about hormonal contraception to women only, whereas men are more socialized to condom use and less to female methods. Furthermore, partners have different opinions on whether or not the man should participate in contraception, the required actions differ across method types (e.g., condoms require men's participation and women can actively participate in their use whereas the pill does not need men's active engagement (Fennell, 2011)), and men and women perceive different health (e.g., side effects) and pregnancy-related consequences (i.e., women are more directly affected by unintended pregnancy) (Grady et al., 1999). In response, the question has been raised as to how partners employ

relationship power to influence, negotiate, and resolve disagreements about contraception (Grady et al., 2010).

In a nutshell, this chapter provides an overview of theoretical considerations on contraceptive use, either as a result of both partners' characteristics or as a joint decision within couples.

4.1 Homogamous versus heterogamous couples

The rich tradition of literature focusing on heterogamy is based on the principle "birds of a flock feather together". The main argument is that people have the tendency to communicate, become friends, and partner with people who resemble them (McPherson, Smith-Lovin, & Cook, 2001). Demographic similarity is linked to shared knowledge and tastes, ease of communication, and other features that facilitate companionship. Applied to the domain of contraception, two hypotheses are put forward (Bean, Williams, Opitz, & Burr, 1987). First, one could start off from a strain perspective, assuming that heterogamous partnerships are characterized by higher levels of strain and tension compared with homogamous relationships. Differences in maturity, sexual histories and experiences, and planning for sexual activity might hamper comfort in communication and agreement about contraceptive use (Ford, Sohn, & Lepkowski, 2001; Kusunoki & Upchurch, 2011; Sprecher, 2013). Moreover, the discrepant characteristics of the two partners might impose an unequal distribution of power, resulting in one partner having more say in the decision-making process than the other. Empirical evidence supports this hypothesis; it is shown that asymmetry in age, race or ethnicity, and education is associated with more non-use of contraception, and lower reliance on condoms, hormonal methods and dual use (Ford et al., 2001; Kusunoki & Upchurch, 2011; Manlove et al., 2011; Manning, Longmore, & Giordano, 2000; Mercer et al., 2009; Sprecher, 2013), and with less consistent contraceptive use (Manlove, Ryan, & Franzetta, 2007).

With regard to sterilization, couples go through a two-step decision-making process: they first decide to terminate childbearing and to opt for sterilization as fertility control, and they next negotiate which partner will undergo the procedure (Bumpass, Thomson, & Godecker, 2000; Forste et al., 1995). Accordingly, male and female sterilization are generally perceived as competing strategies (Eeckhaut, 2015). Dissimilarities in partner characteristics and lack of communication about contraception seem to urge women to

choose the default option: taking contraceptive responsibility themselves by choosing tubal ligation rather than asking their partner to opt for a vasectomy (Miller, Shain, & Pasta, 1991). Research confirms that couples characterized by age or educational differences, relative to those with partners having a similar age or level of education, show an increased likelihood of choosing tubal ligation over vasectomy (Bumpass et al., 2000; Forste et al., 1995; Kaufman, 1998).

Second, the selectivity perspective posits that people engaging in a heterogamous partnership can be considered as social innovators and as more liberal (Bean et al., 1987). Given their "unconventional" partner choice, heterogamous couples are expected to be more tolerant regarding innovative behavior, including innovative contraceptive options. Vasectomy serves as an example of fertility control that can be perceived as being "off the beaten contraceptive track"; the observation that the prevalence of female sterilization exceeds male sterilization in most countries remains puzzling to researchers, but it is assumed that couples who choose vasectomy are less traditional and more egalitarian (Miller et al., 1991). Empirical support for this thesis is scarce in heterogamy literature, however, links with this argument can be detected in power research (see below).

Overall, this research yields important insights and is a substantial first step toward looking at contraception from a couple perspective. Although the power argument is often raised as one possible post-hoc explanation as to why heterogamous couples use less (or less-effective) contraception, scholars have held on to differential partner characteristics as the focal theoretical argument, rather than paying attention to the underlying dynamics and interactions of the decision-making process.

4.2 A power perspective

Unraveling the power concept

In defining power, the Weberian interpretation has been of major importance. Weber (1925 in Wallimann, Tatsis, & Zito, 1977, p. 232-233) states: "Within a social relationship, power means every chance (no matter whereon this chance is based) to carry through the own will (even against resistance)". Multiple aspects of this definition have been picked up, elaborated on and/or criticized by other scholars, of which three are discussed here: power as relational ("within a social relationship"), power as a

capacity ("every chance to carry through"), and the inherent notion of conflict ("carry through the own will even against resistance").

First, power rests on the existence of a relationship; it should be perceived as an "asymmetrical social relation" and thus as a relational rather than an individual characteristic (Wrong, 1988, p. X (Roman numeral 10)). Furthermore, it should not be perceived as a resource as such, but as the mobilization of resources in order to pursue specific goals.

Second, power is seen as a capacity, as potential, and as dispositional; it is important to take into account not only the actual performance of power, but also the capacity to use it (Wrong, 1988). For instance, an unbalanced division of unpaid labor in households in which the man holds most power may result from the husband's preference for a traditional division (man's use of power) as well as from the wife not asking for change in anticipating her partner's negative reactions (man's capacity to use power) (Komter, 1989). Inspired by Bachrach and Baratz (1963), Lukes (1974) identifies "anti-behavior" or the capacity for non-decision making as an additional important element of power. It is argued that the actor with the most power can either opt to use this power to make a decision, or to *not* make a decision, which passes responsibility to the actor with the least power.

Lastly, criticism has originated from the notion of conflict in Weberian (and other) conceptualizations of power[4]. According to Lukes (1974, p. 23), these entail "that actual conflict is necessary to power. But this is to ignore the crucial point that the most effective and insidious use of power is to prevent such conflict from arising in the first place". In game-theoretical terms, definitions of power including conflict as a necessity assume a zero-sum understanding (Read, 2012; Wrong, 1988). This entails that one partner's gain is at the expense of an equivalent loss for the other partner. By contrast, the argument is raised that power might increase mutual gains or losses for the parties involved, or might be perceived as a variable-sum game. Parsons' (1957, 1963) work has been put forward as pioneering for this perspective; he looks at power as a generalized resource that engenders a result exceeding the mere sum of what the separate actors add to the equation.

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[4] However, some scholars, such as Wrong (1988), dispute that Weber's original definition automatically connects power with conflict. He argues that many following Weber mistakenly make this assumption.

Power in family sociology

The integration of the power concept in family sociology – in terms of "family power", "conjugal power", or "marital power" – is mainly for the purpose of explaining inequalities in the division of paid and unpaid labor among partners. As Berk (1985, p. 12) argues: "household labor (largely undefined) is characterized as a *domain*, a *sphere of interest*, or a *locale* for the exercise of power, decision making, and conflict". Specifically, the observation that women performed, and are still performing, the largest share of housework has puzzled scholars for a long time (Brines, 1993; Coltrane, 2000; Lachance-Grzela & Bouchard, 2010; Shelton & John, 1996).

It is generally acknowledged that gender is the prime determinant – although this is not always explicitly mentioned, but instead a derivative of the arguments – of the allocation of labor in households, but justifications for this statement widely diverge (Coltrane, 2000; Lachance-Grzela & Bouchard, 2010). Three streams of theoretical considerations on the division of labor can be distinguished: economic exchange models, gender perspectives, and time-availability theory. The close intertwinements between housework and reproductive labor – both located in the private home and identified as a female sphere of influence – urged some scholars to apply these theoretical lenses to contraceptive use as well. Table 4.1 provides an overview and summarizes the main arguments per stream. Here, I limit the discussion to the approaches that have been used to explain contraceptive use, thereby first elaborating on the main ideas for each relevant perspective and then outlining how it has been used to take a new look at contraception.

The first set of theories starts off from an economic exchange model and is based on the idea that households are governed by specific, gender-neutral rules (Brines, 1993; Coltrane, 2000). Gary Becker's (1991) human capital theory (which is linked to the "New Home Economics" approach) depicts marriage as a production unit, in which time is carefully allocated. He posits that individuals try to maximize household utility by optimally investing two types of human capital: paid and unpaid work. Households are most efficient and productive if one partner specializes in labor market work whereas the other engages in domestic activities. Because women are biologically determined to bear children and labor market discrimination against women raises men's relative earning potential, it follows logically that women should invest in the home and men in paid work. Becker pays particular attention to fertility; the production and rearing of children is perceived as the main purpose of each household. Children are seen as a

Table 4.1 Theoretical considerations of the division of labor and their application to contraceptive use

Theoretical framework [a]	Main arguments	Application to contraceptive use: Hypotheses [b]
(Quasi) economic exchange models	**Housework allocation is determined by gender-neutral exchange rules (Brines, 1993)**	
Human capital theory	The organization of a household aims to maximize its utility; one partner (usually the man) specializes in paid labor and the other partner (usually the woman) in unpaid labor (Becker, 1991)	Contraceptive use aligns with the gender-specific division of labor; given that fertility and childcare lie in the female interest sphere, women are also primarily in charge of decisions about contraception (e.g., Bauer & Kneip, 2013; Fennell, 2011)
Relative resources	The division of housework is the outcome of a bargaining process based on partners' external resources; the partner with most relative resources has most power (Blood & Wolfe, 1960)	The partner with most relative resources has the final say in the contraceptive decision-making process (e.g., Bauer & Kneip, 2013; Bertotti, 2013; Grady et al., 2010; Stolley, 1996)
Economic dependency model	The division of work is based on a household labor contract; housework is provided in return for economic support (Brines, 1993, 1994)	-
Gender perspectives	**Housework allocation is used as a means to display gender accountability (Brines, 1993)**	
Gender ideology	The division of labor is based on both partners' gender-role attitudes; traditional attitudes relate to a traditional division of tasks, egalitarian attitudes to a more equal distribution (Lachance-Grzela & Bouchard, 2010; Shelton & John, 1996)	Traditional gender role attitudes go hand in hand with the assumption that women are responsible for the home sphere and thus also for contraceptive use (e.g., Grady et al., 2010; Shearer, Hosterman, Gillen, & Lefkowitz, 2005; Stolley, 1996)
Gender construction	The division of housework reflects partners' gender display; men and women (re)produce gender identities through interaction (West & Zimmerman, 1987). Men affirm their male identity by rejecting housework, women conform to their female identity by performing household tasks	Contraception is used as a means to do gender, either as part of the female identity (e.g., Bertotti, 2013) or as part of the male identity (e.g., Fennell, 2011; Gribaldo et al., 2009; IPPF, 2012)
Compensation	Men and women compensate for non-normative gender behavior by exaggerating their gender identities in other domains (Greenstein, 2000; Willer, Rogalin, Conlon, & Wojnowicz, 2013)	Low-status men reject contraceptive use in order to protect their masculine identity; high-status women perform contraception to reassert their feminine identity (e.g., Bertotti, 2013)

| Maternal gatekeeping | Women are gatekeepers for the domestic domain by excluding men from housework and childcare (Allen & Hawkins, 1999; De Lucae, 1995) | Women engage in contraceptive gatekeeping by blocking men's participation in contraception and contraceptive decision-making (e.g., Fennell, 2011) |
| Time availability | **Housework allocation is derived from the time each partner has available; the partner who spends the most time in paid work will devote the least time to domestic tasks (Coltrane, 2000; Lachance-Grzela & Bouchard, 2010)** | - |

Notes. [a] The theoretical frameworks might be named differently among various studies, but the underlying mechanisms are the same; [b] The table is restricted to hypotheses based on previous research into contraceptive use, which have been empirically tested. Of course, other plausible hypotheses could be added: for instance, in contrast to the gender construction approach, the alternative hypothesis of contraception as part of the male identity was not examined in terms of compensating gender behavior deviating from the norm.

consumption good comparable with other durable goods, and are assumed to also affect household utility. Children-as-a-commodity are both produced and consumed by households through the use of market purchases (e.g., childcare facilities) and own time (e.g., investing time as a parent at home).

This gendered division of labor, with men traditionally focusing on the public sphere and women managing the domestic sphere, is also reflected in the perception of contraception as a female domain (Fennell, 2011). It is assumed that women are especially suited to make decisions in their sphere of interest – the home and family – and that men will dominate decision making in theirs – the public arena (Jansen & Liefbroer, 2006). In other words, as a result of specialization, men and women hold power and control within their own domain (Fennell, 2011; Jansen & Liefbroer, 2006). This rationale was used for a long time as the prime argument to exclude men from study samples when investigating reproductive issues (Miller & Pasta, 1996; Thomson et al., 1990). A qualitative study carried out in the U.S. found confirmation for the hypothesis; men generally reported that the ultimate decision making concerning contraception was up to their partner, even if they were engaged in the process (Fennell, 2011). Bauer and Kneip (2013) also tested this argument by examining whether women's desire for children alone – as a part of their decision domain – was enough to engage in proceptive behavior, or whether men's desire also influenced the use (or non-use) of contraception. They found symmetrical effects from both partners' desires; a result that suggests that men are also involved in childbearing decision making, and thus does not support the "sphere-of-interest heuristic".

Blood and Wolfe (1960) laid the foundations for a second type of exchange model: the relative resource theory. This framework relates to the previously mentioned heterogamy literature, in that it focuses on partners' differential socioeconomic characteristics or "resources", but adds that couples actively use these resources to negotiate (Brines, 1993). Basically, it is posited that the division of labor in a household is the outcome of a bargaining process that reflects the external resources each partner brings into the relationship (Lachance-Grzela & Bouchard, 2010; Shelton & John, 1996). Education, income, and other resources are believed to grant decision-making power; the more the resources, the higher a partner's power. Moreover, women's economic power in particular is seen as key to having control in their relationship and other aspects of their life (Blumberg & Coleman, 1989). It is important to note that this perspective pinpoints

housework as a burden that each partner aims to bargain his or her way out (Lachance-Grzela & Bouchard, 2010; Shelton & John, 1996).

The question has been raised as to whether contraception – or "fertility work" – can be considered a specific form of domestic labor, related to partners' relative resources (Bertotti, 2013). A few scholars have found evidence for this suggestion. Grady and colleagues (2010) show that the partner with the highest relative level of education or income has the most influence in the contraceptive decision-making process. Along the same lines, Bauer and Kneip (2013) demonstrate that both partners' childbearing desires influence contraceptive behavior, but in the case of disagreement, the desire of the partner with the higher bargaining power affects the decision to a larger extent. Bertotti (2013) and Stolley (1996), however, show contrary results with regard to sterilization. They hypothesized that women with higher relative resources would employ them to persuade their partner to have a vasectomy, as female sterilization entails higher physical and financial costs than male sterilization, but instead found that women's higher relative resources relate to practicing tubal ligation[5].

Overall, these theoretical models based on economic exchange principles have received abundant criticism, both from insiders and outsiders. Some economists and sociologists have called into question the idea that tastes and preferences concerning housework are irrelevant and remain constant among households (Becker, 1991; Coltrane, 2000). Hakim's (2002) preference theory for instance states that women's preferences concerning paid and unpaid labor are important in the organization of a household. Women may be either adaptive (preferring to combine family and work without giving clear priority to one or the other), work-centered (preferring to fit family life around work), or home-centered (preferring to prioritize the home). Another critique is that housework is considered a disutility in the human capital theory and as unpleasant in the relative resource theory; this ignores that couples might derive utility from the enjoyment of cooking a meal or satisfaction from performing tasks (Berk, 1985; Coltrane, 2000;

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[5] In addition to relative resources, bargaining power can also be derived from partners' interest in maintaining their relationship (Sprecher, Schmeeckle, & Felmlee, 2006; Waller, 1937). This is referred to as "the principle of least interest"; the partner who is least emotionally invested is considered to be more powerful, the partner who is most involved as less powerful. With regard to contraceptive decision making, previous research confirms that the partner with most relationship alternatives or with the lowest commitment has the greatest say in contraceptive choice (Grady et al., 2010). Among American adolescents, Tschann et al. (2002) also found that those who were less emotionally involved in their relationship were more likely to dominate decision making on condom use.

Ferree, 1991). The main debate, however, focuses on the modest empirical evidence supporting these exchange models, as they are not able to explain why women with more earning potential still perform the vast majority of domestic labor (Lachance-Grzela & Bouchard, 2010). This led scholars to look beyond the assumption that the performance of tasks is only about the housework that needs to be done (Coltrane, 2000). The hypothesis of gender neutrality is challenged and the argument that unexplained gender differences are "residues of tradition" is questioned (Brines, 1993, 1994). Instead, the importance of incorporating a gender component, and social and cultural relations is highlighted (Coltrane, 2000).

This brings us to the second set of theories, which approach housework as a gender issue (Brines, 1993). Despite the different emphases across perspectives, all start off from the idea that "gender [is] at the heart of exchange between women and men, where ongoing behavioral displays of masculinity and femininity become routinized within the institution of marriage" (Brines, 1993, p. 331). Early versions of gender perspectives focus on socialization in childhood; it is argued that children are socialized into "appropriate" male and female roles, in line with prevailing perceptions of how men and women ought to behave properly (Bianchi, Milkie, Sayer, & Robinson, 2000; Chafetz, 2001; Lachance-Grzela & Bouchard, 2010). Accordingly, men and women develop gendered personalities and preferences (Coltrane, 2000).

The gender ideology perspective builds on this argument by focusing on the way in which people identify themselves with regard to family roles that are traditionally linked to gender (Greenstein, 2000). A household's allocation of labor reflects the gender ideologies of both partners; specifically, men and women can be positioned on a continuum, ranging from adhering to traditional gender role attitudes, where a male breadwinner/female homemaker model is preferred, to favoring egalitarian attitudes, where partners consider themselves more equal in sharing paid and unpaid work (Davis, Greenstein, & Marks, 2007; Greenstein, 2000). It is assumed that more-egalitarian couples will divide housework more equally: men with egalitarian attitudes will be more prone to engage in domestic tasks, and women with egalitarian attitudes will perform less housework than traditional women (Coltrane, 2000; Lachance-Grzela & Bouchard, 2010; Shelton & John, 1996).

Traditional attitudes about gender roles in marriage bring us back to male and female influence spheres in decision-making power, with women being primarily responsible for the home, the family, and therefore also contraceptive use (Grady et al., 2010). For

reversible methods, Grady and colleagues (2010) do not find straightforward evidence to support this thesis, whereas Shearer et al. (2005) confirm that women with more-traditional gender role attitudes perceive greater barriers to the use of male condoms. With regard to sterilization, Stolley (1996) indicates that wives' traditional gender role attitudes are associated with a higher likelihood of practicing tubal ligation, whereas wives with egalitarian attitudes are more likely to convince their partner to opt for a vasectomy. No significant relations are found for men's gender role attitudes and sterilization.

The gender construction perspective instead stresses the gendered meanings that men and women take from the performance, or non-performance, of domestic tasks (Lachance-Grzela & Bouchard, 2010). Berk (1985) defines households as "gender factories"; men and women "do" gender to (re)produce and reinforce respectively their male and female identity through interaction (West & Zimmerman, 1987). Accordingly, the observation that men and women fulfill different tasks at home may be perceived as a display of their gender, in line with appropriate gendered behavior (Coltrane, 2000; Shelton & John, 1996). Whereas women meet their feminine identity by carrying out household chores, men express their masculine identity by resisting doing them (Lachance-Grzela & Bouchard, 2010). The compensation approach adds that gender display will be particularly enacted – and even exaggerated – in order to neutralize counter-normative gender behavior (Greenstein, 2000; Willer, Rogalin, Conlon, & Wojnowicz, 2013). Breadwinner wives or dependent husbands revert to traditional activities in other domains – for instance by respectively performing all the housework or rejecting all tasks – to compensate and reclaim their gender identities (Brines, 1993, 1994; Greenstein, 2000).

It can be assumed that contraception is also a mechanism of gender construction and compensation (Bertotti, 2013; Fennell, 2011). On the one hand, one might expect that women's contraceptive responsibility and men's rejection of being engaged in contraceptive use may be a way to confirm their gendered identities (Bertotti, 2013). With regard to sterilization, men with a subordinate status to their partner will avoid undergoing a vasectomy as a way to reassert their masculinity. At the same time, high-status women "do" gender by being sterilized themselves. On the other hand (but often to a lesser extent), men might also perceive contraceptive use as a part of their masculine role (Fennell, 2011). Using condoms has been identified as a task for a responsible partner (Fennell, 2011; RFSU, 2013), whereas the successful performance of withdrawal

has been linked to male bravado, prowess and discipline, intimacy, and a woman's trust of her partner (Gribaldo et al., 2009; IPPF European Network & UNFPA, 2012).

The final research stream can be considered a spin-off of the "doing gender" approach, given that it also starts off from the social construction of gender. However, in contrast to the basic notions of the previous perspectives, it begins from the observation that many men *are* willing to engage in housework and childcare, but that they are confronted with structural, cultural and personal constraints (Allen & Hawkins, 1999). The theory pinpoints the way in which women are gatekeepers for the domain of the family as the prime determinant (Allen & Hawkins, 1999; De Luccie, 1995). Specifically, men's opportunities to learn and grow in domestic labor are limited, as their partner assumes beforehand that they will not be able to do it "right". Moreover, women see their own accountability for the domestic domain as an indication of being a good mother.

Likewise, it is rarely assumed that women themselves might raise barriers to men's participation in the contraceptive domain (Greene & Biddlecom, 2000), but women do seem to perform "contraceptive gatekeeping" (Fennell, 2011). Rather than focusing on the burden of being responsible or on the negative side effects, many women prefer to be in charge of contraception, both in terms of actually using the method and controlling the negotiations about it. Accordingly, men might have the perception that their involvement in contraception is a matter of whether their partner permits them to be engaged, or not.

Measuring family power

The plethora of arguments linked to power pinpoint its complexity and the need for a multidimensional operationalization. The concept has shown to be difficult to empirically investigate, given the impossibility to directly measure "power" in itself (Halstead, De Santis, & Williams, 2016; Safilios-Rothschild, 1970). Instead, indirect measurements such as antecedents, consequences and related concepts are relied on.

Cromwell and Olson (1975) offer one of the most prominent views on how to look at marital power. They distinguish between three power domains: power bases, power processes and power outcomes. The first, power bases, concerns partners' available resources with which to influence their counterpart. This dimension is at the baseline of (quasi) economic exchange models, which typically look at educational attainment, income, occupational status, and the like as sources of resources or power (Becker, 1991;

Coltrane, 2000; Lachance-Grzela & Bouchard, 2010; Shelton & John, 1996). However, normative or other non-economic indicators, such as gender role attitudes or the identification of gendered interest spheres, might also be identified as resources (Coltrane, 2000; Lachance-Grzela & Bouchard, 2010; McDonald, 1980; Shelton & John, 1996). The second domain, power processes, refers to the actual interactions that family members use to gain control (Cromwell & Olson, 1975). This includes, among other things, assertiveness, compromises, silence, talking time, or negotiation, and is assessed by means of direct observation or measurement of interaction (Gray-Little & Burks, 1983; Mannino & Deutsch, 2007; McDonald, 1980). The third domain, power outcomes, focuses on the outcome of the decision-making process, addresses which partner makes the final call, and thus refers to "who wins" (Cromwell & Olson, 1975). Measuring observable or self-reported decisions has been put forward as one strategy to examine power outcomes (Blood & Wolfe, 1960; Tschann et al., 2002). The division of housework is a prime example of a power outcome, considering the assumption that the less-powerful partner performs the largest share of the tasks (Berk, 1985; Lachance-Grzela & Bouchard, 2010; Shelton & John, 1996). Based on the overview of the recent couple literature provided above, this dissertation also identifies contraceptive use, and the division of contraceptive use among partners, as an outcome of men's and women's power. Despite the substantial overlap between the three power domains, most research can be classified into one of them (Gray-Little & Burks, 1983).

The tendency in previous research has been to examine how power bases influence power outcomes. Nevertheless, power outcomes may equally well serve as important proxies for understanding relationship dynamics (Berk, 1985; Davis & Greenstein, 2013) and investigating other outcomes. This statement echoes the definition of power as a relational characteristic (Wrong, 1988). Rather than limiting our focus to resources – or the characteristics of individuals – examining the division of housework, control over decision making, etc. as relationship properties might enable us to look at power from a different angle (Davis & Greenstein, 2013). More specifically, researching power outcomes might not only provide more insight into the content and context of a household, but might also shed light on the broader partnership processes at work.

4.3 Concluding remarks: Negotiating contraceptive use

Previous research has increasingly paid attention to the investigation of contraceptive use as a couple decision, although most studies limit their focus to differential partner

characteristics rather than also looking at the ways in which decisions are made through interaction. Of particular relevance is the abundant literature on the division of labor, and the application of its theoretical frameworks to contraceptive behavior. The integration of a couple perspective, however, comes with some limitations that should be kept in mind. First, it proves difficult – or even impossible – to disentangle the gendered character of contraceptive decision making from broader gendered relationship patterns (Fennell, 2011). For instance, women's involvement in family planning can be linked to the more general perception of planning skills as a female characteristic. Or, men's difficulty in communicating about contraception may fit into a broader pattern of women being more at ease when talking about sexual issues.

Second, it is difficult to obtain a clear view of how power precisely relates to contraception. Is the use of contraception an indication of a partner's lower or higher power? The former reflects the notion of contraception as a burden and aligns with what Snowden (1985 cited in Walsch, 1997, p. 89) argues: "The methods of fertility regulation from which most couples choose represent a choice among unpleasant alternatives. The choice is not so much a positive discrimination but a negative one, in that the methods not chosen are even more disliked than the method that is chosen. The contraceptive methods most people use are therefore the least unpleasant of an unpleasant set of alternatives". Considering contraception as another household chore and placing contraceptive use in the domain of the less-powerful women – as most theoretical considerations discussed above do – largely adheres to this hypothesis. Alternatively, contraceptive use might also be perceived as an indication of a person's greater power. Several decades ago, the contraceptive pill symbolized women's freedom and paved the way for rising gender equality (Gupta, 2000; Wajcman, 1991). Accordingly, women might prefer to keep control and to exclude men from "their" contraceptive domain (Fennell, 2011; Greene & Biddlecom, 2000). It should be remembered that this ambivalence is in line with the parallel increase between medicine's and women's control over the female body (Gupta, 2000; Wajcman, 1991).

Being aware of these shortcomings, I rely on different constellations of the theoretical frameworks presented above in order to formulate hypotheses and to interpret couples' contraceptive use. Particular attention is paid to different methods types, thereby looking at variation in contraceptive efficacy and/or distinguishing between male and female contraceptives. To the best of my knowledge, attention to this gendered division of contraception is limited to a minority of studies. Becker's (1991) "New Home

Economics" approach is put forward in Chapter 10; the relative resource theory and the gender perspectives in Chapters 11 and 12.

5. THE REPRODUCTIVE CLIMATE: LOOKING AT CROSS-REGIONAL AND CROSS-NATIONAL VARIATIONS

Couple decisions on contraceptive use are not negotiated within a vacuum; instead, it is of major importance to recognize the influence of the sociocultural context in which these decisions are made (Clark, 2006; Corijn et al., 1996; Grady et al., 1993). A macro-level perspective is based on the idea that structural and cultural factors influence individual and couple behavior, and has proved fruitful to reach a better understanding of outcomes (Coltrane, 2000; Lachance-Grzela & Bouchard, 2010).

This chapter aims to shed some light on the reproductive context across the European continent and how it shapes contraceptive behavior. I successively outline the variations in reproductive health and care, fertility, gender equality, and induced abortion. Subsequently, I concentrate on contextual differences in the use of contraception. Throughout the chapter, specific attention is paid to the "East-West" dichotomy, wherein the "East" refers to the former socialist countries and the "West" includes the Northern European (NE) and Western European (WE) countries. It is remarkable that many cross-national studies that include a wide range of countries do not pay explicit attention to the unusual situation of the post-communist countries, as it seems that the most significant health gap in Europe is found along the "East-West" divide rather than between other typologies of countries (Monden & de Graaf, 2013). The Iron Curtain, subsequent to World War II, separated the countries in the "Soviet sphere" from the rest of the West (Frejka, 2008b). For more than forty years, Central and Eastern European (CEE) countries were ruled by authoritarian, centrally planned governments, and characterized by political, economic and social developments that fundamentally differed from those in Western countries. The inheritance of the Soviet period and its collapse in 1990 remains visible to this day; deteriorating health behavior (e.g., heavy smoking or drinking), lacking resources in the health care system, and social stagnation and disorganization in CEE have been linked to higher levels of mortality and lower levels of self-perceived health (Carlson, 1998; Olsen & Dahl, 2007). This does not mean that the CEE countries should be necessarily considered as "one bloc"; it is important to also recognize that each country has its own specificities with regard to the reproductive climate (Berdzuli, Rossi, & Zlidar, 2009; Brzozowska, 2015; Ferrarini & Sjoberg, 2010; Szelewa & Polakowski, 2008; Tang & Cousins, 2005). The country-

specific tables, figures, and discussions are limited to the countries that are studied in the empirical part of the dissertation[6].

5.1 Reproductive health and care

Reproductive health: A general picture

Table 5.1 summarizes some desciptives concerning four relevant reproductive health indicators: maternal and neonatal mortality, adolescent fertility, and HIV. Two observations are noteworthy. First, all countries show lower mortality ratios and lower adolescent fertility rates over time. The decline in maternal mortality in many CEE countries is mainly explained by the lower number of abortion-related deaths (David, 1999a). Another pattern is found for the rate of new HIV diagnoses, which increases in most countries. In Northwest Europe (NWE), the declines in prevention funding and in the frequency of prevention campaigns – referred to as "prevention fatigue" – contributed to some increase in unsafe sexual behavior (Matic, Lazarus, & Donoghoe, 2006). In CEE, the outbreak of the epidemic occurred later (around the mid-1990s) than in Western countries, and was triggered by the political and economic reforms, and increases in poverty, poor health, and drug use following the fall of the system in 1990. Estonia, Georgia, and the Russian Federation show the largest increase in new HIV diagnoses. Second, all CEE countries used to score higher on the mortality indicators and the adolescent fertility rates than their WE counterparts, but not for HIV diagnosis rates (see the columns for 1990 or 1994). The more recent data (see the columns for 2011 or 2015) indicates that some of them caught up in terms of maternal and neonatal mortality, but that the region remains worse off when looking at the overall reproductive health picture, also with regard to HIV infection rates.

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[6] For CEE, this includes Bulgaria, the Czech Republic, Estonia, Georgia, Lithuania, Poland, Romania, and the Russian Federation; for WE and NE, this includes Austria, Belgium, France, Germany, and Norway. All these countries are examined in two or more of the empirical chapters. Five countries that are only briefly addressed in Chapter 12 – Albania, Armenia, Azerbaijan, Moldova, and Ukraine – are not included in the current chapter.

Table 5.1 Reproductive health indicators [a]

	Maternal mortality ratio per 100,000 live births [b]		Neonatal mortality rate per 1000 live births		Adolescent fertility rate, births per 1000 women aged 15-19		New HIV diagnoses rate per 100,000 people	
	1990	2011	1990	2015	1990	2015	1994	2015
Northern and Western Europe								
Austria	[8]	[4]	5	2	21	7	4 [c]	3
Belgium	[9]	[8]	5	2	11	8	8	9
France	[15]	[9]	4	2	12	9	9 [d]	6
Germany	[11]	[7]	3	2	16	6	3	5
Norway	[7]	[6]	4	2	17	6	2	4
Central and Eastern Europe								
Bulgaria	[25]	3	12	6	70	37	1	3
Czech Republic	[14]	2	10	2	45	10	1	3
Estonia	[42]	14	14	2	46	12	1	21
Georgia	[34]	28	25	7	72	38	1 [e]	18
Lithuania	[29]	6	10	3	39	10	1	5
Poland	[17]	2	11	3	31	13	1	3
Romania	[124]	26	14	6	53	34	3	4
Russian Federation	47	16	14	5	51	23	1	44 [f]

Notes. [a] The table is limited to the countries that are studied in the empirical part of the dissertation; [b] If national estimates for the maternal mortality ratio are not available, the modeled estimates are provided between brackets; [c] Survey year 1999 due to later start of reporting; [d] Survey year 2004 due to later start of reporting; [e] Survey year 1997; [f] Survey year 2010 due to a lack of official data reported in later years.

Sources. Data maternal mortality ratio retrieved from World Bank (2016d, 2016e); Data neonatal mortality rate retrieved from World Bank (2016f); Data adolescent fertility rate retrieved from World Bank (2016a); Data new HIV diagnoses rate retrieved from EuroHIV (2002, 2007) and European Centre for Disease Prevention and Control/WHO Regional Office for Europe (2016)

Contraceptive health care

The expansion of effective contraception is considered an important mechanism for improving women's reproductive health (IPPF European Network, 2015). A first set of health benefits relates to couples' ability to plan a pregnancy and thus to the lower likelihood of an unintended pregnancy (Kavanaugh & Anderson, 2013). This has positive implications for maternal health behavior during and after pregnancy, and ultimately improves birth outcomes (e.g., by avoiding stillbirth, preterm birth, low birth weight) and child health. Accordingly, it also reduces pregnancy- and birth-related morbidity and mortality. A second set of health benefits is of a non-contraceptive nature (Jones, 2011; Kavanaugh & Anderson, 2013). A condom may for instance help to prevent the transmission of HIV or other sexually transmitted infections (STIs) whereas the pill is also prescribed as a relief for menstrual pain or as a treatment for acne.

Health care professionals are perceived as important stakeholders in the close connection between contraception and health (David, 1999b; IPPF European Network, 2015). Moreover, they are gatekeepers for access to effective family planning by providing specialized information, having professional skills, and adhering to specific attitudes with regard to birth control. Nevertheless, many countries across the European continent still lack comprehensive, credible, and qualitative guidelines for medical professionals concerning contraception (IPPF European Network, 2015). In France, for instance, evidence-based recommendations on contraception are implemented, but education and training programs for health care professionals are lagging behind. In Germany, Bulgaria, the Czech Republic, and Poland, the guidelines are developed by regional authorities, which causes them to be implemented inconsistently within the countries, and results in inequalities in care and counseling. Often, health care professionals' guidelines and recommendations also fail to address the full range of contraceptive options. Romania and Lithuania are at the bottom of the ladder. These countries have no educational programs or guidelines to enhance contraceptive delivery and counselling at all, partly due to the active stigmatization of contraception by the Catholic Church.

As mentioned earlier (Chapter 3), medical professionals in Western countries initially resisted birth control on moral and medical grounds; contraception was linked to promiscuity and prostitution, and to health risks (Walsch, 1980 in Lupton, 2003; Wajcman, 1991). Moreover, the use of birth control was perceived as a threat to their

learned authority and professional status (Walsch, 1980 in Lupton, 2003). Acceptance of effective contraceptives grew over time (Wajcman, 1991) and – leaving aside the inertia evident in the development and launch of new (male) contraceptive methods (Watkins, 2012) – gave rise to relatively well-developed reproductive health care and reimbursement schemes for contraceptives in NE and WE, compared with other European regions (Table 5.2) (IPPF European Network, 2015).

In CEE, reproductive health services and health care in general followed the course of the Soviet Union; the health systems collapsed together with socialism or shrank considerably (Berdzuli et al., 2009). This had both negative and positive consequences. During the Soviet period, the state controlled all health care and paid the lion's share of related costs, which made health care accessible to everyone. At the same time, it created overly medicalized and specialized societies, with an overload of health care professionals and facilities. Reproductive health care was controlled by gynecologists, who were out of touch with modern medical science and client-centered practice, and had little experience with hormonal contraceptives (Berdzuli et al., 2009; Stloukal, 1999). Overall, they took a negative stance toward the pill – which was produced by the rival West – as they were taught that this had dangerous side effects, and they lacked knowledge of its effectiveness (Serbanescu & Seither, 2003; Sonfeld, 2007). Oral contraception was only officially prescribed for other medical reasons rather than for contraceptive purposes, and the clients accepted the misperceptions of the potential health risks[7] (Berdzuli et al., 2009; David, 1999a; Serbanescu & Seither, 2003). Intra-uterine devices (IUDs) were also initially described as harmful (Popov & David, 1999). The medical perspective generally remained focused on curative rather than preventive care as it was well adapted after the early liberalization of abortion laws (see below) (Frejka, 2008a; Stloukal, 1999). The surgical nature of abortion procedures also appealed more to the idea of "real medicine" than other birth control measures and provided a more regular source of income (David, 1999b; Stloukal, 1999).

The 1990s marked a shift toward growing out-of-pocket fees – leading to more health inequalities – and increasing privatization of the health system (Berdzuli et al., 2009). This is also reflected in the non-existence of reimbursement schemes for contraception in most countries, with only Estonia and Poland providing some form of reimbursement

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[7] Given the high costs of importing hormonal methods from the West and the poor quality of domestically produced methods, it is, however, also likely that users did experience more side effects than their WE counterparts (Serbanescu & Seither, 2003).

Table 5.2 Existence of reimbursement schemes for contraception [a]

	(Partial) reimbursement	Special reimbursement for adolescents (< 20 years old)	Special reimbursement for vulnerable groups (e.g., unemployed, low income)
Northern and Western Europe			
Austria	No	No	No
Belgium	Yes	Yes	Yes
France	Yes	Yes	Yes
Germany	Yes	Yes	No
Norway	Yes	Yes	No
Central and Eastern Europe			
Bulgaria	No	No	No
Czech Republic	No	No	No
Estonia	Yes	Yes	No
Georgia	No	No	No
Lithuania	No	No	No
Poland	Yes (only older generation pills, usually prescribed for medical reasons)	No	No
Romania	No	No (despite temporary programs of short duration)	No (despite temporary programs of short duration)
Russian Federation	No	No	No

Notes. [a] The table is limited to the countries that are studied in the empirical part of the dissertation.

Sources. European Parliamentary Forum on Population & Development (2017); IPPF European Network (2015)

(Table 5.2) Despite several government-subsidized special programs, the private sector plays a major role in the supply of contraceptives (Berdzuli et al., 2009). USAID and other donor support promoted the integration of family planning into primary health care services provided by general practitioners (GPs); since GPs do not normally provide abortions, this transmission should have been an impetus for the use of effective contraceptive methods.

5.2 Fertility

European fertility trends and family policies

Declines in birth rates in European countries were first observed at the end of the nineteenth century and continued throughout most of the 1900s (Van Bavel & Reher, 2013; van de Kaa, 2011). In Western countries, this trend was interrupted by the well-known "baby boom", a period characterized by rising fertility rates (Frejka, 2008b; Van Bavel & Reher, 2013). Explanations for this unforeseen turn-around are complex, but usually relate to economic growth and optimism in the postwar period (e.g., low unemployment rates, reconstruction of housing, and (partial) state coverage for education, health, and child welfare). These years were followed by widespread social changes in women's socioeconomic position, supported by the increasing need for highly-educated people and the rising levels of female labor force participation, which was not met by a similar increase in male involvement in housework and childcare (Frejka, 2008b; McDonald, 2006). In response, childbearing was postponed to a later age and the ideal number of children dropped to two (Frejka & Sobotka, 2008). From the mid-1960s on, fertility rates fell substantially until they reached a persistent below-replacement fertility level (i.e., less than 2.1 children per woman) around the 1990s (Figure 5.1a) (Frejka, 2008b). It should be noted, however, that the fertility rates in these regions are nowadays the highest to be found in Europe (Frejka & Sobotka, 2008), and that slight increases in fertility rates can be noted in some countries in recent years.

The low fertility levels are of grave concern to policy makers (Frejka & Sobotka, 2008), but the extent to which Western family policies affect fertility rates remains a subject of discussion (Gauthier, 2007; Hoem, 2008; Neyer & Andersson, 2008). This is mainly due to the fact that measuring the association between family policy and fertility is highly sensitive to the method, data, and indicators that are used. Nevertheless, whether limited or pervasive, it can be argued that policies play a role in shaping family lives, by

determining rights and responsibilities, opportunities, and constraints (Gauthier, 2007). Policy measures might operate through reducing the cost of childbearing (e.g., by facilitating the reconciliation of paid work and family life), through increasing family incomes (e.g., via cash benefits), or through valorizing having children (e.g., parental leave can raise the acceptability to stay at home with a newborn). France serves as an example where active pronatalist efforts were fruitfully established, given that the country is characterized by some of the highest fertility rates in Europe (Figure 5.1a and 5.1b) (Toulemon, Pailhe, & Rossier, 2008). The relatively high fertility levels in the Nordic countries, however, should be perceived as a side-effect rather than the result of conscious policymaking regarding fertility trends (Hoem, 2008). These countries are considered the forerunners in the domain of gender equality and female empowerment (see below), which ultimately also boosted fertility rates to a higher level.

In many ways, the fertility trends in CEE contrast with those in NE and WE (Frejka & Sobotka, 2008). During the baby boom period, CEE showed the lowest fertility rates of all the European countries. This has been linked to a multitude of strategies implemented by the socialist governments, such as the encouragement of dual-earner households – women's employment rates exceeded those in the West, at that time characterized by the domination of the male breadwinner model – and the early implementation of liberal abortion laws (see below) (Frejka, 2008b; Pascall & Manning, 2000). These low fertility levels were of major concern to the authorities, given that they endangered the stock of armed forces and the labor force, and thus also the continuation of the socialist system (Frejka, 2008b). Therefore, the existing set of pronatalist policies was improved and elaborated from the 1960s-1970s onward; a political move that proved only slightly successful in the subsequent years, as the total fertility rates showed moderate (temporary) increases in some countries in the region, and maintenance of fertility rates around replacement levels in the 1970s and 1980s (Figure 5.1b) (David, 1999b; Frejka, 2008b). The measures taken to encourage childbirth were largely dependent on the country, and different target groups were aimed at. Overall, policies most often included increasing family allowances, prolonging paid maternity leave up to a maximum of three years, publicly provided and affordable childcare services, and temporary restrictions on abortion laws (David, 1999a; Frejka, 2008b; Szelewa & Polakowski, 2008). Some countries, such as Czechoslovakia and Romania, added housing benefits (e.g., rent reductions and attractive loan policies) to the pronatalist package (Baban, 1999; Wynnyczuk & Uzel, 1999). Furthermore, childless and one-child families were penalized via increased income taxes (Baban, 1999; Popov & David, 1999; Wynnyczuk & Uzel,

Figure 5.1a Total fertility rates, Northern and Western Europe, 1960-2014
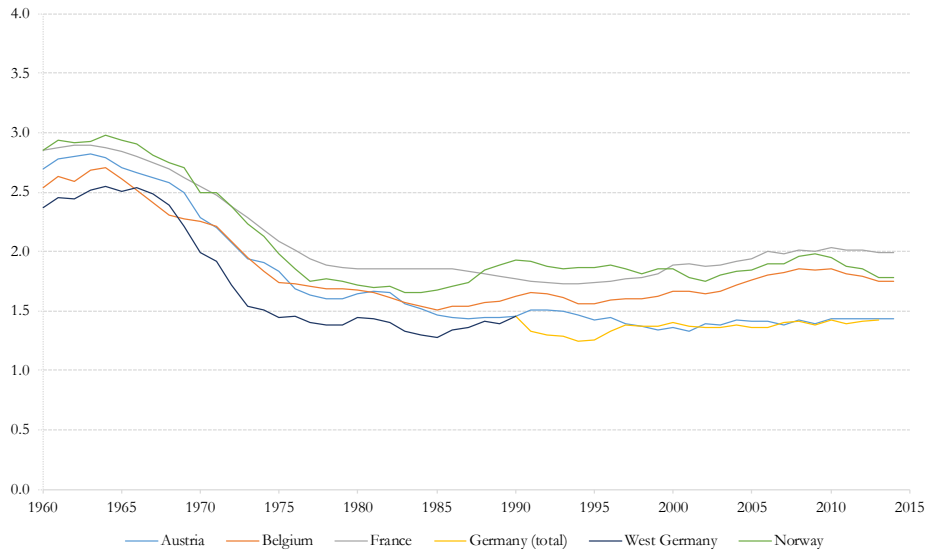
Figure 5.1b Total fertility rates, Central and Eastern Europe, 1960-2014
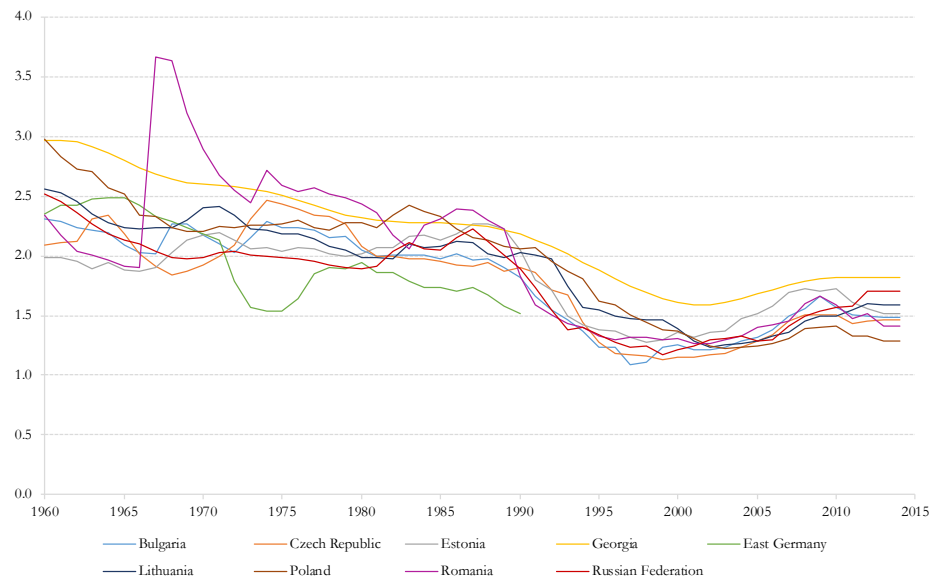
Notes. The figures are limited to the countries that are studied in the empirical part of the dissertation. The total fertility rate is defined as "the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year" (World Bank, 2016b).
Sources. Human Fertility Database (2017); World Bank (2016b)

1999). In Poland, Lithuania, and Romania, the Catholic Church played an important role in the promotion of the pronatalist ideology (Muresan, Haragus, Haragus, & Schroder, 2008; Popov & David, 1999; Titkow, 1999). Taking these pronatalist policies together with guaranteed employment, and free education and health care services, the socialist welfare state managed to create a relatively predictable and reliable risk-free context in which to found and enlarge a family (Frejka, 2008b).

The collapse of the Soviet system prompted couples to adjust their fertility behavior once again (Frejka, 2008b). Specifically, the combination of the postponement of childbearing and the increasing levels of childlessness translated into decreasing fertility levels after the fall of the system and very low fertility rates from the mid-1990s onward (Figure 5.1b) (Frejka, 2008b; Frejka & Sobotka, 2008). The transition to market economies, democratic government institutions, and welfare systems based on Western principles resulted in a multitude of new constraints for childbearing, ranging from job insecurity, pressure to acquire higher education, and a downturn in child-friendly policies, to the increasing availability of career opportunities and leisure activities (Frejka, 2008b). These structural changes were accompanied by altered norms and value systems, leading to the spread of non-marital cohabitation or childbearing, increasing acceptability of divorce, higher tolerance toward childlessness, greater focus on individualism, etc. (Lesthaeghe & Surkyn, 2002; Sobotka, 2008).

How to fit contraception into the fertility story

The diffusion of effective contraceptive methods played an undeniable role in the fluctuations in fertility levels (Frejka, Sobotka, Hoem, & Toulemon, 2008; van de Kaa, 2011). Effective contraceptives directly impacted on childbearing behavior by enabling couples to control their fertility and time their pregnancies more accurately, leading to a lower prevalence of unintended pregnancy. Moreover, they also influenced fertility levels indirectly, by cutting the direct connection between marriage and sex, and between sex and pregnancy, and by raising women's opportunities to achieve a higher level of education and a professional career.

Nevertheless, as van de Kaa (2011, p. 50) puts it, "it would be absurd to attribute this [fertility] change in demographic perspective entirely to the discovery of the pill" (see also: Frejka, 2008a; Frejka et al., 2008). Fertility has been studied from a variety of angles, and most theoretical underpinnings can be reduced to an "economy versus culture"

dichotomy (Balbo et al., 2013); explanations for the unprecedented changes in fertility behavior range from economic security and opportunity costs, to shifts in ideology related to the second demographic transition (Mills, Mencarini, Tanturri, & Begall, 2008). Therein, contraception is often recognized as an important – though not per se decisive – factor, and as an instrument that mainly facilitated people's fertility planning (Frejka, 2008a; van de Kaa, 2011).

Bongaarts (1978, 2015; Bongaarts & Potter, 1983), for example, defines contraceptive prevalence as one of the proximate determinants of the fertility rate in a population, along with the proportion of women in a union (thereby assuming that sexual activity and childbearing only occurs in a married or consensual union), the average duration of lactation (i.e., postpartum infertility), and the prevalence of induced abortion (i.e., the number of births prevented by an abortion). A proximate determinant is assumed to be directly connected to its outcome – for instance, if contraceptive use changes, fertility necessarily changes too – which differentiates it from background determinants such as education or income.

Another comprehensive model to understand fertility change was developed by Coale (1973), and further refined by Lesthaeghe and Vanderhoeft (2001). The theoretical framework builds on the argument that three necessary conditions precede behavioral change: readiness, willingness, and ability. Readiness refers to the cost-benefit calculation, in which people weigh up the pros and cons of adopting new behavior; willingness reflects the normative and legitimate acceptability of new forms of behavior; ability indicates that new behavior depends on the availability and accessibility of techniques. Contraception is classified in the last category. According to the authors, it was the joint meeting of the three preconditions in particular that shaped the onset and the speed of European fertility transitions; if one of the factors is resistant to change, it acts as a bottleneck and slows down or prevents transition. Specifically, the simultaneous occurrence of increasing costs related to having children (readiness), secularization and the changing norms and value systems (willingness), and the introduction of highly effective birth control methods (ability) led to decreasing fertility rates in NE and WE, starting in the late 1960s. In reverse, the relatively high fertility rates characterizing the CEE countries from the 1970s until the fall of the Iron Curtain may be linked to a combination of low-cost childbearing, pronatalist values, and the lack of accessible, effective contraceptives. It took until the sexual and contraceptive revolution in the

1990s for fertility levels to drop (see below) (Frejka, 2008a; Sobotka, 2008). This ready-willing-able model is further elaborated on in empirical Chapter 9.

5.3 Gender equality

Theoretical underpinnings

Gender inequality has been described as "the degree to which men and women, who are otherwise social equals, are unequal in their access to the scarce and valued resources and opportunities of their society" (Chafetz, 1999, p. 10). Despite the numerous variations in perspectives, the gendered division of production – emphasizing men's and women's economic positions – and reproduction – stressing the family – have been identified as the focal points wherein gender stratification is produced and reinforced (Chafetz, 1991, 2001; Collins et al., 1993). Contraceptive use is obviously situated within the reproductive domain. Based on the traditional model of family life in Western countries, it is assumed that men and women derive most power from "their" interest spheres; men will dominate decision making in productive labor and women will have more power in reproductive labor (see Chapter 4) (Jansen & Liefbroer, 2006). It should, however, be noted that women's higher engagement in reproductive labor is associated with lower status and rewards compared with men's responsibilities in productive labor (Rosenfield, 1992).

Though the two aspects of the gendered division of labor are often considered separately, their interrelatedness cannot be overlooked (Chafetz, 2001; Collins et al., 1993). In the case of controlling fertility, for instance, contraception crucially impacts women's autonomy, freedom, and opportunities in other life domains, as it enables them to plan if and when they want to have a child, and is hence considered an essential component to narrowing the gender gap in individual, social, and professional spheres (Blumberg, 1984; IPPF European Network, 2015). In turn, effective contraceptive use is highly dependent on women's power to make decisions about their own fertility (Xu, Bentley, & Kavanagh, 2011).

In gender stratification literature, it is central that gender inequality is manifest at all levels of society (Chafetz, 2001). At the individual level, women's autonomy comes to the fore (see Chapters 1 and 3), and at the couple or household level, it is almost impossible to consider decision making without pointing to the centrality of the

gendered division of labor (see Chapter 4). These lower levels are "nested" into macro-level structures (Blumberg, 1984); opportunities and constraints at the micro and meso levels are substantially shaped by macro-level features such as the economy, the educational system, and religion (Chafetz, 2001). Because major societal institutions are largely dominated by men, who evaluate the society from their advantaged perspective, other men are almost automatically (although not *per se* consciously) favored over the "others": women (Chafetz, 2001). For instance, by traditionally providing men with more resources and valued goods compared with women, exchange relations and gender inequality in families (i.e., women balance their lower share in resources by engaging in domestic labor, see Chapter 4) are recreated on a constant basis. Accordingly, Blumberg (1984) states that power flows from higher societal levels to lower levels, and that male domination at the macro level will "discount" women's power at the individual and couple level.

McDonald (2000a, 2000b, 2013) takes a slightly different stand and instead details how incoherence between higher levels of gender equality in "individual-oriented" institutions that deal with people as individuals (e.g., education or the labor market) and lower levels of gender equality in "family-oriented" institutions that deal with people as members of families (e.g., the family itself) hinders women in competing with men in the labor market as equals, given the difficulty of reconciling paid and unpaid work.

The significance of the macro context, and the ways in which it moderates the relationship between women's individual autonomy and their access to valued resources, was picked up by women's movements some decades ago, in their attempts to put gender equality on the political agenda (Chafetz, 2001). In addition to traditional issues such as employment, there is a body of opinion that stresses the importance of also including reproductive health and rights in gender empowerment policies (see Chapter 13) (IPPF European Network, 2015).

Gender equality across European countries

Across European contexts, the twentieth century was characterized by widespread social changes in women's socioeconomic position, clearly reflected in the erosion of the male breadwinner model and the subsequent rise of dual-earner families (Aboim, 2010; Lewis, Campbell, & Huerta, 2008). The dual-earner model first became dominant in the communist countries, fueled by rapid industrialization under socialism and the pressing

need for a larger labor force (Panayotova & Brayfield, 1997; Stloukal, 1999). The communist party identified female labor force participation as *the* tool to achieve women's emancipation and ideologically committed to the goal of gender equality (David, 1999a; Pascall & Manning, 2000). Hence, social policies were linked to labor force attachment; women were stimulated to join the labor market by the offer of highly-developed and affordable childcare services, and generous systems of social benefits for maternity and the family (Oláh & Fratczak, 2004; Szelewa & Polakowski, 2008). In addition, liberal abortion laws (see below) were pitched as an essential component of equal rights (David, 1999a). By the mid-1950s, women's labor force participation – and, accordingly, their economic independence – had reached substantially higher levels than in Western countries (Stloukal, 1999).

Remember, however, the work toward gender equality rooted in the overriding goal of economic growth; an exclusive focus on participation rates obscures the interplay between institutional, political, and ideological arenas and disguises women's genuine social position (David & Skilogianis, 1999; Panayotova & Brayfield, 1997). Similar to NE and WE at that time, the labor market in CEE suffered from gender segregation – women were employed in a limited range of sectors, mainly light manufacturing, or services and caring professions, and were overrepresented in low-status jobs – and women's earnings equaled 70 to 80 percent of men's (Pollert, 2003). The low cultural pressure on men to engage in housework and the focus on a male-dominated society left women with a triple burden – as wives, mothers, and employees (David, 1999a). Lastly, despite the quota system to ensure women's representation in politics and their relatively high presence compared with other European regions, women's political positions were weaker than men's; they were supposed to support the party line rather than to give voice to women's concerns (Corrin, 1994; David & Skilogianis, 1999; Pollert, 2003).

This type of context, where women perceive work as a burden rather than a privilege, meant that the right to work could have never been picked up as a slogan for women's movements (Corrin, 1994). The notion of gender equality carried the weight of how it was initially pictured by the authorities, leading some to even reject the goal of equality (David & Skilogianis, 1999). This is put forward as an important explanation for why independent women's movements did not gain ground in CEE (Corrin, 1994; David & Skilogianis, 1999).

The collapse of the Soviet regime led many women to return to the private sphere and caused a reversion to more traditional gender relations regarding paid work (David &

Skilogianis, 1999; Schmitt & Trappe, 2010), but interpretations of the substantial decrease in female labor force participation differ. Most scholars identify women as the "losers" in the transition process: the high unemployment rates and the downsizing of public childcare undermined women's position as workers, and forced them into an economically dependent position relative to their male partner. Others see it as a way of female emancipation and self-realization, whereby women chose to go back to the family to fulfill their identity as a woman, which had been lost during the communist period (Ma, 2010). Either way, women's economic advantages – in terms of educational attainment, work, etc. – are today quite similar in the East and the West (Schnepf, 2006).

In NE and WE, the steep increase in female labor force participation starting in the 1950s could be framed within women's emancipation "from home and kitchen", and gain in independence (Ma, 2010). In contrast to the East, gender equality was advocated bottom-up and developed as a fundamental part of society (Schnepf, 2006). Among other things, the increasing ability to plan lives coupled with the spread of effective fertility control encouraged women to enhance their employment potential through increased levels of education (McDonald, 2006). Nowadays, WE is characterized by a trend of men working full-time and women being relatively flexible in choosing their employment patterns, ranging from working full-time or part-time, to being self-employed or a full-time housewife (Lewis et al., 2008; Ma, 2010). A large amount of care work remains informal, and still primarily falls on women's shoulders (Lewis et al., 2008). The Scandinavian countries, on the other hand, come close to a dual earner/dual carer model, although women still work shorter hours than men (Ellingsaeter & Leira, 2006; Lewis et al., 2008). The state supports equal sharing of both paid and unpaid work and care via paid parental leave and extensive formal care services.

To conclude, Figure 5.2 ranks all countries under investigation according to their scoring on multiple relevant macro-level gender equality measures (see Mills (2010), for a more detailed discussion and comparison of the different measurements). Different dimensions are relied on, depending on the measurement, but most indicators include the gender gap in education, economy, politics, and/or health. Only the Gender Inequality Index takes reproductive health into account (UNDP, 2013). Apart from the differentiation due to variations in measurement, it is remarkable that NE and WE countries – with Norway, Germany, and Belgium most continuously at the top of the list – generally score better in terms of macro-level gender equality than the CEE region. Georgia and Romania generally display the lowest levels.

Figure 5.2 Cross-national variation in macro-level gender equality in 2012, per index
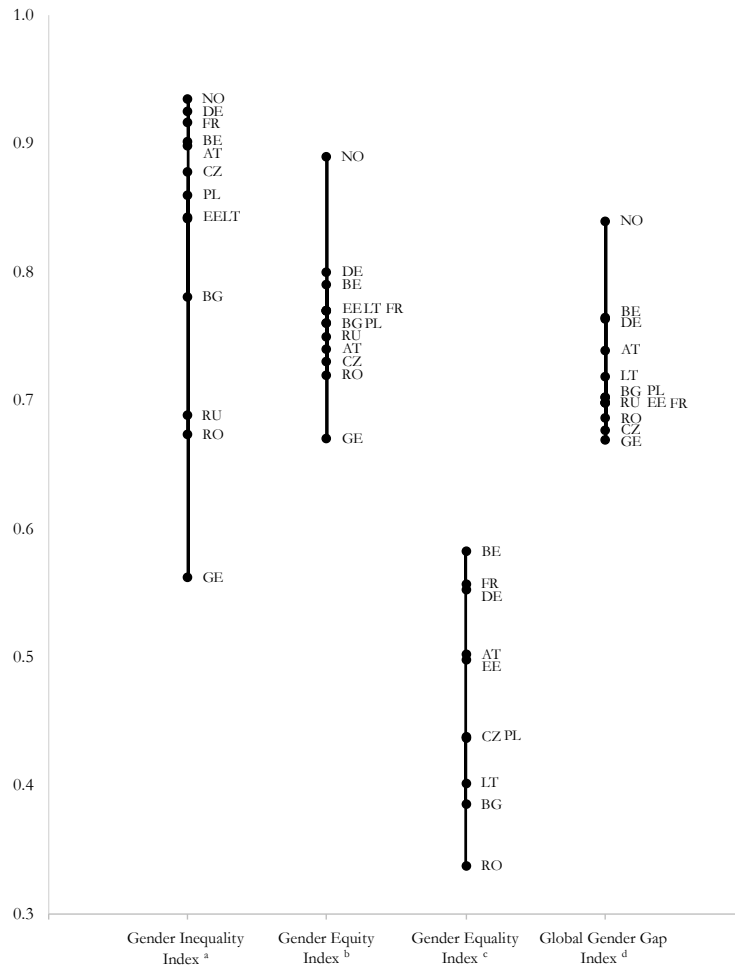
| Gender Inequality Index [a] | Gender Equity Index [b] | Gender Equality Index [c] | Global Gender Gap Index [d] |

Notes. The figure is limited to the countries that are studied in the empirical part of the dissertation. To enhance comparability, all the data is for 2012 (although more recent data is available for some measurements) and all measurements are (re)scaled from 0 (inequality) to 1 (equality); [a] The Gender Inequality Index combines three dimensions: reproductive health, empowerment, and the labor market; [b] The Gender Equity Index combines three dimensions: education, economic activity, and female empowerment; [c] The Gender Equality Index combines a range of dimensions: work, money, knowledge, time, power, health, violence and intersecting inequalities, and is limited to EU countries only (i.e., no data is available for Norway, Georgia, and the Russian Federation); [d] The Global Gender Gap Index combines four dimensions: economic participation, educational attainment, health and survival, and political empowerment.

Sources. Data Gender Inequality Index retrieved from UNDP (2013); Data Gender Equity Index retrieved from Social Watch (2012); Data Gender Equality Index retrieved from European Institute for Gender Equality (2015); Data Global Gender Gap Index retrieved from Hausman, Tyson, & Zahidi (2012)

5.4 Induced abortion

The legalization of induced abortion (hereafter referred to as "abortion") can be seperated into five broad categories, ranging from highly restrictive to highly liberal: (1) prohibited altogether, or allowed to protect a woman's life, (2) permitted to preserve a woman's physical health, (3) permitted to preserve a woman's mental health, (4) permitted on socioeconomic grounds, and (5) permitted without restriction as to reason, during a prescribed period of the pregnancy (Center for Reproductive Rights, 2017; Frejka, 2008a). Nowadays, all the countries under investigation have highly liberal abortion laws, wherein abortion is permitted on request, except for Poland (Center for Reproductive Rights, 2017). In the latter, abortion is only permitted to save a woman's life or to preserve a woman's health; it is not allowed for socioeconomic reasons or on request (United Nations, 2014).

This uniformity in abortion laws should not distract attention from the highly diverse historical backgrounds preceding them and the substantial variation in abortion rates among countries. I will discuss the patterns in reliance on abortion in accordance with the trends in effective contraceptive use.

Overall, the way in which contraception and abortion are linked remains the subject of a heated discussion (Marston & Cleland, 2003). Given that the two represent alternative means of fertility control, one intuitively assumes an inverse association, with higher levels of abortion paralleling lower levels of contraceptive prevalence and effectiveness, and vice versa (Figure 5.3, Hypothesis A) (Bongaarts & Westoff, 2000; Marston & Cleland, 2003). It is argued that women will rely on abortion – either legal or illegal – if no other means are available (Deschner & Cohen, 2003). Or, put differently, the availability of and access to effective contraceptives is considered key to a decrease in abortion rates.

This pattern is confirmed in CEE countries. In 1920, the Soviet Union was the first to legalize abortion on women's request in the first trimester of pregnancy (Popov & David, 1999). Abortions were provided in state hospitals by licensed physicians and were free of charge. The underlying idea was to permit abortions temporarily, until social conditions and the organization of child care facilities improved. However, the inclusion of women in the labor force to meet economic goals only further increased the number of requests for abortion. In order to boost the falling birth rates, abortion policies were restricted again in 1936. It took until 1955, the post-Stalinist period, for a renewed

Figure 5.3 Hypotheses concerning the association between contraception and abortion

Hypothesis A: Contraception replaces abortion

Hypothesis B: Contraception and abortion increase simultaneously
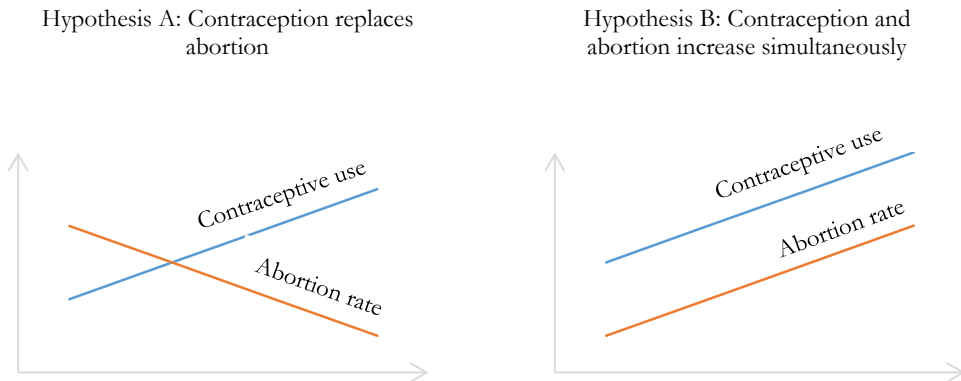
relaxation of the abortion law; this formed part of the social policies and can be seen as a way in which the authorities could show their concern about the social problems at that time (Stloukal, 1999). In the subsequent era, abortion laws were frequently modified – either restricted or relaxed – in accordance with country-specific policy (Frejka, 2008b), but overall, abortion was promoted as a right for all women and fitted into the ideological purpose of gender equality (David & Skilogianis, 1999; Serbanescu et al., 2004). Given that it was – and still is – a well embedded and socially accepted method of birth control, CEE countries were characterized by a deeply ingrained "abortion culture" and the highest abortion rates in the world during recent decades (Frejka, 2008a; Stloukal, 1999). In addition to broad access to low-cost abortion procedures, the erratic supply of effective contraceptives and the lack of political and medical commitment to promote them, heavily contributed to the high reliance on abortion (Stloukal, 1999; Westoff, 2005). Hence, abortion rates mainly started to fall in response to, among other things, the substantial rise in the availability of effective contraception after the fall of the socialist system in the 1990s (Figure 5.4b) (Koytcheva & Philipov, 2008; Marston & Cleland, 2003; Sobotka, 2015; Sobotka, Stastna, Zeman, Hamplova, & Kantorova, 2008; Stankuniene & Jasilioniene, 2008; Westoff, 2005). Further support for this "replacement hypothesis" is provided by the observation that countries characterized by high availability of contraception, where methods are free of charge or available at low cost, show a particularly rapid decline (e.g., Estonia) (David, 1999b; Popov & David, 1999). In sum, despite the between-country variation in terms of the legalization of abortion (e.g., the restriction of the Polish abortion law in 1993 versus liberal abortion laws in the

Figure 5.4a Legal induced abortion rates per 1000 women aged 15-44, Northern and Western Europe, 1975-2012
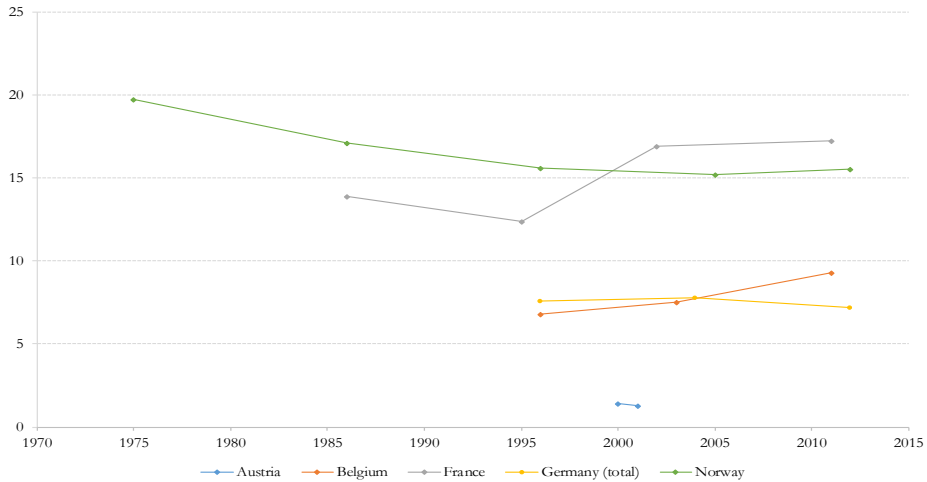
Figure 5.4b Legal induced abortion rates per 1000 women aged 15-44, Central and Eastern Europe, 1970-2012
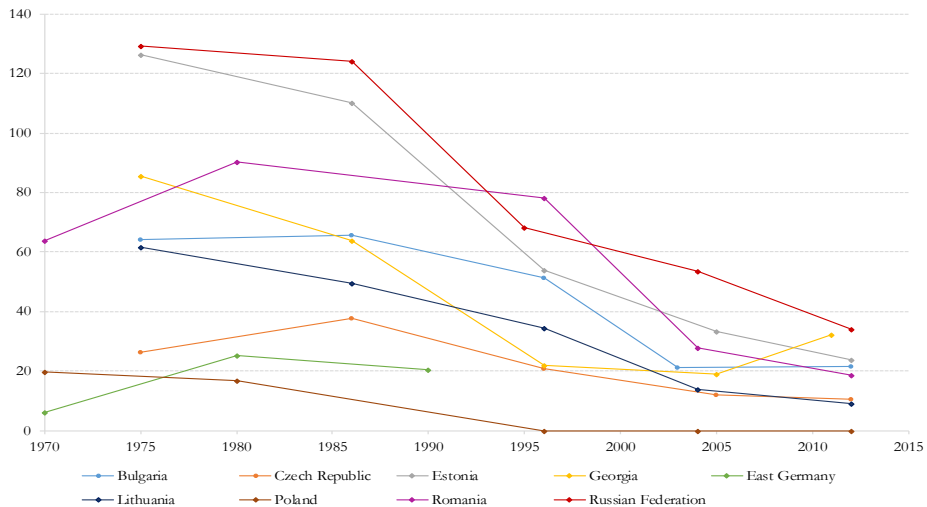
Notes. The figures are limited to the countries that are studied in the empirical part of the dissertation. The quality of data on legal abortions is inconsistent across countries (Sedgh et al., 2016). In Austria, there is no obligation to report abortions which makes reliable numbers unavailable (Prskawetz, Sobotka, Buber, Engelhardt, & Gisser, 2008). For 1975, data for Estonia, Georgia, Lithuania and the Russian Federation include spontaneous abortions, and for 1986, data for Georgia and the Russian Federation include spontaneous abortions.

Sources. Data 1970 and 1980 (only East Germany, Poland and Romania) retrieved from David (1999b); Data 1975 and 1986 retrieved from Henshaw et al. (1999); Data 1996 retrieved from United Nations (1999); Data 2000 (only Austria) retrieved from United Nations (2014); Data 2001-2005 retrieved from United Nations (2007); Data 2011-2012 retrieved from United Nations (2014)

other CEE countries) as well as in abortion rates (nowadays ranging from 0.1 per 1000 women in Poland to 34.2 per 1000 women in the Russian Federation), a general decreasing pattern in abortion rates is observed (Sedgh et al., 2016).

An alternative hypothesis with regard to the relation between contraception and abortion points to a simultaneous increase (Figure 5.3, Hypothesis B). Effective contraceptives were introduced in Western countries within a context of declining childbearing desires (Frejka, 2008a). As lower fertility desires go hand in hand with a higher risk of unintended pregnancy, contraceptive failure may urge couples to opt for an abortion more quickly (Marston & Cleland, 2003).

In NWE, abortion was legalized somewhat later than in CEE, at a point in time when the use of effective contraceptives was already established and widespread (Austria in 1974; Belgium in 1990; France in 1975; Germany in 1975/1992; Norway in 1978) (Frejka, 2008a; United Nations, 2002). Couples mainly rely on the procedure as a backup measure, in the case of contraceptive failure, but are also relatively more likely to interrupt an unintended pregnancy whenever one occurs, compared with earlier days (Bajos, Le Guen, Bohet, Panjo, & Moreau, 2014; Frejka, 2008a; Toulemon et al., 2008). However, partly due to the negative stance of the Catholic Church, abortion remains a controversial topic and is still stigmatized to some extent (Need, Ultee, Levels, & van Tienen, 2008; Rossier & Pirus, 2007). Although abortion rates overall stayed relatively low over time (Frejka, 2008a), many NWE countries witnessed a simultaneous increase in contraceptive prevalence and abortion rates in the early years of legalization (Marston & Cleland, 2003), confirming the "simultaneous increase hypothesis". This early pattern was followed by a more general relatively stable trend – stable or slightly increasing in WE, and slightly decreasing in NE (Figure 5.4a) – in abortion rates for a few decades (Sedgh et al., 2016). Again, the cross-country variation should be noted, with France displaying relatively high abortion rates by WE standards (Toulemon et al., 2008), and NE being characterized by higher rates than most WE countries (Sedgh et al., 2016). Despite the renowned "abortion culture" in CEE, both France and Norway today show abortion rates similar to or higher than some CEE countries.

5.5 An "East-West" divide in contraceptive use

Trends in the prevalence of reversible contraceptives

The "East-West" divide in contraceptive use is a remnant of the diverging histories and contexts that characterize the two European regions. In NE and WE, a climate of well-developed reproductive health care systems and medical support, the desire to postpone childbearing, the rise of the two-child norm, and the increase in levels of gender equality all prompted the use of highly-effective methods to spread rapidly after legislation in the 1960s. Nowadays, the contraceptive transition from the dominant use of natural family planning (e.g., withdrawal, rhythm method) and male condoms, toward the dominant use of effective methods (e.g., the pill, IUD) is considered complete; contraceptive users almost universally stick to the latter method type (Frejka, 2008a). Specifically, 70 percent of WE women (married or in a partnership, aged 15-49) use some kind of contraceptive, which is a composite of 67 percent relying on modern contraceptives[8] and 3 percent practicing traditional methods (United Nations, 2015b). France is at the top of the list, not only in terms of contraceptive use in itself (United Nations, 2015b), but also with regard to the availability of information and access to supplies and services (European Parliamentary Forum on Population & Development, 2017). In NE[9], some 76 percent of women use contraception, of which 73 percent rely on effective methods and 3 percent on natural family planning (United Nations, 2015b).

These general patterns are also reflected in most individual countries. Figure 5.5a indicates a sharp increase in female, effective methods up to the 1990s, followed by a more steady or even decreasing pattern in recent years. Interestingly, the countries with a decrease – Austria, Germany and to some extent France – are those that show a rise in condom usage rates (Figure 5.6a), whereas the other countries show a relatively stable trend. Figure 5.7a illustrates a steep decline in natural family planning, to almost zero from the mid-1990s onward.

In CEE, the early liberalization of abortion and subsequent widespread reliance on the procedure created an unusual context for the adoption of modern contraceptives

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[8] These calculations also include sterilization.

[9] Note that the United Nations (2015b) include Estonia and Lithuania in the NE group for their regional measurements, whereas I consider these countries as part of the CEE group.

Figure 5.5a Prevalence of effective female contraception (%), Northern and Western Europe, 1960-2012
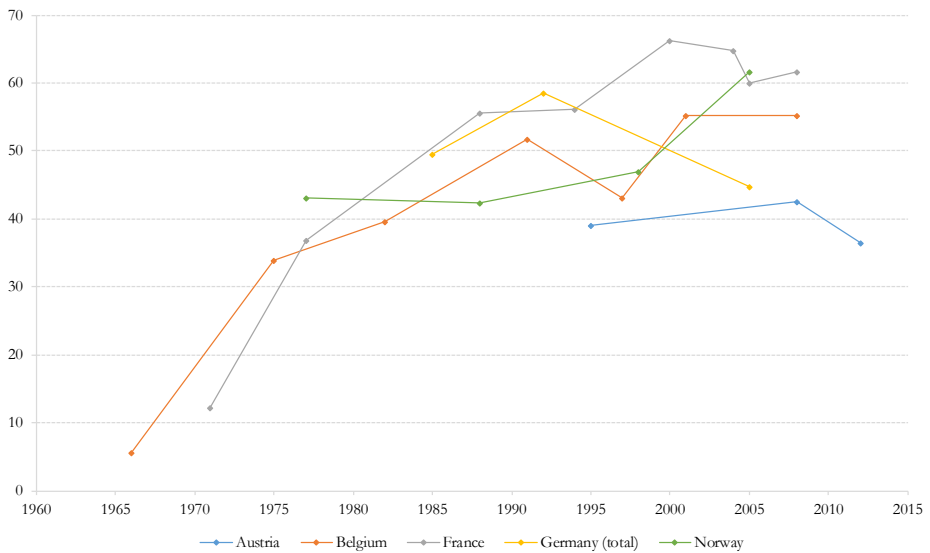
Figure 5.5b Prevalence of effective female contraception (%), Central and Eastern Europe, 1960-2012
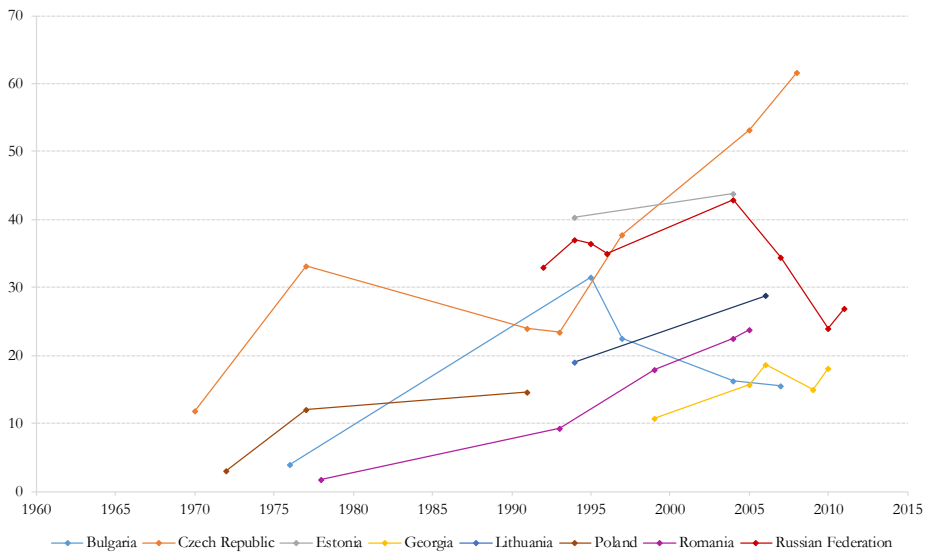
Notes. The figure is limited to the countries that are studied in the empirical part of the dissertation. Prevalence rates apply to women who are married or in a union, aged 15-49. Effective female contraceptives include the pill, IUDs, implants, injectables, emergency contraception, and vaginal barrier methods.
Sources. United Nations (2016)

Figure 5.6a Prevalence of male condom use (%), Northern and Western Europe, 1960-2012
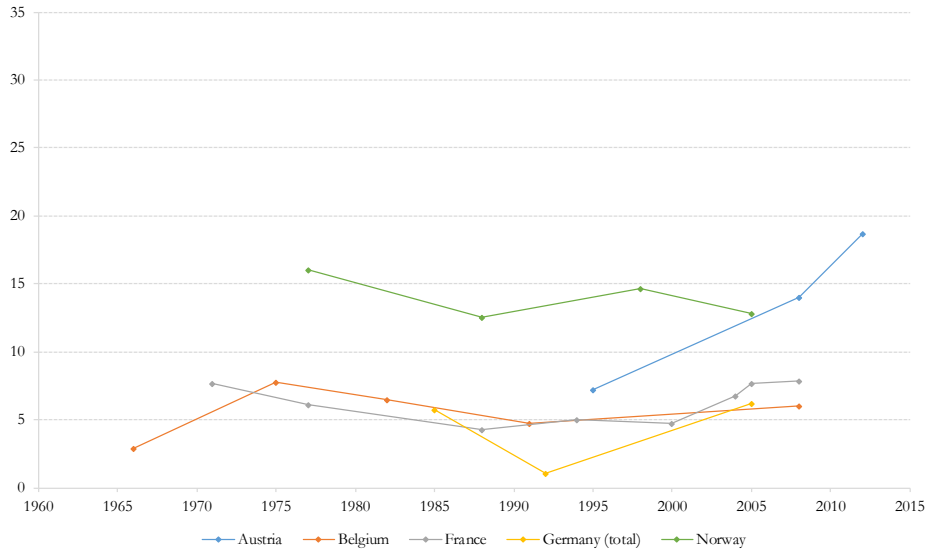
Figure 5.6b Prevalence of male condom use (%), Central and Eastern Europe, 1960-2012
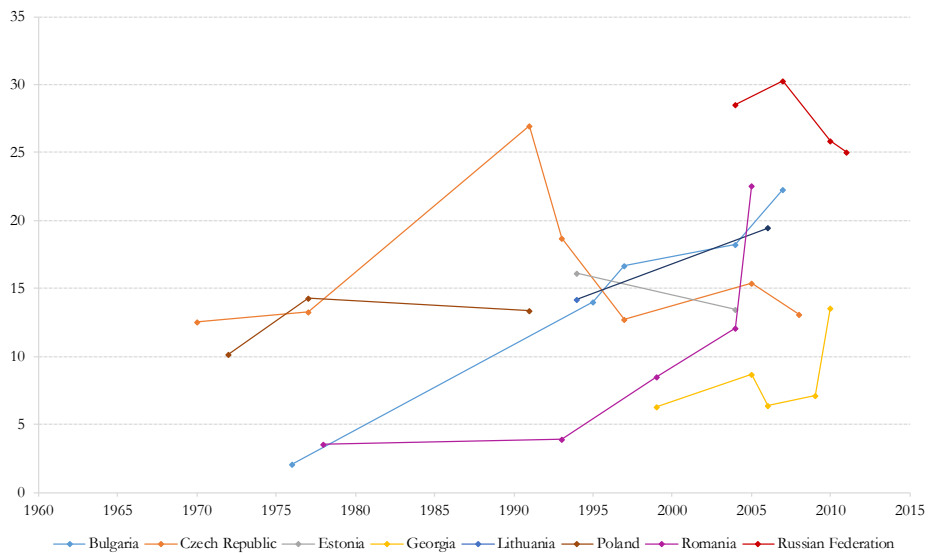
Notes. The figure is limited to the countries that are studied in the empirical part of the dissertation. Prevalence rates apply to women who are married or in a union, aged 15-49.
Sources. United Nations (2016)

Figure 5.7a Prevalence of natural family planning (%), Northern and Western Europe, 1960-2012
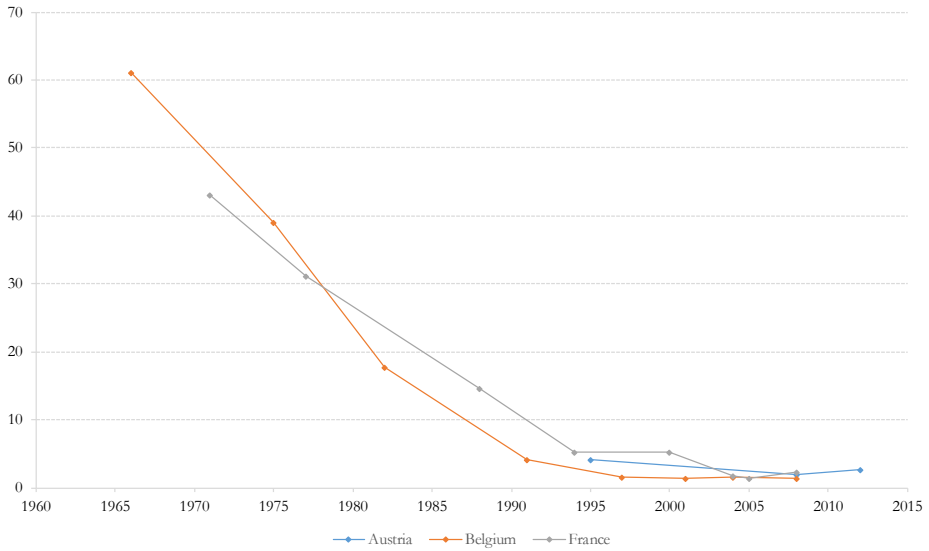
Figure 5.7b Prevalence of natural family planning (%), Central and Eastern Europe, 1960-2012
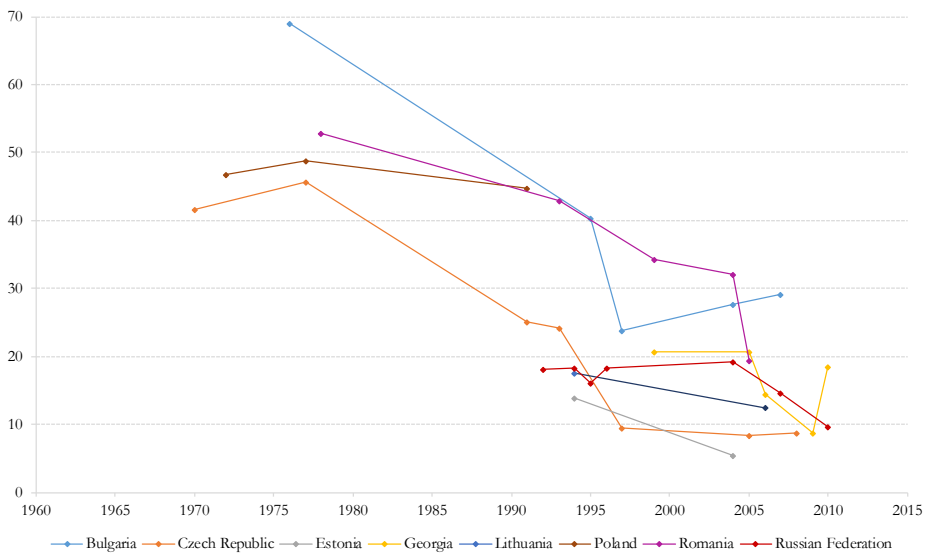
Notes. The figure is limited to the countries that are studied in the empirical part of the dissertation. Prevalence rates apply to women who are married or in a union, aged 15-49. Natural family planning includes the rhythm method, withdrawal, and "other traditional methods". No data is available for Germany and Norway.
Sources. United Nations (2016)

(Carlson & Omori, 1998). Assessing more effective modern methods versus less effective traditional methods – as was the case in NE and WE – significantly differs from weighing the odds of modern methods against those of guaranteed effective abortion, the established method of fertility control for a long time in CEE. Moreover, the negative propaganda spread by the medical establishment and the erratic supply of effective contraceptives, due to poor-quality domestic products and limited, costly imported products from the West, did not particularly add value to the use of modern methods (David, 1999a; Frejka, 2008b; Serbanescu & Seither, 2003; Westoff, 2005). In Romania, the importation of contraceptives was banned in the name of rigidly enforced pronatalist intentions (Baban, 1999); in other CEE countries, such as Lithuania and Poland, effective pregnancy prevention was actively opposed by the Catholic Church (IPPF European Network, 2015; Titkow, 1999; Wynnyczuk & Uzel, 1999). Starting in the 1990s, effective contraception gradually gained popularity in tandem with higher levels of availability, which led to a tremendous increase in its use (David, 1999a; Frejka, 2008a; Westoff, 2005). However, misperceptions of hormonal methods as being unhealthy and unsafe, and a lack of knowledge about their effectiveness, remain to this day (Federal State Statistic Service ROSSTAT, 2012; IPPF European Network & UNFPA, 2012; National Center for Disease Control and Public Health, 2012; Serbanescu & Seither, 2003). Figure 5.5b illustrates that the use of female, effective contraceptives stays at a lower rate in CEE than in WE, but at the same time also increases in most countries. The decrease in recent years in the Russian Federation has been linked to government concerns about low fertility, which led the Ministry of Health to abandon its sex education plans and to lay off a large proportion of the staff in the Moscow offices of contraceptive manufacturers (Westoff, 2005). The decrease in Bulgaria may be due to the highly unstable political and economic situation following the overthrow of the Soviet Union (IPPF European Network, 2015); modern contraceptives were out of reach for many when priority had to be given to food and shelter.

This is not to say that couples did not try to avoid abortion, as CEE residents relied heavily on natural family planning (mainly withdrawal) for fertility regulation (Frejka, 2008b). Although they were generally aware that this method is unreliable, it was considered the safest from a health perspective, as opposed to "unnatural" pills and the like (IPPF European Network & UNFPA, 2012). Moreover, natural family planning is free, takes no preparation, and is always available. Despite the decrease in the prevalence of natural family planning over the years, rates remain markedly higher than in WE

(Figure 5.7b). Condoms are also relied on quite often, but this is in large part due to the peak in STIs and HIV following the societal transformations after the fall of the Iron Curtain (Figure 5.6b) (Amirkhanian, 2012; Serbanescu & Seither, 2003). In all, these trends are still reflected in the patterns of contraceptive use today: 69 percent of CEE women rely on contraception, out of whom 15 percent uses natural family planning, 24 percent relies on male condoms, and 30 percent on effective, female contraception (United Nations, 2015b).

Along with the attention paid to contraceptive prevalence, some thought should also be given to the unmet need for contraception. Women are considered to be in need of contraception if they are not using any method, but are sexually active, fertile and do not want a child within two years (Klijzing, 2000; Singh & Darroch, 2012). An expanded version of the definition of unmet need also includes women who rely on traditional methods (because of their limited efficacy), but this expansion is used to a lesser extent and is also not included here. Furthermore, pregnant women who perceive their pregnancy as unintended are identified as having an unmet need for contraception. As suggested by the diverging patterns of contraception across Europe, NE (7.3 percent) and WE (8.8 percent) have lower levels of unmet need than CEE (10.1 percent), although the difference is small (United Nations, 2015b).

Trends in the prevalence of sterilization

There is one important segment in the range of contraceptives that I have not discussed so far: reliance on contraceptive sterilization. Despite its history of abuse (see Chapter 2), sterilization became legalized as a form of contraception during the second half of the 1900s and the early 2000s in many European countries (EngenderHealth, 2002). Around the world, nearly one third of all contraceptive users relies on sterilization, the major proportion of which is tubal ligation, making it the most commonly used method (United Nations, 2015b).

In WE, contraceptive sterilization was legalized in Austria in 1974 and in West Germany in 1976 (EngenderHealth, 2002). In France, the procedure was only formerly legalized in 2001, and in Belgium, the legal status is unclear. The general use of sterilization among couples in their 30s and early 40s shows some decrease because of the delay in parenthood; more and more women are having children toward the end of their reproductive period (Frejka, 2008a). By contrast, sterilization among 40-45 year olds has

been increasing. Nowadays, the user rates in WE equal 4 percent for vasectomy and 8 percent for tubal ligation (Table 5.3 shows the country-specific rates) (United Nations, 2015b). Belgium is one of the "exception countries" where the rates of vasectomy and tubal ligation are equal.

Table 5.3 Prevalence of vasectomy and tubal ligation (%), most recently available data [a]

	Year of data collection	Vasectomy	Tubal ligation
Northern and Western Europe			
Austria	2008-2009	4.3	6.3
Belgium	2008-2010	8.4	8.4
France	2008	0.8	3.8
Germany	2005	2.4	8.3
Norway	1998	6.3	10.4
Central and Eastern Europe			
Bulgaria	2007	0.1	2.1
Czech Republic	1997	5.1	7.2
Estonia	2004-2005	-	0.1
Georgia	2009	0.1	4.7
Lithuania	2006	0.3	2.1
Poland	1991	0.0	0.0
Romania	2005	0.2	3.9
Russian Federation	2011	-	1.0

Notes. [a] The table is limited to the countries that are studied in the empirical part of the dissertation.
Sources. United Nations (2016)

In NE, there were sharp increases in vasectomy and fluctuating trends in tubal ligation after the prohibition of forced sterilization (mainly performed on women) for any reason, and the introduction of laws approving sterilization for contraceptive purposes in the 1970s (Hemminki et al., 1997). Nevertheless, in Nordic countries, the prevalence of vasectomy remains lower than that of tubal ligation (United Nations, 2015b).

Lastly, in many CEE countries, the rates of voluntary contraceptive sterilization have traditionally been very low (United Nations, 2016). It was rejected as a Nazi eugenic method, and was unacceptable to both the general public and medical professionals except on strictly specified clinical grounds (David, 1999a). At the time that contraceptive sterilization gained ground, vasectomy – often confused with castration – remained rarely discussed and vaguely discouraged as family planning for psychological reasons. Sterilization was legalized for contraceptive purposes in the Czech Republic in

1971 (and revised in 1991), and in Romania and the Russian Federation shortly after the dissolution of the Soviet Union, but the law is somewhat unclear on this issue in the other countries (EngenderHealth, 2002; IPPF European Network, 2015). Further, permission to undergo sterilization is often subject to a set of preconditions (EngenderHealth, 2002). For instance, in the Russian Federation, contraceptive sterilization is only allowed if someone is older than 35 or has two children, and for health reasons. Today, the practice of vasectomy in the region is almost zero and only 2 percent of contraceptive users rely on tubal ligation (United Nations, 2015b).

5.6 Concluding remarks: Embedding contraceptive use in the context

The vast majority of research concerning contraception relies on individual determinants, and hence, tends to suggest that contraceptive behavior is reducible to processes located at the individual level (Almeling, 2015; Clark, 2006). As pointed out in this chapter, however, contraceptive use is also guided by the reproductive climate in which people make these decisions; contraception is closely intertwined with the equipment and approach in health care facilities, fertility norms, gender equality, trends in abortion, and other reproductive indicators. Almeling (2015) appropriately draws on the metaphor of Russian nesting dolls, and depicts the individual level as nested in the couple level, which in turn is nested in the macro level.

The impetus to incorporate the "bigger picture" when examining birth control is mainly derived from reproductive health studies carried out in developing countries (Gakidou & Vayena, 2007; Wang, 2007; Wang & Pillai, 2001). Moreover, as mentioned earlier, contraceptive use has been mainly studied in the U.S. This context-specific focus may lead to biases in literature concerning birth control, as international comparisons reveal important differences between the U.S. and European societies; among other things, the former is generally characterized by higher unintended pregnancy rates and lower abortion rates, a lower reliance on the pill or IUD, and a higher prevalence of contraceptive sterilization (Mosher & Jones, 2010; Sedgh et al., 2016; Sedgh et al., 2014; United Nations, 2015b).

I build on these previous research lines in order to reach a better understanding of how contraceptive use differs among different groups across the European continent, and of how reproductive indicators at the macro level influence contraceptive behavior. All the empirical chapters are based on comparable, representative datasets collected in multiple

European countries, and particular attention is paid to the "East-West" divide in contraceptive use in Chapters 8, 9, and 12. The first empirical chapter (Chapter 8) focuses on country specificities by looking more closely at country-specific and time-specific trends in contraceptive use. Chapter 9 sheds light on how contraception varies by higher-order family policy, gender equality, and prevailing normative principles, and Chapter 12 pays attention to the association between country-level gender equality and individuals' contraceptive behavior. The remaining empirical chapters (Chapters 10 and 11) take the reproductive context into account by controlling for country-level variance.

One final note concerns the German situation. East Germany was the first socialist country to introduce medically prescribed contraception and to supply it free of charge in the early 1960s (Dorbritz & Fleischhacker, 1999). Hence, the region had a higher take-up of these methods than any other CEE country (Brzozowska, 2015). After German reunification in 1990, modern contraceptives rapidly became equally widespread in the Eastern and Western part (Oddens, Visser, Vemer, & Everaerd, 1994; Starke & Visser, 1994). Wherever possible, I showed the trends in East and West Germany separately in the preceding chapter, but in the empirical chapters hereafter, Germany is considered as one entity at the country level.

6. RESEARCH AIMS AND EMPIRICAL CHAPTERS

6.1 Research aims

This dissertation aims to advance the understanding of the European "contraceptive paradox": the observation that many sexually-active women who do not want to become pregnant show less-effective contraceptive behavior than could be expected in countries where highly effective birth control is quite readily available (Balbo et al., 2013; Frost & Darroch, 2008; Grady et al., 2002; Guttmacher Institute, 2008; Moreau et al., 2006; Vaughan et al., 2008).

To this end, two main research aims are advanced. In a first step, I aim to extend knowledge of the current position of European contraceptive use. Previous research most often focuses on the U.S. and studies carried out in Europe are usually limited to single countries (e.g., Bauer & Kneip, 2013; Carlson & Lamb, 2001; Kocourkova & Fait, 2011; Le Guen et al., 2015; Moreau et al., 2006; Muresan et al., 2008; Testa, 2012), single regions (e.g., Janevic et al., 2012; Oddens, 1996; Serbanescu et al., 2004; Westoff, 2005), or to a small selection of countries (e.g., Johnson et al., 2013; Skouby, 2004; Spinelli et al., 2000; Sweeney, Castro-Martin, & Mills, 2015). This results in restricted knowledge about how contraception differs between regional contexts across the continent. I acknowledge the importance of an adequate and accurate description of contraceptive use by European men and women, before proceeding to attempt to further explain its take-up (Sweeney & Raley, 2014). I pay specific attention to the latest patterns and trends in contraceptive behavior, to how contraceptive use relates to people's characteristics, and to how the reproductive climate affects all of this.

In a second step, I elaborate on the recent line of research that pinpoints contraception as a dyadic decision (e.g., Bauer & Kneip, 2013; Fennell, 2011; Grady et al., 2010), influenced by the sociocultural context in which it is made (Clark, 2006; Grady et al., 1993). Hence, I posit that contraception is not only constrained by biology – most available contraception is female – but also by social expectations concerning men's and women's roles in the private and public sphere (Fennell, 2011). Specifically, I aim to examine how both contraceptive efficacy and the gendered division of contraceptive use between partners can be explained by a combination of individual characteristics, couple dynamics, and the macro context.

The objective as presented in the introduction and expanded on in the theoretical part of this thesis was threefold: to include both men and women in the analysis, to adopt a couple perspective, and to take into account the reproductive climate in which people live. Whereas the first research aim connects two parts of this objective – the inclusion of men and the broader context – the second research aim incorporates all three parts, by additionally including a couple perspective.

6.2 Overview of the empirical chapters

The research aims are translated into two sets of empirical chapters; the focus and hypotheses of each of which are summarized in Table 6.1. In addition, the conceptual model in which all five empirical studies can be situated is shown in Figure 6.1.

Chapters 8 and 9 address the first research aim. Chapter 8 focuses on the shift from a contraceptive model dominated by cooperative methods (e.g., natural family planning and condom use), toward a model primarily based on medical methods (e.g., the pill and intra-uterine device). Although this transition is considered virtually complete in NWE countries, it is still running its course in most CEE countries (Frejka, 2008a). The purpose of this study is to compare how the patterns of contraceptive use changed between the 1990s and the 2000s in ten different European countries. Attention is paid to whether associations between socioeconomic and demographic characteristics, and the use of cooperative and medical methods remained similar over time. Furthermore, decomposition analyses are performed to detect whether the observed changes can be attributed to changes in the composition of the population or to changes in men's and women's behavior. As shown in Figure 6.1, this chapter covers the link between individual socioeconomic and demographic characteristics, and contraceptive efficacy.

Chapter 9 takes this a step further by applying Coale's (1973) ready-willing-able framework – initially developed to understand the decline in fertility rates during the first demographic transition in Europe – to the use of less-effective or more-effective contraceptives. As mentioned before, this model is based on the idea that structural, ideological, and technological conditions are jointly important in the adoption of new forms of behavior (Lesthaeghe & Vanderhoeft, 2001; Sobotka, 2008), here effective methods of contraception. Hence, I hypothesize that individuals who are identified as ready (i.e., the advantages of using effective contraception outweigh the disadvantages), willing (i.e., effective contraception is normative acceptable), and able (i.e., effective

contraception is available and accessible) will be more likely to practice modern contraception instead of using no contraception or traditional methods. Moreover, I expect that each of these three preconditions will explain part of the differences in contraceptive uptake, irrespective of the other two. Coale's (1973) model is further expanded by investigating how the three dimensions also affect contraceptive use at the regional level (NUTS 1; see Chapter 7): readiness is measured as family policy, willingness is measured as normative principles, and ability is measured as gender equality. Lastly, I investigate how the three macro-level preconditions interact with the three conditions at the individual level. In the conceptual model, this chapter reflects the associations between the individual level and the regional level (NUTS 1), and contraceptive efficacy (Figure 6.1).

Chapters 10, 11, and 12 cover the second research aim. Chapter 10 relies on the rich tradition of fertility research that investigates the links between partners' juggling of paid and unpaid work, and the postponement of or transition to parenthood. The underlying assumption is that fertility choices can be defined as rational responses to uncertainty about working conditions and the (un)equal sharing of housework (Balbo et al., 2013). I aim to empirically test whether this reasoning also applies to less-effective or more-effective contraceptive use. If contraceptive users act as rational agents, it can be expected that they will rely on highly-effective contraception when the costs of contraceptive failure are greater (e.g., because it may put a hold on a woman's professional career). A set of five hypotheses is formulated, primarily based on the influential "New Home Economics" approach to fertility behavior. Taking all this together, the chapter specifically examines the relationship between individual-level job characteristics, the couple-level division of paid and unpaid labor, and the use of effective contraceptive methods (Figure 6.1).

Chapter 11 takes a closer look at how power dynamics in Western European couples – measured as partners' educational differences and couples' interactional dynamics (i.e., the division of housework and decision making) – relate to male versus female contraceptive use, or non-use. As mentioned earlier, we should caution for the assumption that female contraceptive use is necessarily a sign of female empowerment (Gupta, 2000; Wajcman, 1991) or an indication of higher power. Contraception may equally likely be perceived as a burden – think for instance about the numerous side effects of hormonal contraception reported by many women (Johnson et al., 2013) – that people prefer to transfer to their partner, which makes it an indication of lower

Table 6.1 Overview of research aims, and chapter-specific aims and hypotheses

	Chapter-specific aims	Chapter-specific hypotheses
Research aim I. To outline the current position of European contraceptive use		
Chapter 8. The shift toward a medical contraceptive model in Europe: Where are we now?	(1) To compare the trends in contraceptive use in the 1990s and 2000s in different European countries and sociodemographic groups; (2) To determine whether changes between the two time periods can be attributed to changes in the composition of the population or to changes in men's and women's behavior	-
Chapter 9. Ready, willing, and able: Contraceptive use patterns across Europe	Application of the ready-willing-able model: (1) To identify individual-level and macro-level determinants of contraceptive use; (2) To examine how the macro context interacts with the individual level	(H1) Individuals who are identified as ready, willing, or able will be more likely to practice modern contraception instead of using no method or traditional contraception; (H2) Each of these three preconditions will explain part of individuals' contraceptive behavior, irrespective of the other preconditions; (H3) Macro-level notions of readiness, willingness, and ability will be related to a higher likelihood of practicing modern contraception instead of using no method or traditional contraception; (H4) Macro-level notions of readiness, willingness, and ability will interact with the conditions at the micro-level by further empowering individuals' characteristics
Research aim II. To examine how contraceptive use and its gendered nature can be explained by individual characteristics, couple dynamics, and the macro context		
Chapter 10. Contraceptive efficacy by partners' division of labor: (Contrary) evidence for a rational fertility approach	To examine whether the frameworks that theorize fertility as a rational response to difficulties in reconciling work and family can be extended to contraceptive use	(H1) Women's higher investment in paid labor is associated with more-effective contraceptive use; (H2) Men's lower investment in paid labor is associated with more-effective contraceptive use;

Figure 6.1 Schematic overview of the conceptual model

Individual level
Men's and women's socioeconomic and demographic characteristics

Couple level
Partner differentials; Interactional dynamics

Regional level (NUTS 1)
Family policy; Normative principles; Gender equality

Country level
Gender equality

European regional level
"East-West" histories

Contraceptive efficacy

Gendered division of contraception
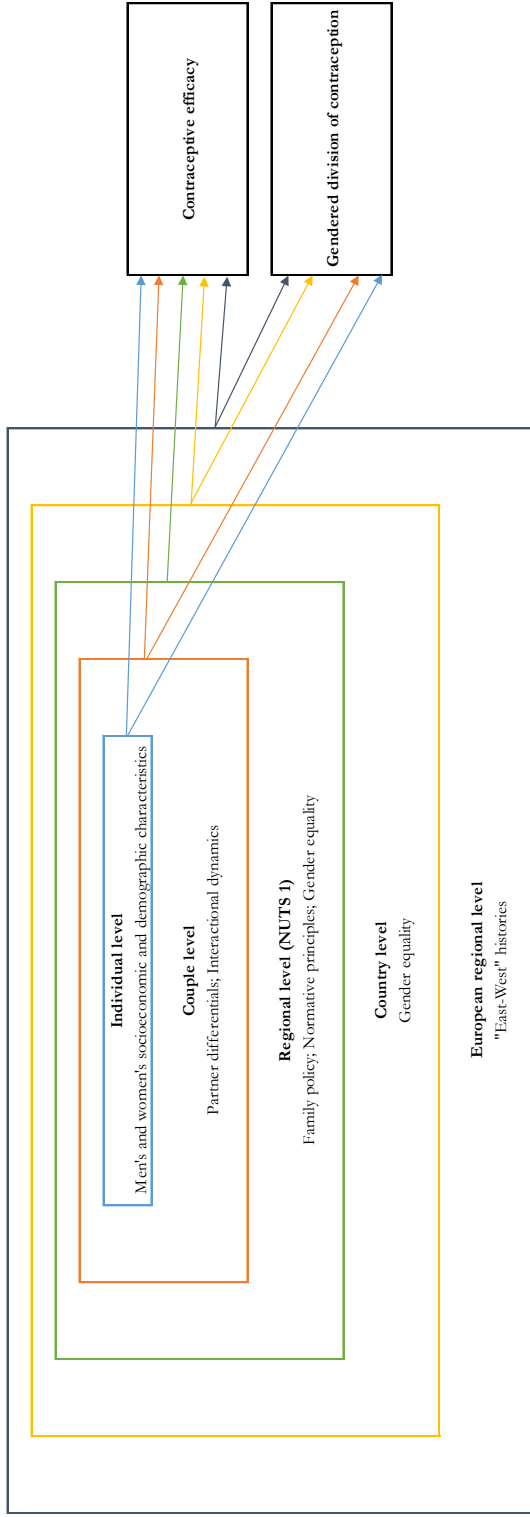
Chapter 8: Individual level → Contraceptive efficacy
Chapter 9: Individual level, Regional level (NUTS 1) → Contraceptive efficacy
Chapter 10: Individual level, Couple level → Contraceptive efficacy
Chapter 11: Couple level → Gendered division of contraception
Chapter 12: Individual level, Couple level, Country level, European regional level → Contraceptive efficacy, Gendered division of contraception

power. Accordingly, I formulate two contrasting hypotheses, based on the relative resource theory and gender perspectives: couples in which the woman has greater relative power will be *either* more *or* less inclined to opt for reversible or permanent male contraceptives than for female reversible methods. In Figure 6.1, this embodies the link between couple dynamics and the gendered division of contraception.

The final empirical chapter, Chapter 12, is an extension of the former two, as it simultaneously looks at indicators of gender inequality at the individual, couple, and country level, and how these are associated with contraceptive efficacy *and* the gendered division of contraception (Figure 6.1). In addition, I investigate whether the variation in contraception between NWE and CEE can be explained by differences in gender inequality at these three analytical levels. It should be noted that this chapter is based on a female study sample only, due to data limitations. The hypotheses are derived from the repeated observation that lower socioeconomic status (Eeckhaut, Sweeney, et al., 2014; Janevic et al., 2012; Mosher & Jones, 2010; Serbanescu et al., 2004; Serbanescu & Seither, 2003; Spinelli et al., 2000) and higher levels of contextual gender inequality (Bentley & Kavanagh, 2008) consistently relate to less-effective contraceptive behavior (H1), the resource theory and gender perspectives (H2a and H2b), and the fact that the CEE region is characterized by less-effective contraceptive use as well as lower levels of gender equality (H3).

The next part of this dissertation starts with a discussion of the data, measurements, and statistical techniques that are applied, and the five empirical chapters can be found thereafter.

7. METHODOLOGY

7.1 Data

The data used needed to meet two main criteria in order to address my research aims. First, it had to contain cross-national comparable information on contraception use in multiple European countries, to depict and compare contraceptive behavior in different European settings. Second, information had to be available about both the respondent and his/her partner (e.g., in terms of education or employment status), and about how their household is organized (e.g., the division of household labor or decision making) to examine contraception as a couple decision. The Generations and Gender Survey (GGS) meets both of these criteria and is relied on as the main data source for this dissertation.

For the specific purposes of Chapters 8 and 12, this data was combined with information retrieved from two other surveys. Chapter 8 addresses the trends in contraceptive use in recent decades. Here, I use the Fertility and Family Survey (FFS) to complement the recent data from the GGS with data from the 1990s. Chapter 12 examines, among other things, macro-level gender inequality. For this, I rely on the Demographic and Health Survey (DHS) to obtain a larger number of countries to perform meaningful analyses at the country level.

Generations and Gender Survey

The GGS is coordinated by the United Nations Economic Commission for Europe (UNECE, 2005) and rooted in scientific efforts to gain knowledge of the profound demographic and social changes that characterize the last century (e.g., rising non-marital cohabitation and childlessness, decreasing fertility rates) (Macura, 2002; Vikat et al., 2007). Particular focus is paid to relationships between children and parents ("generations") and between partners ("gender"), and to crucial transitions in these relationships (e.g., leaving the parental home, the birth of a child). A broad range of topics is covered, including fertility, partnership, and attitudes. Four key features characterize the survey design: it takes a prospective view (e.g., by asking whether respondents plan to have a child during the next three years), it is multidisciplinary and context sensitive (i.e., individuals are positioned in the context in which they live,

including relationships, family networks, regions, and countries), and it ensures cross-national comparability by providing standard instruments (e.g., a standardized questionnaire and common definitions and instructions).

The aim is to collect a longitudinal panel survey consisting of at least three waves with a three-year interval between each (UNECE, 2005). Data for the first wave was gathered between 2002 and 2013 in 17 European countries, Australia, and Japan, data for the second wave is currently available for 11 European countries and Australia (collected between 2007 and 2015), and data for the third wave is still being collected and prepared for use (GGP, 2016). I focus on data from the first wave and only include the 13 countries for which information on contraceptive use is available: Austria, Belgium, France, Germany, Norway, Bulgaria, the Czech Republic, Estonia, Georgia, Lithuania, Poland, Romania, and the Russian Federation (collected between 2004 and 2011). Contraceptive information is also available for Australia, which is excluded because the geographical location is not appropriate, and for Sweden, which is dismissed because of the high number of missing values on the variable. It should be noted that the different groups of included countries across the empirical chapters (Table 7.1 provides an overview of which countries are included in each empirical chapter) mainly relate to differentials in the operationalization of contraceptive use and in the selection of the independent variables (see below).

Table 7.2 summarizes the information about sampling and data collection for the 13 countries used. Probability sampling was applied in all countries and mostly relied on a two-stage sampling procedure; areas were selected first, followed by individual sample elements (Fokkema, Kveder, Hiekel, Emery, & Liefbroer, 2016). Only Austria, Norway, and Estonia used a single-stage procedure, thereby selecting respondents directly without drawing higher-order units first. Face-to-face interviews were conducted with respondents aged between 18 and 79, although there were a few exceptions: Norway used telephone interviews and self-administered postal surveys, and the age range in Austria and Estonia differs from the rest. The total sample sizes range from 5000 in Austria to 19,987 in Poland. There is considerable variation in the country-specific response rates; these are lowest for Lithuania (35.6%) and highest for Romania (83.9%). Overall, however, these rates are comparable with those of other major comparative surveys carried out in Europe.

Table 7.1 Overview of included countries per chapter

	Ch. 8	Ch. 9	Ch. 10	Ch. 11	Ch. 12
Survey	GGS; FFS	GGS	GGS	GGS	GGS; DHS
Number of countries	10	11	10	4	17
Austria	■	■	■	■	■
Belgium	■	■		■	
France	■	■	■	■	■
Germany	■	■	■	■	■
Norway	■		■		■
Albania					■
Armenia					■
Azerbaijan					■
Bulgaria	■	■	■		■
Czech Republic	■	■	■		■
Estonia	■				■
Georgia		■			■
Lithuania	■	■	■		■
Moldova					■
Poland	■	■	■		■
Romania		■	■		■
Russian Federation		■	■		■
Ukraine					■

Table 7.2 Sampling and data collection: Generations and Gender Survey [a]

Country	Year of data collection	Sampling stages	Method of data collection	Age range of respondents	Response rates (%) [b]	Total sample size (male)	Total sample size (female)
Northern and Western Europe							
Austria	2008-2009	1	Face-to-face; CAPI	18-45	64.6	1999	3001
Belgium	2008-2010	2	Face-to-face; CAPI	18-79	41.8	3435	3728
France	2005	2	Face-to-face; CAPI	18-79	66.8	4371	5708
Germany	2005	2	Face-to-face; CAPI	18-79	55.4	4610	5407
Norway	2007-2008	1	Telephone interview; CATI Self-administered postal; PAPI	18-79	60.2	7340	7541
Central and Eastern Europe							
Bulgaria	2004-2005	2	Face-to-face; PAPI	18-79	78.1	5851	7007
Czech Republic	2005	2	Face-to-face; PAPI	18-79	49.1	4797	5209
Estonia	2004-2005	1	Face-to-face; PAPI	21-79	70.2	2821	5034
Georgia	2006	2	Face-to-face; PAPI	18-79	78.2	4405	5595
Lithuania	2006	2	Face-to-face; PAPI	18-79	35.6	4999	5037
Poland	2010-2011	2	Face-to-face; PAPI	18-79	n.a.	8409	11,578
Romania	2005	2	Face-to-face; PAPI	18-79	83.9	5977	6009
Russian Federation	2004	2	Face-to-face; PAPI	18-79	49.7	4223	7038

Notes. [a] CAPI = computer-assisted personal interviewing, CATI = computer-assisted telephone interviewing, PAPI = paper-and-pencil personal interviewing, n.a. = not available; [b] The response rates shown represent the average of the lower bound (including an estimation of undetermined units) and upper bound (excluding undetermined units) response rates (Fokkema et al., 2016)

Sources. Fokkema et al. (2016); Generations and Gender Programme (2016)

Table 7.3 Sampling and data collection: Fertility and Family Survey[a]

Country	Year of data collection	Sampling stages	Method of data collection	Age range of respondents	Response rates (male, %)[b]	Response rates (female, %)[b]	Total sample size (male)	Total sample size (female)
Northern and Western Europe								
Austria	1995-1996	n.a.	Face-to-face; PAPI	20-54	67.0 (Vienna); 82.0 (rest)[b]	n.a.	1539	4581
Belgium (Flanders and Brussels)	1991-1992	1	Face-to-face; PAPI	21-40	66.3	70.2	2198	3235
France	1994	2	Face-to-face; PAPI	20-49	80.9	84.5	1941	2944
Germany	1992	2	Face-to-face; PAPI	20-39	76.1 (East); 71.0 (West)	n.a.	4016	5996
Norway	1988-1989	1	Face-to-face; PAPI	20-43	78.2	81.2	1543	4019
Central and Eastern Europe								
Bulgaria	1997	n.a.	Face-to-face; PAPI	18-40	91.0	n.a.	-	2367
Czech Republic	1997	1	Face-to-face; PAPI	15-44	93.2	n.a.	721	1735
Estonia	1994 (women); 1997-1998 (men)	1	Face-to-face; PAPI	20-69	81.2	84.6	1087	1918
Lithuania	1994-1995	2	Face-to-face; PAPI	18-49	67.0	71.0	2000	3000
Poland	1991	2	Face-to-face; PAPI	18-49	96.5 (households); 94.8 (individuals)[c]	n.a.	4335	4211

Notes. [a] PAPI = paper-and-pencil personal interviewing, n.a. = not available; [b] Few FFS countries provided details on how their response rates were calculated (Festy & Prioux, 2002); [c] Response rates based on refusals only

Sources. Festy & Prioux (2002); UNECE (2000a)

Fertility and Family Survey

The FFS aimed to advance understanding of fertility and family behavior in – what were at the time – recent cohorts (Festy & Prioux, 2002). It built on a multidimensional biographical perspective to look at how educational, occupational, residential, and familial facets of individuals' lives interact with each other, and served as a basis for fertility and family policymaking. Differing from its predecessors – the Comparative Fertility Surveys (1965-1972) and the World Fertility Surveys (1975-1981) – that unilaterally focused on fertility in married women, the FFS started off from a household perspective with attention paid to the growing diversification of family forms and to the male population. The fieldwork took about eleven years, with data being collected in Norway first, in 1988, and in Greece last, in 1999. In the end, data was gathered in 22 European countries, plus Canada and New Zealand. It should be noted that the pioneering countries operated with relatively few guidelines as efforts to enhance comparability (e.g., sampling guidelines and model questionnaires) took until 1992.

The FFS can be considered the predecessor of the GGS (Festy & Prioux, 2002; Macura, 2002; Vikat et al., 2007). Comparability between the two survey programs was key, so that investments in the FFS could yield returns for a longer time, and was ensured by reliance on similar definitions and concepts. I make use of this by combining the FFS and GGS in Chapter 8, in order to obtain a picture of contraceptive trends over the past decades. Only countries for which information on contraception is available in both data sources are retained: Austria, Belgium, France, Germany, Norway, Bulgaria, the Czech Republic, Estonia, Lithuania, and Poland.

Table 7.3 lists some characteristics of the survey design for these ten countries. Approximately half of the countries directly selected individuals from population registers or census data (Festy & Prioux, 2002). The others first made a selection of households based on geography, and then chose one person within each household. Only respondents within the eligible age range – mostly restricted to reproductive age – were selected and interviewed. For some countries, the response rates were not published or they were difficult to interpret given that insight into the calculation is lacking. However, the observation that most rates range somewhere between 70% and 95% is perceived as a sign of acceptable data quality. Total sample sizes are from 721 (Czech Republic) to 4335 (Poland) for men, and from 1735 (Czech Republic) to 5996 (Germany) for women.

Table 7.4 Sampling and data collection: Demographic and Health Survey [a]

Country	Year of data collection	Sampling stages	Method of data collection	Age range (male)	Age range (female)	Response rates (male, %) [b]	Response rates (female, %) [b]	Total sample size (male)	Total sample size (female)
Eastern Europe									
Albania	2008-2009	2	Face-to-face; PAPI	15-49	15-49	95.8	98.1	3013	7584
Armenia	2005	2	Face-to-face; PAPI	15-49	15-49	88.8	96.9	1447	6566
Azerbaijan	2006	2	Face-to-face; PAPI	15-59	15-49	94.1	97.6	2558	8444
Moldova	2005	2	Face-to-face; PAPI	15-59	15-49	86.6	95.1	2508	7440
Ukraine	2007	2	Face-to-face; PAPI	15-49	15-49	90.2	92.0	3178	6841

Notes. [a] PAPI = paper-and-pencil personal interviewing; [b] Calculations based on the number of eligible men/women identified in all selected households

Sources. Demographic and Health Survey (2017); Institute of Statistics, Institute of Public Health, & ICF Macro (2010); National Scientific and Applied Center for Preventive Medicine & ORC Macro (2006); National Statistical Service, Ministry of Health, & ORC Macro (2006); State Statistical Committee & Macro International Inc. (2008); Ukrainian Centre for Social Reforms, State Statistical Committee, Ministry of Health, & Macro International Inc. (2008)

Demographic and Health Survey

The DHS collects cross-sectional, nationally-representative surveys, designed to provide greater insight into the broad areas of population, health, and nutrition (DHS, 2017), covering a wide range of topics including marriage, family planning and reproductive health. The standard survey is aimed to be conducted every five years to allow comparisons over time, and is carried out in over 90 developing countries. To date, seven survey rounds have been conducted; the first phase dates back to 1984-1989 and the last is currently being collected and released (2013-2018). The samples are based on a stratified two-stage cluster design – in the first step, enumeration areas are drawn from census files, and in the second step, households are selected in each enumeration area – and are characterized by large sample sizes, usually between 5000 and 30,000 households. The household is the focus; all household members of reproductive age (for women: 15-49 years old, for men depending on the country: 15-49 years old, 15-54 years old, or 15-59 years old) are considered eligible for an interview and are asked for voluntary informed consent. In addition to the individual model questionnaires (one for men and one for women), there is also a household model questionnaire and a biomarker questionnaire (i.e., objective assessments of health conditions, such as weight and height, or testing for malaria or high blood pressure). These four questionnaires serve as the basis to achieve cross-country comparability.

Data from five Eastern European DHS countries is added to the sample of GGS countries, in order to enlarge the pool of studied countries in Chapter 12. I only make use of the female samples, given that the DHS relies on couple data whereas the GGS gathered its male and female samples in separate households. Both survey programs collected nationally-representative data within the same time period using similar data collection techniques, the country-specific sample sizes are alike, and the questions used to operationalize the variables of interest (see below) were presented in a similar way. Comparability is further enhanced by only including answer categories that are available in the two surveys (e.g., not all contraceptive options are asked about in both programs; see below) and by selecting subsamples via the same criteria (e.g., the age range or partner status of the respondents).

Specifically, information gathered in Albania (2008-2009), Armenia (2006), Azerbaijan (2006), Moldova (2005), and Ukraine (2007) is used (Table 7.4). Face-to-face interviews

Table 7.5 Selection criteria of subsamples per chapter

	Chapter 8	Chapter 9
Gender	Men and women	Men and women
Age	20-40	18-45
Partnership	Co-residential and non-residential	Co-residential and non-residential
Ever had sexual intercourse	Yes	Yes
Not (trying to get) pregnant	Yes	Yes
Fertile (both respondent and partner)	Yes (also excluding sterilization)	Yes (apart from sterilization)
No desire for children	Yes (at the time of the survey); no (later)	No
Total sample size	39,360	29,332

Table 7.5 continued

	Chapter 10	Chapter 11	Chapter 12
Gender	Men and women	Men and women	Women
Age	18-45	≥ 25 (male partner); 25-49 (female partner)	18-49
Partnership	Co-residential	Co-residential	Co-residential and non-residential
Ever had sexual intercourse	Yes	Yes	Yes
Not (trying to get) pregnant	Yes	Yes	Yes
Fertile (both respondent and partner)	Yes (also excluding sterilization)	Yes (apart from sterilization)	Yes (apart from sterilization)
No desire for children	Yes (at the time of the survey); no (later)	Yes	Yes (at the time of the survey); no (later)
Total sample size	18,678	5998	31,632

were conducted in all five countries and the response rates are quite high (for men between 86.6% in Moldova and 95.8% in Albania; for women between 92.0% in Ukraine and 98.1% in Albania). The average male sample size is around 2500 respondents and the average female sample around 7300 respondents.

Selected subsamples

A number of selection criteria are applied to define the population of interest. Only respondents of reproductive age, who are in a heterosexual partnership are included. In line with previous research into contraceptive use, they also have to be in need of contraception (Klijzing, 2000; Singh & Darroch, 2012). That is, respondents have to be sexually active, have to be fecund, and need to have no desire for children within two years.

However, some variation in the selected subsamples across the empirical chapters can be detected (Table 7.5). For instance, four chapters make use of a sample with both male and female respondents, but Chapter 12 relies on a women-only sample due to data limitations. Or, the age range is generally adapted to enhance comparability between the included countries; for example, an age range from 20 to 40 covers all respondents interviewed in the GGS and FFS, and an age range between 18 and 45 takes into account the selected interviewees in the Austrian GGS (all Austrian respondents are between 18 and 45 years old, as opposed to the respondents in most other GGS countries, who are generally between 18 and 79 years old). The required type of partnership relates to whether the organization of the household is relevant to the research questions that are examined; Chapters 10 and 11 focus on partners' division of household labor, an indicator that applies only to co-residential partners. In addition, the precise definition of "fertile" respondents and partners is dependent on the research question, as some chapters include sterilization as a contraceptive option (i.e., Chapters 9, 11, and 12) whereas other chapters exclude sterilization (i.e., Chapters 8 and 10). Furthermore, only Chapters 8, 10, and 12 strictly apply the "need for contraception" definition with regard to childbearing desires, by removing all respondents who wanted a child at the time of the survey from the subsample, and retaining all respondents who wanted to have a child later, or did not want to have a/another child. The study sample in Chapter 9 does not exclude any respondents based on their childbearing desires – in order to test to what extent these desires relate to contraceptive behavior – whereas the subsample in Chapter 11 does not contain any respondents who wanted to have children then or subsequently

– so that all respondents had a similar range of contraceptive options, from reversible to permanent methods.

7.2 Measurements

Dependent variable: Contraceptive use

The easiest and most straightforward way to examine contraceptive behavior is to ask whether people use contraception or not (yes versus no; e.g., Bauer & Kneip, 2013; Janevic et al., 2012). Another option is to focus on one particular method or type of method, such as condom use (e.g., Sprecher, 2013), oral contraception (e.g., Moreau et al., 2006), long-acting reversible methods (e.g., Haimovich, 2009), or sterilization (e.g., Anderson et al., 2012; Bertotti, 2013; Bumpass et al., 2000). I opt to follow a third stream of contraception research; one that takes into account the wide range of contraceptive options. This approach acknowledges the variation in contraceptive choices available to many couples, and enables me to disentangle the different processes underlying the use of different method types.

For the operationalization of the dependent variable, I rely on three questions from the GGS model questionnaire. These – and all the other questions regarding fecundity – were only presented to male respondents with a female partner aged below 50, to female respondents aged below 50, and to respondents who ever had sexual intercourse with a person of the opposite sex. In Estonia, an additional filter was applied; these questions were only given to female respondents. The first two questions concern sterilization of the respondent and his/her partner; respondents were asked: "Have you been sterilized or have you had an operation that makes it impossible for you to have a child/more children?". The same question was asked about the partner. An important limitation of these two questions is that the reported sterilization procedure might have been for other than contraceptive reasons alone. The question concerning reversible methods was only presented to respondents who were physically able to have (additional) children. It asked: "Are you or your partner/spouse using or doing any of the things listed on this card to prevent pregnancy at this time? Please name all the things you use or do" and included a list of 11 reversible contraceptive options (Table 7.6). Alternatively, respondents could also mention that they "did not use or do anything". Overall, the identifiable contraceptive options were the same in most of the countries under investigation; five countries included additional options (most often the contraceptive patch), and four

countries removed one or more options from the answer categories from the model questionnaire (see Appendix 7.A for country-specific deviations from the model questionnaire). The Belgian GGS is the only one that differs significantly from the others, as it combined multiple method types in overarching categories rather than asking about each method separately. This categorization led to the exclusion of the country in Chapters 10 and 12 due to it being impossible to operationalize the contraceptive options in a comparable way to those in the other countries.

Together, male and female sterilization, the 11 reversible contraceptives, and non-use – 14 options in total – serve as the basis for the construction of the dependent variable. However, only Chapter 9 includes all 14 options; Chapters 10 and 11 do not include some for reasons related to the research questions, and Chapters 8 and 12 omit some options because of comparability issues with the FFS and DHS respectively.

The FFS asked respondents which contraceptive method they had used during the four weeks prior to the survey and provided 11 answer categories: (1) sterilization self, (2) sterilization current partner, (3) sterilization ex-partner, (4) pill, (5) intra-uterine device (IUD), (6) injections, (7) diaphragm, foam, jelly, (8) condom, (9) periodic abstinence (= rhythm method), (10) withdrawal, and (11) any other method. Up to two different methods could be reported. All ten country-specific versions of the FFS used in Chapter 8 are in line with the model questionnaire in asking about contraceptive use and cover the necessary contraceptive options, despite some minor exceptions. Only the answer categories that are similar in the FFS and the GGS are used in the analyses, which means that implants, Persona, and hormonal emergency contraception afterwards are excluded, given that these answer options are only available in the GGS. Sterilization is questioned in both surveys, but is omitted for reasons related to the research question.

The DHS asked which contraceptive method(s) respondents were using at the time, with one or more of the following answer categories: (1) female sterilization, (2) male sterilization, (3) pill, (4) IUD, (5) injectables, (6) implants, (7) condom, (8) female condom, (9) diaphragm, (10) foam/jelly, (11) lactational amenorrhea method (LAM), (12) rhythm method, (13) withdrawal, and (14) other. To enhance comparability between the DHS and the GGS, respondents using the female condom or LAM (only asked in the DHS), and Persona or hormonal emergency contraception (only asked in the GGS) are removed from the study sample in Chapter 12.

Table 7.6 Operationalization of the dependent variable

	Chapter 8	Chapter 9
Focus	Contraceptive efficacy	Contraceptive efficacy
Variable construction	Two dummy variables	Three categories
Did not use or do anything	No method	No method
Withdrawal	Cooperative method	Traditional method
Rhythm method	Cooperative method	Traditional method
Condom	Cooperative method	Modern method
Pills	Medical method	Modern method
Intra-uterine device (coil, loop)	Medical method	Modern method
Diaphragm, cervical cap	Medical method	Modern method
Foam, cream, jelly, suppository	Medical method	Modern method
Injectables (e.g., Depo-Provera)	Medical method	Modern method
Implants (e.g., Norplant)	-	Modern method
Persona	-	Modern method
Hormonal emergency contraception afterwards ("morning-after pill")	-	Modern method
Sterilization man	-	Modern method
Sterilization woman	-	Modern method

Table 7.6 continued

Chapter 10	Chapter 11	Chapter 12
Contraceptive efficacy	Gendered division of contraception	Contraceptive efficacy; gendered division of contraception
Five categories	Five categories	Four categories; three categories
No method	No method	No method
Natural family planning	-	Traditional method; male method
Natural family planning	-	Traditional method; female method
Barrier method	Male reversible method	Modern reversible method; male method
Short-acting female method	Female reversible method	Modern reversible method; female method
Long-acting female method	Female reversible method	Modern reversible method; female method
Barrier method	Female reversible method	Modern reversible method; female method
Barrier method	Female reversible method	Modern reversible method; female method
Short-acting female method	Female reversible method	Modern reversible method; female method
Long-acting female method	Female reversible method	Modern reversible method; female method
-	Female reversible method	-
-	Female reversible method	-
-	Male permanent method	Modern permanent method; male method
-	Female permanent method	Modern permanent method; female method

In all, the different combinations of method types that are used are thus dependent on the focus of each chapter, but at the same time also largely based on previous research. In Chapter 8, I examine the transition from cooperative to medical contraception and I use two dummy outcomes: one that distinguishes between those using cooperative methods and those not using them, and one that distinguishes between those using medical methods and those who do not (Table 7.6). Those using no method score 0 for both dummies. In Chapter 9, I look at multiple individual and contextual dynamics underlying less-effective and more-effective contraceptive behavior. To this end, three categories are constructed: (1) using no method, (2) using traditional methods, and (3) using modern methods. This subdivision is used for the analyses in Chapter 12 too, but here the modern methods are further subdivided into reversible versus permanent contraceptives. Chapter 10 also focuses on contraceptive efficacy, but the categorization is more specific and distinguishes between five groups: (1) using no method, (2) using natural family planning (the same as using traditional methods), (3) using barrier methods, (4) using short-acting female methods, and (5) using long-acting reversible female methods. Lastly, Chapters 11 and 12 introduce an alternative approach to contraception; instead of the common empirical examination of multiple contraceptive options in terms of their effectiveness, I additionally look at the gendered division of contraception between partners. Chapter 11 combines efficacy and partners' contraceptive division by differentiating between five categories: (1) using no method, (2) using male reversible methods, (3) using female reversible methods, (4) using male permanent methods, and (5) using female permanent methods. Chapter 12 includes two dependent variables: one that classifies contraception according to efficacy (see earlier) and one that classifies contraception according to the gendered division (respondents are either (1) using no method, (2) using a male method, or (3) using a female method).

More detail on these diverse constructions for the dependent variable is provided in the method section in each of the empirical chapters. However, one final note should be made. The GGS and DHS allow respondents to report all contraceptive methods that they were using at the time, and the FFS allows for two answers, which led many to list more than one. Previous research indicates that multiple contraceptive method use may be for many different reasons, such as backing up inconsistent use (e.g., missed pills), anxiety about method efficacy, pressure from the partner, etc. (Frohwirth, Blades, Moore, & Wurtz, 2016). However, further subdivision of the dependent variable would unnecessarily complicate understanding of the measurement of contraception, and would disrupt the focus of the main analyses. Given that no information is available on

the frequency of couples using a particular method, I follow other scholars in categorizing these respondents according to the most effective method used (e.g., Eeckhaut, Sweeney, et al., 2014; Janevic et al., 2012; Jones, Mosher, & Daniels, 2012; Mosher & Jones, 2010).

Independent variables

Table 7.7 gives an overview of the independent variables per empirical chapter. It should be noted that many variables overlap two or more of the chapters and – although their operationalization is often similar – that the construction of the variables might slightly differ. The method section in each chapter provides full details of all the variables. Here, I roughly discuss the reasoning behind and the construction of three groups of variables that are central to this dissertation: individual socioeconomic status, couple dynamics and macro-level gender equality.

Indicators referring to individual's socioeconomic position are used as proxies to measure a person's autonomy. Personal autonomy is considered key to access effective contraception – in particular for women – and previous research has repeatedly confirmed the link between social advantage and effective contraceptive practice (Eeckhaut, Sweeney, et al., 2014; Janevic et al., 2012; Martinez et al., 2006; Mosher & Jones, 2010; Serbanescu et al., 2004; Serbanescu & Seither, 2003; Spinelli et al., 2000). Two main socioeconomic indicators are relied on in virtually all the empirical chapters: education and employment. First, I focus on *educational attainment*, distinguishing between the lower, the middle, and the higher educated (except in Chapter 8, where I only separate the lower from the higher educated). Education is a form of human capital that develops habits, skills, resources, and abilities which enable individuals to achieve a better life and to enhance their sense of personal control (Mirowsky & Ross, 2003). According to the human capability approach, education provides both indirect and direct value (Sen, 1997). After all, it is not only associated with indirect benefits such as increased incomes, or better and safer jobs, but also relates to learned effectiveness and reflects a range of social competences (e.g., health-related knowledge, communication skills, making choices in a more informed way) (Braveman et al., 2005; Cutler & Lleras-Muney, 2006, 2010; Mirowsky & Ross, 2003; Sen, 1997). Second, *employment status* is taken into account in four of the five empirical chapters. I make a distinction between respondents who are employed, unemployed, or non-employed (e.g., because of study, retirement, parental leave, long-term illness or disability, homemaking, or military or

Table 7.7 Overview of independent variables per chapter

	Ch. 8	Ch. 9	Ch. 10	Ch. 11	Ch. 12
Individual-level variables					
Educational level	▪	▪	▪	▪	▪
Employment status	▪	▪	▪		▪
Income		▪	▪		
Desire to have children	▪	▪	▪		▪
Perceived cost of having children		▪			
Family values		▪			
Religiosity		▪			
Couple-level variables					
Educational heterogamy				▪	▪
Division of paid labor			▪		▪
Division of household labor			▪	▪	
Decision-making				▪	
Macro-level variables					
Prevalence of female part-time work		▪			
Prevalence of religious individuals		▪			
Gender equality		▪			▪
East-West dummy					▪
Control variables					
Gender	(▪)	▪	▪	(▪)	
Age	▪	▪	▪	▪	▪
Partner status	▪	▪	▪	▪	▪
Number of children	▪	▪	▪	▪	▪
Urban residence		▪	▪		▪
Gini					▪

Notes. (▪) Variable included as a sensitivity test

social service) (except in Chapters 8 and 12, where I only distinguish between those with and without employment). Despite the limited examination of the relationship between employment and contraceptive use (Spinelli et al., 2000), having paid work is widely recognized as an empowering factor, again, mainly for women. Female integration in the labor market relates to gender equality and, moreover, to women's ability to make decisions on fertility and contraception within the context of their own professional

careers (IPPF European Network, 2015). Indirectly, paid employment may also lift financial barriers to contraceptive use more generally.

A second group of variables deals with couple dynamics. On the one hand, I look at partners' comparative advantages in terms of external resources. Both the GGS and the DHS ask respondents for information about their own and their partners' education and employment status. I constructed a relative measure for *partners' education*, as a continuous variable in Chapter 11 (education woman minus education man), and as a categorical variable in Chapter 12 (both partners equally educated, the female partner is higher educated than the male partner, the male partner is higher educated than the female partner, or one of the partners is a student). I also account for *partners' occupation* as a categorical measure in both Chapters 10 and 12 (both partners are (not) employed, the female partner is employed and the male partner is not, the male partner is employed and the female partner is not). These operationalizations are based on Becker's (1991) human capital perspective, which is driven by the assumption that partners' specialization in either paid or unpaid labor is key to maximization of household utility, and on the relative resource thesis that states the partner with the highest education and employment status holds the better position in couple negotiations over decisions that have to be made (Lachance-Grzela & Bouchard, 2010; Shelton & John, 1996).

On the other hand, the structural differences between partners also affect the organization of a household (Coltrane, 2000; Lachance-Grzela & Bouchard, 2010; Shelton & John, 1996). I mentioned before that this organization – such as the *division of household labor* or *decision making* among partners – can be considered a "power outcome" that illuminates other relationship dynamics compared with partners' differentials in resources ("power bases") (Cromwell & Olson, 1975; Davis & Greenstein, 2013). Only part of the organization of a household can be explained by structural partner differences, given that other processes such as men's and women's gender display are important too (Carlson, Miller, Sassler, & Hanson, 2016). As a consequence, one partner might have a greater weight because of interaction processes within couples. The division of housework and decision making are measured in similar ways. Respondents were asked which partner carried out particular routine household tasks (i.e., preparing daily meals, doing the dishes, shopping for food, and vacuuming) and who made particular decisions (i.e., routine purchases for the household, occasional more expensive purchases for the household, the time the respondent spends in paid work, the time the respondent's partner spends in paid work, the way the children are raised, and social life

and leisure activities). Respondents could choose from seven categories: "always respondent", "usually respondent", "respondent and partner about equally", "usually partner", "always partner", "always or usually other persons in the household", or "always or usually someone not living in the household". In line with Geist and Cohen (2011), each category was given a numerical value, so that mean scores for both variables could be calculated (see method sections in Chapters 10 and 11).

The third and final group of measurements concerns *macro-level gender equality*. The contextual gender climate may act as a "discount factor" that counters women's autonomy at the individual and couple level (Blumberg, 1984), as mentioned earlier, and may therefore affect women's ability to make decisions about their own fertility (Xu et al., 2011). Macro-level gender equality has been measured in many ways because of the multidimensional character of the concept, but most measurements cover indicators concerning the gender gap in education, economy, politics, or health (Mills, 2010). For the purpose of Chapter 9, I look at the ratio of female to male median income and the percentage of women in politics at the regional NUTS 1 level (nomenclature of territorial units for statistics; see below), measurements that are based on own calculations using aggregated GGS data, and country-specific reports and documents respectively. In Chapter 12, the country-level Gender Inequality Index is relied on. This index reflects gender inequalities in reproductive health (i.e., maternal mortality and adolescent birth rates), empowerment (i.e., the proportion of parliamentary seats occupied by women, and the female to male ratio in secondary education or higher), and economic status (i.e., the female to male ratio in labor market participation). Scores range from 0 (full equality) to 1 (full inequality).

7.3 Analytical strategy

The empirical chapters rely on a multitude of statistical techniques and each chapter provides full details of the analytical approach used (Table 7.8). Nevertheless, some complexities relating to modeling logistic and multinomial regressions, differences in partner characteristics, and multi-country samples span a number of my studies. These are discussed below.

Table 7.8 Overview of analytical techniques per chapter

	Ch. 8	Ch. 9	Ch. 10	Ch. 11	Ch. 12
Dependent variable					
Binary response	▪				(▪)
Nominal response, ≥ 3 categories		▪	▪	▪	▪
Analytical strategy					
Individual level					
Logistic regression	▪				
Decomposition	▪				
Couple level					
Difference scores			▪		▪
Diagonal reference models				▪	
Contextual level					
Multilevel		▪			▪
Fixed effects			▪	▪	

Notes. (▪) Binary response variable included as a sensitivity test

Complexities in logistic and multinomial modeling

Contingent on the research questions, the dependent variable – contraceptive use – is either constructed by means of two categories (Chapter 8), or by means of three or more unordered[10] categories (Chapters 9 to 12). Logistic and multinomial regression techniques are used respectively. At first glance, the multinomial model can be considered a simple extension of the logistic model, as the former consists of a set of logistic regressions with multiple possible comparisons among the outcome categories rather than one comparison only (Long, 1997; Long & Freese, 2001; Van Rossem, 2010). However, when examining an unordered nominal dependent variable, the multinomial procedure differs in two aspects from a set of logistic regressions (Long, 1997; Long & Freese, 2001). First, whereas separate logistic regressions are each based on different

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[10] One might presume some sort of ordering between the outcome categories in terms of effectiveness, but given the lack of linearity (e.g., when perfectly used, withdrawal shows similar failure rates to condoms or diaphragms, and the gaps in effectiveness are not equal across the different categories (Trussell, 2011)), contraceptive use is considered a nominal variable. Moreover, the focus of the dissertation is on how to *not* only approach contraceptive methods in terms of their effectiveness, but to also look at the social characteristics of each method.

samples (namely, the sample that scores 1 on the reference group + the sample that scores 1 on category a, b, … n), the multinomial model estimates all comparisons simultaneously and therefore uses the data more efficiently. Second, the multinomial model imposes additional constraints compared with separate logistic regressions, by making sure that the model probabilities of all outcome categories add up to 1. These variations can cause the results of the two strategies to differ, although they are usually fairly similar (Long & Freese, 2001).

The assumptions for logistic and multinomial regression are largely the same (e.g., linearity of the effects between the independent and dependent variables, multicollinearity, omitted variable bias, etc.) (Van Rossem, 2010) and were tested (if possible) for all five empirical studies. An important form of bias that is often ignored in logistic and multinomial regression analysis is that omitted variables not only affect coefficients if these are correlated to the independent variables (similarly to ordinary least squares regression), but also if they are *not* correlated to the independent variables (Mood, 2010). These "unobservables" cause variation in the dependent variable, which is referred to as unobserved heterogeneity and hampers the interpretation of the results in logistic and multinomial models (Karlson, 2011; Mood, 2010). The extent of this problem and the way in which it should be handled are, however, the subject of debate among scholars. Some suggest that estimations are reasonably robust to unobserved heterogeneity when using particular types of models (e.g., Breen & Jonsson, 2000; Mood, 2010) or when identifying the unobserved component and directly controlling for it (e.g., Allison, 1999; Karlson, 2011), whereas others "merely" depict it as being mainly a matter of interpretation of the dependent variable and the effects (e.g., Buis, 2015). I follow Mood's (2010) influential approach. She argues that there are "no simple all-purpose solutions to the problems of interpretability and comparison of effect estimates" from logistic and multinomial regression analyses (Mood, 2010, p. 79). This results from the fact that scholars often want to simultaneously capture the non-linearity of the relationship, the comparability across groups or samples, the comparability across models, and the conditional effects. The transformation of odds to odds ratios[11] enables me to take into account the former (non-linearity) and the latter (indicating the conditional effects) problems. An additional advantage of using odds ratios instead of

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[11] I am aware that some disciplines refer to relative risk ratios instead of odds ratios when performing multinomial analyses. However, in sociology, it is common practice to rely on the term odds ratios in these models.

odds is the ease of interpretation. Furthermore, I also apply y-standardization[12], which enables me to compare the estimates among different models. This leaves me with the problem of unobserved heterogeneity hindering the comparison of results across groups, samples, etc. However, according to Mood (2010), there is no way to simultaneously tackle the issue of comparing across models and comparing across groups: whereas y-standardization only helps to enable comparison across models, heterogeneous choice models, for instance, only help to improve comparison among groups. I opted to improve the comparison across models, given that this serves the purposes of my analyses best (see Chapters 9, 10, and 12). The estimations across groups are interpreted with care.

Lastly, in addition to the similar assumptions in logistic and multinomial modeling, the latter requires an important extra assumption: independence of irrelevant alternatives (Long, 1997; Long & Freese, 2001). This implies that adding or deleting one or more outcome categories should not affect the odds among the remaining outcome categories. A commonly cited example of the violation of this assumption is as follows. Suppose that people can choose to go to work by car or on a red bus, and that the odds of taking the car or red bus are 1:1. The introduction of a new third commuting option, a blue bus, will not make car travelers suddenly decide to take the bus. Hence, the odds of taking the car or red bus will not remain 1:1, but will reduce to 1:2, given that half of those using the red bus will now use the blue bus. In other words, the "independence of irrelevant alternatives" assumption implies that the outcome categories in the dependent variable should be sufficiently independent and dissimilar. Although several tests have been developed to examine whether this assumption is violated or not, these generally yield inconsistent results and therefore provide little guidance (Long & Freese, 2001). Instead, care in defining and outlining the outcome categories is advised. I consider that this is the case for the various operationalizations of contraceptive practice used here; categories such as cooperative versus medical methods, traditional versus modern methods, etc. (Table 7.6) can be considered sufficiently dissimilar. Of course, some patterns can be detected when people switch between different methods (e.g., couples generally switch from more-effective to less-effective methods), but the multitude of

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[12] Y-standardization entails that the coefficients are divided by the sum of (1) the standard deviation of the predicted logits and (2) the assumed standard deviation of the error term. Note that (2) is always $\sqrt{3.29}$ or 1.81 in logistic or multinomial regression (Mood, 2010, p. 73).

reasons for switching from one to another method (e.g., disease protection, side effects) makes switching behavior not necessarily straightforward (Grady et al., 2002).

Analyzing partner differentials

When studying differences in partner characteristics, social science scholars often rely on either compound measurements or difference scores (Eeckhaut, Van de Putte, Gerris, & Vermulst, 2013). The first strategy, compound measurements, aims at constructing a categorical variable with all possible male/female combinations of a particular characteristic. Taking education as an example, it can be noted that these measurements often need to rely on a limited number of categories, as the number of subdivisions rises quickly, which is an important pitfall of the procedure. The consideration of only three educational groups (lower, middle, and higher educated), for instance, already leads to a variable with nine possible combinations. The second strategy, difference scores, is more frequently used. It tries to capture the extent of the variation in partners' characteristics, for instance by calculating the absolute numeric difference (e.g., man's years of education minus woman's years of education) or by computing a categorical difference variable (e.g., three categories: homogamy, education man > education woman, or education man < education woman). In line with researchers who examine the influence of heterogamy on contraception (e.g., Ford et al., 2001; Forste et al., 1995; Kusunoki & Upchurch, 2011; Manning et al., 2000; Mercer et al., 2009), I rely on the difference scores technique in Chapters 10 and 12 to assess partner differentials in educational attainment and employment status. Moreover, using difference scores leads to more parsimonious models compared with compound measurements. However, a point of particular interest (for both statistical methods) is that relative measurements cannot be included simultaneously in the models with absolute measurements for men's and women's education or employment status due to multicollinearity problems. Nevertheless, separate modeling did not hinder testing my hypotheses as I theorized each partner's autonomy separately from partners' relative advantage in both chapters.

Chapter 11 takes this a step further as the simplicity of the estimated model allows for a more complex statistical technique. Diagonal reference models can be used to simultaneously estimate the influence of the man's absolute education, the woman's absolute education, and the couple's relative education on contraceptive use (Eeckhaut, Stanfors, & Van de Putte, 2014; Eeckhaut et al., 2013). In addition, the relative effect of

the man's and woman's absolute educational level on contraception can also be determined. This procedure was initially developed to measure social mobility (Sobel, 1981, 1985; more recent examples in health research include Houle, 2011; Missinne, Daenekindt, & Bracke, 2015; Monden & de Graaf, 2013), but has proved useful to study status inconsistency and heterogamy effects as well (Eeckhaut, Stanfors, et al., 2014; Eeckhaut et al., 2013; Hendrickx, Degraaf, Lammers, & Ultee, 1993). The underlying assumption is that individuals' behaviors and values are shaped by their prior and current status in education, employment, etc. (Sobel, 1981). Hence, as immobile individuals or homogamous couples remain within their own group, they are not influenced by the behaviors and values of other groups. This makes them the "referents" with which mobile individuals or heterogamous couples are compared. The statistical reasoning behind the technique is provided in the method-section of the chapter.

Multilevel and fixed effects models

The cross-national character of both research aims results in empirical examinations that take the context into account. Apart from Chapter 8, which relies on country-specific analyses, all the other studies are based on a pooled dataset of individuals residing in different countries. This hierarchical structure of individuals being nested in countries needs to be taken into account (Hox, 2010). This is important, because individual observations are not completely independent, as people who live in the same country tend to be more similar to each other than to people who live in different countries. As a result, the average correlations measured in same-country individuals will be higher than those measured in different-country individuals, and the estimates of the standard errors of conventional statistical tests will be too small, leading to spurious significant results.

The use of multilevel analyses is common practice to model this clustering, but a widely debated problem in literature involves the question of how many countries are needed in order to carry out meaningful, unbiased analyses (Maas & Hox, 2004, 2005; Stegmueller, 2013). Confusingly, suggestions range from 10 to 100, inconsistency that seems to relate to differences in simulation designs and conditions. In Chapter 12, I rely on multilevel models to estimate the effects of individuals in 17 countries. In view of this small number, sensitivity analyses were performed by applying the Markov Chain Monte Carlo estimation procedure – which is considered a more robust and conservative test in cases with few higher-order units – (Stegmueller, 2013) and these yielded similar

results. In Chapter 9, the sample only consists of 11 countries. Therefore, I added a level in-between the individuals and the countries, meaning that individuals (level 1) are now nested in regions (level 2), which in turn are nested in countries (level 3). The integration of the regional level, based on the NUTS 1 classification, provided me with sufficient cases (N = 87) to include a few macro-level variables as well as some cross-level interactions in the models (all the models are limited to a maximum of one cross-level interaction effect). The country level was only taken into account to control for variance, but includes no variables[13].

A different picture can be seen for Chapters 10 and 11, given that the analyses contain a small number of countries (respectively ten and four countries) and do not include any higher-order variables. Fixed effects models are applied, as these are particularly suited to handle a small number of countries; the approach has been proved a valuable alternative to conventional multilevel models when considering only lower-order effects (Möhring, 2012). Specifically, the inclusion of N-1 country dummies in the analyses accounts for variance at the country level. Sensitivity analyses that estimated the same models in a multilevel design – thereby only including the country as an extra level to account for the variance – produced similar results.

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[13] In multilevel analyses, some scholars extend the calculation of intra-class correlations – that define the variance at each level in multilevel modeling with a continuous outcome – to logistic and multinomial regressions (Hox, 2010). However, this extension seems not that straightforward (e.g., because the variance parameters for these types of models are strongly contingent on the estimation procedure or software that is used) (Browne, Subramanian, Jones, & Goldstein, 2005; Hox, 2010). Therefore, intra-class correlations are not discussed in the papers.

8. THE SHIFT TOWARD A MEDICAL CONTRACEPTIVE MODEL IN EUROPE: WHERE ARE WE NOW?[14]

The introduction of highly effective contraceptives in the 1960s fundamentally changed couples' reproductive behavior. At different paces and to different extents, European countries witness(ed) a shift from a contraceptive model based on natural family planning and condom use ("cooperative methods") toward a model dominated by the pill, the intra-uterine device (IUD), and other medical methods. The current study aims to examine the latest course of this transition by (1) comparing the trends in contraception in the 1990s and the 2000s in different European countries and sociodemographic groups, and (2) determining whether changes over the two time periods can be attributed to changes in the composition of the population or to changes in men's and women's behavior. We combine data from the Fertility and Family Survey (FFS; 1988-1998) and the Generations and Gender Survey (GGS; 2004-2011) for ten European countries. Country-specific and period-specific logistic regression analyses and decomposition analyses are used to address our research questions. The results confirm the growing dominance of the medical contraceptive model. All the countries examined show an increase in the use of medical contraceptives between the 1990s and the 2000s. At the same time, most countries also witness a rise in cooperative methods, which suggests that the former does not merely substitute for the latter. The change in both cooperative and in medical methods is attributable to a combination of changing population compositions and altering behavior. Large variations between countries are, however, present. Overall, the results provide more insight into the great variation in sociodemographic inequalities in contraception among different methods, over time, and across contexts.

8.1 Introduction

The increasing availability of new contraceptive options (i.e., the birth control pill and the IUD) in the second half of the twentieth century in Europe is often depicted as one of the most fundamental changes in recent decades (te Velde, 2005). Accordingly, scholars refer to a "contraceptive revolution" or a transition toward highly effective contraceptive practice (Frejka, 2008a; Westoff & Ryder, 1977). This has entailed a shift

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[14] Dereuddre, R., Delaruelle, K., & Bracke, P., *submitted.*

away from a traditional model, in which people relied on natural family planning or condoms, toward a medicalized and female contraceptive model (Le Guen et al., 2015). Whereas the former relies on cooperative methods that require both partners' involvement, the latter provides women with greater control over pregnancy prevention, given that they can use contraception without negotiating with their male counterpart (Dalla Zuanna et al., 2005; Fennell, 2011).

Despite these general changes in the contraceptive landscape, large variations in the timing and pace of the transition to medical contraceptives can be noted (Cleland, 2009; Frejka, 2008a). Specifically, regions in which the transition is considered complete may be distinguished from regions in which it is still running its course (Frejka, 2008a). In Northern Europe (NE) and Western Europe (WE), feminist movements obtained the legalization of contraception in the 1960s (Le Guen et al., 2015). These regions are considered the forerunners, as the transition had almost immediate effects in the subsequent years. Reliance on natural family planning quickly became negligible; today, only 3 percent of contraceptive users practice these methods (United Nations, 2015b). In addition, the prevalence of male condom use is similar in the two regions (NE: 9 percent; WE: 7 percent), though this levelling occurred only recently (United Nations, 2013, 2015b). Initially, the Northern region had markedly higher levels of condom use than the Western region, given that the use of condoms for pregnancy or disease prevention was strongly established and not frowned upon, and condom users were perceived as more-responsible sex partners (RFSU, 2013; United Nations, 2013). The situation in Southern Europe (SE) is considered a paradox, because the decline toward its very low fertility levels was accomplished by the persistent use of less-effective cooperative methods (Dalla Zuanna et al., 2005; De Rose, Racioppi, & Zanatta, 2008; Gribaldo et al., 2009). The spread of medical contraceptives only started in the 1980s and 1990s (Frejka, 2008a), which has resulted in the remaining high prevalence of natural family planning (15 percent of contraceptive users) and condom use (21 percent) to date (United Nations, 2015b). This lag was mainly due to opposition from the Catholic Church, resistance against women's control over contraception that might have disrupted the traditional gender system, and physicians' objections to prescribing the pill (Dalla Zuanna et al., 2005). Also Central and Eastern Europe (CEE) is nowadays still characterized by high levels of cooperative methods (natural family planning: 14.5 percent; condom use: 24.1 percent) (United Nations, 2015b). This is a remnant of the communist period, during which the distribution of correct information on contraceptives was lacking, and the use of the pill and IUDs was discouraged by health

care professionals, who overstated the negative side effects (Popov & David, 1999; Serbanescu & Seither, 2003). Despite the sharp rise in medical methods in the 1990s after the fall of the Iron Curtain (Frejka, 2008a; Westoff, 2005), some misperceptions of these methods as unhealthy and unsafe remain to this day, and are accompanied by a lack of knowledge about their effectiveness (IPPF European Network & UNFPA, 2012; Serbanescu & Seither, 2003). The high prevalence of condom use can be associated with the steep increase in the prevalence of sexually transmitted infections and HIV following the societal transformations during the 1990s (Amirkhanian, 2012; Serbanescu et al., 2004; Serbanescu & Seither, 2003).

Overall, the step toward medical contraceptives took place against a background of profound social and demographic changes, including a rise in cohabitation and out-of-wedlock childbirth, stronger attitudes toward the postponement of parenthood, declining fertility levels, and women's increasing educational attainment and economic independence (Lesthaeghe & Neels, 2002; McDonald, 2000a; Sobotka, 2008). Moreover, medical contraception may have facilitated these changes to a certain extent. Scholars suggest, for instance, that the introduction of the birth control pill disconnected fertility and parenthood, which made the social justification for marriage as the sole context for sex less relevant (Nock, 2005). Further, highly effective contraceptives enabled women to organize their family lives according to their educational and employment career paths, and – particularly in NE and WE – subsequently raised their labor force participation sharply (Bailey, 2006; IPPF European Network, 2015).

Accordingly, previous research has attempted to unravel the sociodemographic clustering of contraceptive behavior. Studies generally observe that the cohabiting rather than the married, those with children rather than the nulliparous, the higher educated rather than the lower educated, and those in paid employment rather than those with no employment, display more-effective contraceptive behavior (Dalla Zuanna et al., 2005; Dereuddre, Van de Putte, & Bracke, 2016; Eeckhaut, Sweeney, et al., 2014; Haimovich, 2009; Janevic et al., 2012; Le Guen et al., 2015; Moreau et al., 2006; Serbanescu et al., 2004; Spinelli et al., 2000; Sweeney et al., 2015). Surprisingly little European research, however, looks at whether the links between socioeconomic and family characteristics of men and women, and contraceptive behavior are stable over time, and how sociodemographic evolutions relate to changes in the uptake of cooperative or medical methods of contraception. Studies carried out in NE and WE after the introduction of the pill in the second half of the twentieth century indicate that effective contraceptives

were easily accepted, that medical methods were not harmful to health, and that fears about sexual immorality were largely unjustified, which quickly led to reduction in research interest in contraceptive practice (Oddens, 1996). In addition, in the post-Soviet region, research is limited despite the well-known weakness of family planning programs (Janevic et al., 2012).

Therefore, the aim of the current paper is: (1) to review how the use of cooperative and medical methods has changed in the past decades across different European countries and various sociodemographic groups, and (2) to determine whether and to what extent these changes can be attributed to changes in the composition of the population or changes in the association between sociodemographic characteristics and contraception. In the analysis, we distinguish between two periods: the 1990s, for which we use data from the FFS (1988-1998), and the 2000s, based on data retrieved from the GGS (2004-2011). Country-specific and period-specific logistic regression models and decomposition analyses are combined to enable clear comparisons between the two time periods.

8.2 Method

Data

Two data sources are used to compare contraceptive behavior before and after the turn of the millennium: the FFS and the GGS. The FFS project was started in 1988 and carried out until the end of the 1990s in 22 European countries, together with Canada and New Zealand (Festy & Prioux, 2002). Cross-sectional representative data with an average of more than 5000 respondents per country was collected. The age range differs across the countries included, but overall, was mainly restricted to reproductive ages (lower limit: 15-22 years old; upper limit: 39-69 years old). Based on the experiences in the first countries surveyed, sampling guidelines and two model questionnaires (one for men and one for women) were introduced in 1992 to enhance comparability between the participating countries. At the end of the project, a proposal to collect new and comparable data was approved, which resulted in the launch of the Generations and Gender Programme in 2000. The GGS was initially designed as a pan-European panel survey, including 17 European countries plus Australia and Japan (UNECE, 2005). The aim was to collect nationally representative samples of men and women between 18 and 79 years old over three waves, with a three-year interval between them. We use data from

the first wave, collected between 2004 and 2011, depending on the country. Also the GGS involves extensive efforts to ensure cross-country comparability by providing standard instruments (i.e., the survey design, the questionnaire, and definitions and instructions) (Vikat et al., 2007).

In this paper, we focus on ten European countries for which information on contraception, and socioeconomic and family characteristics was gathered in both surveys: Austria, Belgium, France, Germany, Norway, Bulgaria, the Czech Republic, Estonia, Lithuania, and Poland (see Appendix 8.A for details about the data collection). Unfortunately, no data about contraceptive practice is available in the GGS for SE. Most concepts and definitions used in the FFS and GGS are similar (Vikat et al., 2007) and we only include answer categories that were questioned in both projects.

The population of interest covers men and women aged between 20 and 40[15] who are in a heterosexual relationship. Only couples who ever had sexual intercourse, who are not (trying to become) pregnant, who are physically able to have children (thereby also excluding contraceptive sterilization[16]), and who have no desire for (additional) children at the time of the survey are included. Missing values are deleted listwise. The final total sample consists of 39,360 respondents (FFS = 23,436; GGS = 15,924).

Measurements

Dependent variables. Contraceptive use is assessed by two dummy variables that indicate the method the respondent or his/her partner is using at the moment of the survey. The first dummy distinguishes between respondents relying on *cooperative methods* (i.e., withdrawal, periodic abstinence/rhythm method, male condom) and those who do not. The second dummy distinguishes between respondents who practice *medical methods*

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[15] Although a wider age range is available for many country-periods, restricting the data to respondents aged between 20 and 40 is necessary to ensure cross-country comparability.

[16] Sensitivity analyses that include sterilized respondents and respondents with a sterilized partner (as part of those using medical methods, see below) do not differ substantially from the analyses in the presented paper (Appendices 8.B and 8.C). Because of the focus of the current study – the shift toward reversible medical methods following their introduction in the 1960s – we restrict the study sample to respondents using reversible contraceptive methods and those who are not using contraception.

(i.e., the pill, IUD, injections, diaphragm, spermicides) and those who do not[17]. The dummy variables are not exclusive: respondents who use a combination of cooperative and medical methods (N = 1470) are given a score of 1 on both dummies[18]. Further, men and women who are not using any contraception (N = 9372) are given a score of 0 on both dummies. The use of implants, Persona, and hormonal emergency contraception afterwards were only included in the GGS, and the use of the contraceptive patch only in a few of the GGS countries. Therefore, respondents practicing these methods are omitted from the sample. Also those using "other" methods are excluded.

Independent variables. We consider a number of socioeconomic and family characteristics that have been linked to contraceptive behavior in previous studies. *Educational attainment* is derived from the cross-nationally comparable ISCED categorization. We distinguish between the lower educated (ISCED 0-4; reference category) and the higher educated (ISCED 5-6). *Employment status* is also coded as a dummy variable: those who are in paid employment versus those who are not employed (reference group). *Partner status* indicates whether the respondent is either married or not married (reference category). We also add the *number of biological children* for each respondent as a categorical factor, that contrasts having (1) no children (reference category), to having (2) one child, (3) two children, or (4) three or more children. Lastly, the variable *desire for children* differentiates between respondents who intend to have (additional) children later and those who do not want any (more) children (reference category).

All models are controlled for *age*. To account for nonlinear effects, age is coded into four categories: (1) 20-24 (reference group), (2) 25-29, (3) 30-34, and (4) 35-40.

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[17] The answer categories in the Belgian GGS differ from the standard ones. Contraceptive users could choose from five categories: (1) withdrawal, rhythm method, (2) condom, (3) the pill, injectables, morning-after pill, IUD, implants, (4) sterilization of man or woman, and (5) other contraceptive methods. Men and women who chose the first or second option are classified as using cooperative methods, those who chose the third option as using medical methods. Respondents who are sterilized or practice other methods are omitted.

[18] Sensitivity analyses that exclude men and women who rely on both cooperative and medical methods have similar results to those that are presented below (Appendices 8.D and 8.E).

Analytical strategy

In the first step, we look at how contraceptive behavior evolved between the 1990s (FFS) and the 2000s (GGS). Descriptive Figure 8.1 shows how the prevalence of using cooperative methods and using medical methods changed over time. In addition, we assess the evolution of multiple socioeconomic and family characteristics over the same time span. For both sets of characteristics, the p-values for the percentage differences are calculated to determine whether changes are significant.

In the second step, two complementary approaches are applied to examine the change in contraceptive practice by respondents' sociodemographic status. We first perform logistic regression analyses to investigate the association between respondents' marital status, number of children, childbearing desire, education and employment status[19], and their contraceptive use. Separate analyses are conducted for the use of cooperative and medical methods, and for each country-period. In this way, we can compare how the associations changed over the two study periods in each country. Next, decomposition analyses are used to determine whether these changes can be ascribed to differences in the distribution of the characteristics (i.e., the composition of the population, or *endowments*) or to differences in the coefficients (i.e., the behavior of men and women, or *effects*) (Powers, Yoshioka, & Yun, 2011). We rely on the "mvdcmp" command in the Stata software package, which is specifically designed for non-linear outcomes. This approach offers advantages over the well-known Blinder-Oaxaca model, in that it allows us to handle path dependency and to overcome the identification problem related to the choice of a specific reference category.

8.3 Results

Descriptive statistics

First, we investigate the trends in contraceptive practice during the recent decades by comparing the prevalence of cooperative and medical method use in the 1990s and the 2000s for ten European countries (Figure 8.1; Table 8.1). The countries are ranked according to the overall prevalence of contraceptive practice in the 1990s. For our

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[19] Sensitivity analyses that additionally control for the gender of the respondent produce similar results to those presented in the paper (Appendices 8.F and 8.G).

purposes, this is calculated by summing the percentage of people using cooperative and/or medical methods, thereby excluding contraceptives that are not taken into account in this study (e.g., implants, sterilization). Bulgaria is characterized by the lowest percentage of respondents who use any method in the 1990s (51.7%), and France by the highest (85.5%) (results not shown).

Figure 8.1 Percentages of respondents using cooperative and medical methods in the 1990s and 2000s
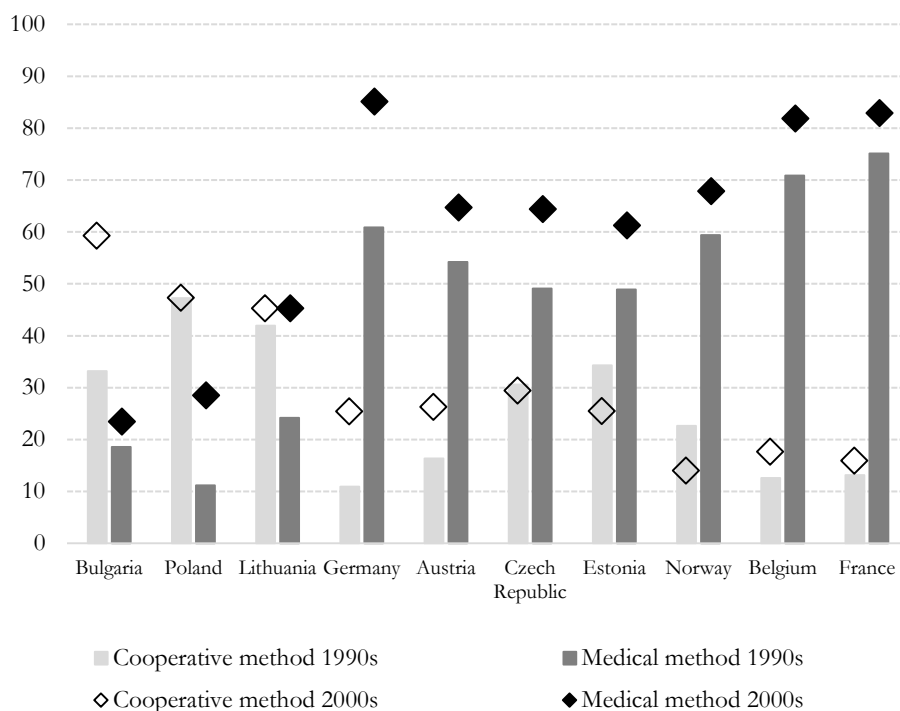
When comparing cooperative and medical methods in the two time periods, the use of the former is only higher in Bulgaria and Poland (Figure 8.1; Table 8.1); the two countries with the lowest overall prevalence of contraception. This contrasts with the other countries, in which the use of medical methods clearly dominates. Lithuania can be situated somewhere in between; the country was characterized by a cooperative model in the 1990s, but the prevalence of cooperative method use and medical method use became similar later (45.3%). Accordingly, the use of medical methods generally increases (from +4.8% in Bulgaria to +24.2% in Germany). It is somewhat surprising to note that the prevalence of cooperative method use also rises in most countries (from

Table 8.1 Descriptive statistics [a]

	Bulgaria				Poland				Lithuania				Germany				Austria			
	1990s [b]	2000s	change	sign	1990s	2000s	change	sign	1990s	2000s	change	sign	1990s	2000s	change	sign	1990s	2000s	change	sign
N	1013	2256			1935	2370			1935	1358			5772	1027			2037	1873		
Contraceptive use																				
Cooperative method	33.2	59.3	26.1	***	42.0	47.3	0.1		42.0	45.3	3.3		10.9	25.4	14.5	***	16.3	26.3	10.0	***
Medical method	18.6	23.4	4.8	**	24.2	28.5	17.3	***	24.2	45.3	21.1	***	60.9	85.1	24.2	***	54.2	64.7	10.5	***
Family characteristics																				
Married	95.8	77.8	-18.0	***	96.2	79.1	-14.3	***	96.2	68.7	-27.5	***	61.5	63.1	1.6		62.5	44.4	-18.1	***
One or more children	95.0	91.9	-3.0	**	92.4	84.8	-0.6		92.4	74.9	-17.5	***	63.5	70.6	7.1	***	69.0	56.4	-12.6	***
Desire for children	34.0	29.9	-4.1	*	49.8	65.3	40.8	***	49.8	63.5	13.7	***	53.5	44.5	-9.0	***	43.8	69.6	25.7	***
Socioeconomic characteristics																				
High educated	28.0	19.3	-8.7	***	27.6	30.3	21.0	***	27.6	25.8	-1.8	***	15.4	20.5	5.2	***	20.0	18.4	-1.7	
Employed	64.1	62.8	-1.3		82.0	67.5	-16.6	***	82.0	74.2	-7.8	***	69.4	65.4	-4.0	*	78.7	72.8	-5.9	***

Notes. [a] *z*-score calculated by dividing the percentage difference by the standard error of the percentage difference; [b] The country-period only includes female respondents due to data limitations; [c] The Norwegian FFS subsample does not contain any respondents who are not employed. * p < .05, ** p < .01, *** p < .001

Table 8.1 continued.

	Czech Republic				Estonia				Norway				Belgium				France			
	1990s	2000s	change	sign	1990s	2000s [b]	change	sign	1990s [c]	2000s	change	sign	1990s	2000s	change	sign	1990s	2000s	change	sign
N	1039	1216			1405	526			1883	2386			3231	1008			2239	1904		
Cooperative method	30.6	29.4	-1.2		34.3	25.5	-8.8	***	22.7	14.0	-8.7	***	12.6	17.7	5.0	***	13.1	15.9	2.8	*
Medical method	49.1	64.4	15.3	***	48.9	61.2	12.3	***	59.4	67.9	8.5	***	70.8	81.8	11.0	***	75.1	82.9	7.8	***
Married	89.1	64.4	-24.7	***	67.3	51.3	-15.9	***	70.3	41.4	-28.9	***	69.9	43.6	-26.4	***	39.2	45.4	6.3	***
One or more children	89.7	72.1	-17.6	***	86.8	77.4	-9.4	***	77.7	64.0	-13.7	***	57.5	58.8	1.3		67.5	63.3	-4.2	**
Desire for children	47.7	51.4	3.7		51.5	51.9	0.4		62.3	48.1	-14.2	***	54.7	60.3	5.6	**	62.1	56.3	-5.8	***
High educated	10.1	15.0	4.9	***	18.6	34.2	15.6	***	23.5	43.3	19.8	***	8.7	45.0	36.3	***	19.7	40.6	20.9	***
Employed	72.8	67.8	-5.0	**	75.4	66.9	-8.5	***	100.0	77.4	-		84.8	77.1	-7.7	***	70.9	73.7	2.9	*

+2.8% in France to +26.1% in Bulgaria), but not in Estonia (-8.8%) or Norway (-8.7%). The change in cooperative method use in Poland, Lithuania, and the Czech Republic is negligible.

During the same period, a clear change in the sociodemographic characteristics of the population can be noted (Table 8.1). Despite the between-country variation, many countries are characterized by a decline in the proportion of respondents who are married, who have children and who are in paid employment, and an increase in the percentage of respondents with a higher level of education. The developments in men's and women's childbearing desire are less clear; four of the countries indicate a significantly higher percentage of respondents who want (more) children whereas four others demonstrate a significantly lower percentage.

Logistic regression and decomposition analysis

Tables 8.2 and 8.3 show the logistic regression models for cooperative and medical methods respectively, for each country-period separately. Certain socioeconomic and family characteristics are associated with higher or lower method use in multiple countries, and some similar shifts in behavior can be noted.

For cooperative methods, we find significant variations by the number of children and education. Three different patterns can be detected for the association between the number of children and using cooperative contraceptives (Table 8.2). In Bulgaria and France, no differences in use between respondents with and without children can be observed in the 1990s whereas those without children have a higher likelihood of using cooperative methods in the 2000s. An opposite trend is found in Poland, where differences in cooperative practice linked to the number of children vanished over time. Lastly, the analyses for Lithuania, Germany, and Norway reveal both emerging and disappearing group differences, depending on the number of children. For education, two trends can be distinguished. In some countries, no significant difference between contraceptive use by the lower and higher educated is present in the 2000s, although the latter group had a higher reliance on cooperative methods in the 1990s. On the other hand, the initial educational gap can also remain, as is the case for Poland, Germany, and Norway, or instead become significant, as is the case for Austria and Belgium. The remaining indicators – being married, having a desire for children and being in paid

Table 8.2 Logistic regression analysis for the association between family and socioeconomic characteristics, and the use of cooperative methods [a]

	Bulgaria 1990s[b]		Bulgaria 2000s		Poland 1990s		Poland 2000s		Lithuania 1990s		Lithuania 2000s		Germany 1990s		Germany 2000s		Austria 1990s		Austria 2000s	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.578		3.360	***	0.769		0.992		0.436	**	1.756	***	0.172	***	0.391	***	0.174	***	0.384	***
Family characteristics																				
Married (ref. = not married)	0.878		0.992		0.804		1.174		1.299		0.864	*	0.622	***	0.836		0.771		1.257	
Number of children (ref. = no children)																				
One child	0.851		0.384	***	1.616	**	0.763		1.268		0.625	*	0.737	*	0.871		0.819		0.949	
Two children	1.166		0.458	**	2.123	***	0.771		1.376		0.661		0.811		1.042		0.961		0.725	
Three or more children	0.816		0.368	***	1.740	***	0.889		1.798	*	0.802		0.685		1.866	*	0.641		0.680	
Desire for children (ref. = no desire)	1.107		1.145		1.023		1.142		0.951		1.245		1.067		1.636	**	1.294		1.445	*
Socioeconomic characteristics																				
High educated (ref. = low educated)	1.402	*	0.977		1.607	***	1.241	*	1.503	***	1.109		1.493	***	1.786	**	1.040		1.820	***
Employed (ref. = not employed)	0.924		1.034		0.979		1.052		1.075		1.010		1.096		1.107		1.338		0.692	**

Notes. [a] All models are controlled for respondents' age; [b] The country-period only includes female respondents due to data limitations; [c] The Norwegian FFS subsample does not contain any respondents who are not employed. * p < .05, ** p < .01, *** p < .001

Table 8.2 continued.

	Czech Republic 1990s		Czech Republic 2000s		Estonia 1990s		Estonia 2000s[b]		Norway[c] 1990s[c]		Norway 2000s		Belgium 1990s		Belgium 2000s		France 1990s		France 2000s	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.626	*	2.716	***	1.066		0.852		0.238	***	0.197	***	0.107	***	0.302	***	0.214	***	0.381	***
Married	0.785		1.118		0.834		0.787		1.426	*	1.769	***	1.005		1.008		0.985		0.497	***
One child	0.990		0.903		0.866		0.563		0.901		0.906		0.741		0.900		0.763		0.812	
Two children	0.846		0.698		0.967		0.715		1.121		0.508	**	0.968		0.743		0.886		0.832	
Three or more children	0.805		0.777		1.036		0.763		1.586	*	0.653		1.174		0.752		0.986		0.410	**
Desire for children	0.990		1.158		1.111		0.962		1.175		0.862		1.167		1.262		1.229		1.299	
High educated	1.740	*	1.162		1.362	*	1.313		1.400	*	1.503	**	1.215		1.644	**	1.690	***	1.062	
Employed	0.581	**	0.837		0.859		0.805		-		1.046		0.806		0.765		0.676	**	0.789	

Table 8.3 Logistic regression analysis for the association between family and socioeconomic characteristics, and the use of medical methods [a]

	Bulgaria				Poland				Lithuania				Germany				Austria			
	1990s [b]		2000s		1990s		2000s		1990s		2000s		1990s		2000s		1990s		2000s	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.110	***	0.230	***	0.142	***	0.731	*	0.148	***	0.689	*	2.261	***	21.499	***	0.174	***	0.384	***
Family characteristics																				
Married (ref. = not married)	0.722		1.200		0.380	***	0.805		0.572		1.053		0.765	***	0.861		0.774	*	0.579	***
Number of children (ref. = no children)																				
One child	1.838		0.887		2.397	**	0.677	*	2.597	**	0.867		1.211	*	1.071		1.084		0.629	**
Two children	1.492		0.657		1.891	**	0.875		2.822	**	0.880		1.501	***	1.013		1.212		1.001	
Three or more children	0.264		0.411	**	1.599		0.621	*	1.932		0.653		1.001		0.467	*	0.715		0.921	
Desire for children (ref. = no desire)	0.672	*	0.751	*	0.512	***	0.685	**	0.665	**	0.848		0.688	***	0.982		0.611	***	0.516	***
Socioeconomic characteristics																				
High educated (ref. = low educated)	1.644	**	1.542	***	2.516	***	1.470	***	1.104		1.212		1.234	**	0.503	**	0.842		0.750	*
Employed (ref. = not employed)	1.175		1.355	*	0.841		1.175		1.085		1.515	**	0.810	**	0.943		0.734	*	1.292	*

Notes. [a] All models are controlled for respondents' age; [b] The country-period only includes female respondents due to data limitations; [c] The Norwegian FFS subsample does not contain any respondents who are not employed. * p < .05, ** p < .01, *** p < .001

Table 8.3 continued.

	Czech Republic				Estonia				Norway				Belgium				France			
	1990s		2000s		1990s		2000s [b]		1990s [c]		2000s		1990s		2000s		1990s		2000s	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.809		4.179	***	0.197	***	0.725		1.516	**	3.019	***	3.611	***	5.186	***	3.644	***	5.109	***
Married (ref. = not married)	0.879		1.205		1.107		0.964		0.736	*	0.771	*	0.527	***	0.781		0.691	**	1.476	*
One child	0.848		0.881		2.687	***	3.250	***	1.075		0.570	***	1.658	***	0.616	***	1.309		0.708	
Two children	1.418		1.107		3.893	***	2.253	*	1.340		0.993		2.164	***	1.074		2.073	***	0.972	
Three or more children	1.270		0.885		4.338	***	2.295	*	1.035		1.029		1.693	**	0.835		1.703	*	1.073	
Desire for children (ref. = no desire)	0.632	**	1.076		0.969		0.507	*	0.441	***	0.665	**	0.461	***	1.050		0.446	***	0.611	**
High educated (ref. = low educated)	1.289		1.074		1.332	*	1.067		0.872		0.964		0.858		1.093		1.051		1.111	
Employed (ref. = not employed)	1.834	***	1.882	***	1.797	***	1.975	**	-		1.142		1.285	*	1.211		1.381	**	1.513	**

employment – appear largely unrelated to cooperative method use and no clear patterns emerge.

Turning to the observations for medical contraceptives, the patterns by marital status remain similar across the two periods in most countries, except for Poland, Germany, and Belgium, where the unmarried relied more on medical methods than the married in the 1990s, a difference that is no longer significant in the 2000s (Table 8.3). As for the cooperative methods, we find two opposing trends related to the number of children, with some countries no longer displaying significant differences by the number of children in the 2000s and other countries having an emerging (or reversing in the case of Poland) gap between those with and those without children. Furthermore, across most of the countries and periods, a negative relationship is found between having a desire for children later and using medical methods. However, this association disappears over time in Lithuania, Germany, the Czech Republic, and Belgium. For education, the higher educated are more likely to rely on medical methods in Bulgaria, Poland, Germany and Estonia, an association that fades away in the 2000s in Estonia and is reversed in the case of Germany. For Austria, the lower educated also have a higher use of medical methods in the 2000s than their higher educated counterparts. The patterns for employment remain similar for most countries.

Thus far, the logistic regression models enabled us to examine whether associations between specific sociodemographic characteristics and contraceptive behavior differ between the 1990s and 2000s, but it remains unclear whether these changes can be attributed to differences in the composition of the population or in the effects of the indicators. Therefore, we carry out a decomposition analysis to take a closer look at our parameters (Table 8.4). With regard to the cooperative methods, three "country clusters" can be identified. The change in cooperative method use in Austria and Estonia relates to both compositional and effect changes. For instance, for Austria, if the composition of the population had remained the same between the 1990s and 2000s, cooperative method use would have been 2.0% lower; if the behavior had not changed, cooperative method use would have been 8.0% lower. For other countries, the decomposition analysis indicates that all the differences are related to changes in the effects. Bulgaria serves as an example. We mentioned earlier that this country has the largest increase in cooperative method use; Table 8.4 now shows that this increase of 26.1% is a composite of 0.4% increase due to compositional change and 25.8% increase because of changing effects. The changes in cooperative method use in Germany, Norway, and France can

Table 8.4 Decomposition analysis of the change in cooperative and medical method use (1990s–2000s) [a]

	Bulgaria		Poland		Lithuania		Germany		Austria		Czech Republic		Estonia		Norway [b]		Belgium		France	
	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign
Change in cooperative method use	0.261	***	0.001		0.033		0.145	***	0.100	***	-0.012		-0.088	***	-0.086	***	0.050	***	0.028	*
Due to differences in endowments	0.004		0.014		0.036	**	0.004		0.020	*	0.010		0.026	*	-0.015		0.028	*	-0.004	
Due to differences in effects	0.258	***	-0.013		-0.003		0.141	***	0.080	***	-0.022		-0.114	***	-0.071	***	0.022		0.032	**
Change in medical method use	0.049	**	0.174	***	0.210	***	0.242	***	0.105	***	0.153	***	0.123	***	0.085	***	0.110	***	0.078	***
Due to differences in endowments	-0.010		-0.007		-0.010		-0.019	**	-0.017	*	-0.014		-0.023		0.019		0.013		0.013	**
Due to differences in effects	0.059	***	0.180	***	0.221	***	0.262	***	0.122	***	0.167	***	0.147	***	0.065	**	0.097	***	0.065	***

Notes. [a] The change coefficient might slightly differ from the one in Table 8.1 because of rounding. All models include respondents' age, marital status, parity, desire for children, education and employment status; [b] The Norwegian FFS subsample does not contain any respondents who are not employed. * $p < .05$, ** $p < .01$, *** $p < .001$

be interpreted in the same way. Lastly, Lithuania and Belgium show an opposite pattern with the changes in the composition of the population being most relevant to the overall change. In general, despite country-specific variations, it is mainly changes in the composition and the effects of the number of children and educational attainment that contribute to shifts in cooperative method use over time (Appendix 8.H shows the contribution of each indicator separately for cooperative method use), which aligns with the logistic regression models.

The patterns of change for medical contraceptive use also differ across countries. In Bulgaria, Poland, Lithuania, the Czech Republic, Estonia, Norway, and Belgium, the changes in medical method use can be attributed to changes in the effects (Table 8.4). 76.5% (0.065/0.085) of the change in medical method use in Norway and 88.2% (0.097/0.110) in Belgium is explained by differences in behavior. In Bulgaria, Poland, Lithuania, the Czech Republic, and Estonia, the change in effects exceeds the total change (Bulgaria: 5.9% vs. 4.9% respectively; Poland: 18.0% vs. 17.4%; Lithuania: 22.1% vs. 21.0%; Czech Republic: 16.7% vs. 15.3%; Estonia: 14.7% vs. 12.3%) because of the small and non-significant negative effect of the compositional change. Appendix 8.I reveals that the increase in medical method use in Poland is related to higher use by the married, those without children, and the lower educated (*effects*), and in the Czech Republic to higher use by respondents with no childbearing desire (*effects*). For Bulgaria, Lithuania, Estonia, Norway, and Belgium, the association between having children and relying on medical methods altered in various ways (*effects*).

The changes in the remaining countries (Germany, Austria, and France) are attributable to both compositional and effect differences (Table 8.4), but there is a large variation between the determining characteristics across the countries (Appendix 8.I). For example, the overall increase in medical method use in France is related to a combination of the higher number of the married, the employed, those with one child, and those with no (additional) childbearing desire on the one hand (*endowments*), and the higher likelihood of the married and those without children to use medical methods on the other hand (*effects*). For Germany, the increase in medical contraceptives is paralleled by a decrease in the proportion of respondents with three or more children and respondents with a lower level of education (*endowments*), and – at the same time – a higher likelihood of those without children (in comparison with respondents with three or more children) and those with a lower education to practice these methods (*effects*).

8.4 Discussion and conclusion

The current study aimed to outline recent trends in contraceptive use in a number of European societies by comparing contraceptive behavior in the 1990s and 2000s, and tried to disentangle whether changes between the two time periods can be attributed to differences in the composition of the population or in the effects of the indicators. Several key findings are noteworthy.

First, the dominance of the medical contraceptive model is confirmed. In the 2000s, the prevalence of medical method use overruled the prevalence of cooperative method use in seven of the countries under investigation, and equaled the use of cooperative methods in Lithuania. Moreover, evidence is found for a general increase in medical contraceptive practice. It is striking, however, that this trend goes hand in hand with a rise in cooperative method use in most of the countries, although the prevalence of medical contraceptives increases at a steeper rate. Additional analyses indicate that the increase in cooperative method use in Germany, Austria, Belgium, and France results from higher reliance on both condom use and dual use (i.e., the combination of condom use and medical methods) (results not shown). This may suggest an "AIDS prevention effect," which can be linked to the reintroduction of condoms into the contraceptive repertoire as part of national HIV/AIDS prevention campaigns (Le Guen et al., 2015). It should be noted that despite the overall increase in cooperative method use, these countries show a further erosion of less-effective traditional contraceptive practice. In Estonia and Norway there is a decline in the use of cooperative methods, pointing to lower use of both traditional methods and condoms (results not shown). This suggests condoms have become used more for contraception, a function that can easily be replaced by the use of other contraceptives (Hubert, Bajos, & Sandfort, 1998).

The stable trend in the use of cooperative methods in Lithuania and Poland (resulting from a decrease in traditional methods and an increase in condom use and dual use; results not shown), accompanied by a sharp rise in medical method use, suggests that both countries are progressing toward a dominant medical model. It is no coincidence that these two countries lag behind and are characterized by relatively low overall levels of contraceptive practice. They have both had to deal with opposition of the Catholic Church to modern contraception and sexuality education (IPPF European Network, 2015; Popov & David, 1999; Titkow, 1999). Lithuanian public and academic bodies follow the Church's teachings – which mainly promote abstinence – with regard to

reproductive health education, and Polish healthcare professionals have the right to refuse to prescribe or insert medical contraceptives because of their religious beliefs (IPPF European Network, 2015). Moreover, the pill and IUD are frequently said to be dangerous to woman's health (IPPF European Network, 2015; Titkow, 1999).

The pattern of contraceptive use in Bulgaria contrasts with that of all the other countries examined, by showing the largest increase in cooperative method use (here, a composite of higher reliance on withdrawal and male condom use; results not shown) and the smallest in medical method use. This may be linked to the highly unstable political and economic situation during recent decades, which worsened the country's status in the field of reproductive health (IPPF European Network, 2015). During the Soviet period, it was official policy to make the pill available, but access to effective contraceptives was limited because they were not produced in the country, their adoption was discouraged and side effects were exaggerated in the media, and medical professionals long resisted innovations in family planning (Vassilev, 1999). In the aftermath of the collapse of the Soviet system, modern contraceptives were out of reach for many, when priority had to be given to food and shelter.

Second, some region-specific findings from previous research were supported (Amirkhanian, 2012; Frejka, 2008a; CDC & ORC Macro, 2003; RFSU, 2013; Serbanescu et al., 2004; United Nations, 2013), such as the relatively high use of cooperative methods in CEE, and the particularly high reliance on medical methods in NE and WE – although it should be noted that these differences became smaller over time. The delay of CEE countries in the adoption of medical contraceptives can be specifically linked to the "abortion culture" that was installed from the inception of the state socialist system; abortion was legalized long before it was in NE and WE, and it was the major form of fertility regulation for a long time (Frejka, 2008a; Serbanescu et al., 2004). This created an unusual context for the introduction of medical contraception, as it had to compete against the fully-established, guaranteed effectiveness of abortion rather than merely against less-effective traditional methods such as withdrawal or rhythm method (Carlson & Omori, 1998). This aside, however, the country-specific logistic regression analyses and decomposition analyses show few commonalities within each region. Instead, they underline the specificities of the patterns of contraceptive behavior in each country. This adds to previous literature that highlights the diversity of the CEE region, which is often considered as one "bloc," despite limited evidence for a single socialist fertility pattern

and the observation that the countries are at different stages of health reform (Berdzuli et al., 2009; Brzozowska, 2015).

As shown by the decomposition analyses, the change in cooperative method use during the past decades can be primarily attributed to changing population composition and to changing behavior, in terms of number of children and educational attainment. In Bulgaria and France, differences in use between those with and without children became established over time, in Poland the difference by the number of children in the adoption of cooperative methods disappeared, and in Lithuania, Germany, and Norway, distinct patterns are apparent depending on the number of children. Furthermore, the pro-high educational inequalities fade away in four of the CEE countries (though not in Poland). By contrast, in Germany, Austria, Norway, and Belgium – all characterized by relatively lower cooperative method use in the 1990s – there was a stable or emerging educational gradient over time, with the higher educated being more likely to rely on cooperative contraceptives compared with the lower educated. Considering the function of condoms in disease prevention, this aligns with the observation that prevention efforts after the outbreak of HIV in CEE following the fall of the Iron Curtain in the 1990s began to pay off, whereas "prevention fatigue" in WE contributed to an increase in unsafe sexual behavior among particular subgroups (Matic et al., 2006). Previous studies further show that the lower educated are overall less likely to participate in other preventive health practices too (e.g., mammography screening, flu vaccinations) (Jusot, Or, & Sirven, 2012; Missinne, Neels, & Bracke, 2014). Interpreted in the light of contraceptive use, however, the higher-educated might also perceive cooperative methods as a non-hormonal, more "natural and healthy" alternative to the pill (Cheung & Free, 2005; Johnson et al., 2013; Picavet, van der Leest, & Wijsen, 2011), and condom use enables men to engage in contraceptive practice (Fennell, 2011; Le Guen et al., 2015).

Interestingly, in Estonia, this educational equality in cooperative method use is also present in the uptake of medical contraceptives, whereas in Bulgaria and Poland, it is paralleled by a remaining educational gradient in favor of the higher educated. In Germany and Austria, the commonly assumed pattern of the lower educated relying on less-effective methods and the higher educated on more-effective methods is reversed. Overall, the results for medical contraceptive use are very diverse across countries and the processes identified mostly differ from those observed for the use of cooperative methods. This aligns with the earlier observation that the general increase in medical

method use is not necessarily mirrored by a decrease in the prevalence of cooperative contraceptives.

Some limitations of this research should be noted. First, we took advantage of the comparability of the FFS and GGS data to create a dataset encompassing ten European countries over two periods in time. These surveys provide some of the most up to date, nationally representative datasets on contraceptive use in Europe. Despite the efforts to make the two surveys comparable (Vikat et al., 2007), some differences are inevitable. For instance, a few questions and answer categories were constructed slightly differently (e.g., the FFS had two possible responses to the question on contraceptive use, whereas some countries in the GGS had up to eleven answer options), and the country-specific sample sizes vary. Therefore, we additionally tried to enhance comparability by only including answer categories that were asked in both the FFS and the GGS, and by limiting the age range to respondents between 20 and 40 years old. Second, the gap between the two study periods differs from 6 years in Bulgaria to 20 years in Poland (Appendix 8.A). Given the country-specific approach of our study, we are convinced that this limitation is confined. More importantly, however, is to bear in mind that our empirical strategy only provides two snapshots within a two-decade period, which might cause some intra-country nuances to be lost. Third, it should be noted that the cross-sectional character of the FFS and the reliance on one wave of the GGS hampers causal interpretations of the results. The question may be raised, for instance, of whether the higher educated are more likely to use more-effective contraceptives or whether the use of highly-effective contraceptives enables women to pursue higher education. Therefore, the discussion of our findings focuses on changes in the associations rather than on causality. Lastly, the GGS collected data in one SE country (Italy), but unfortunately, no information on contraceptive behavior was included. The specific patterns concerning contraception in the SE region – the maintenance of withdrawal and male condoms as the main methods, and the late transition to the medical model starting in the 1980s (Dalla Zuanna et al., 2005; Delgado, Meil, & Lopez, 2008; Frejka, 2008a; Gribaldo et al., 2009) – make this region particularly interesting.

In conclusion, this study provides valuable insights into the patterns of contraceptive use across multiple European societies. Our results emphasize that sociodemographic differences in contraception remain relevant and are still changing, and that a country-specific approach illuminates the diversity in use across and within regions.

9. READY, WILLING, AND ABLE: CONTRACEPTIVE USE PATTERNS ACROSS EUROPE[20]

An "East-West" divide in contraceptive use patterns has been identified across Europe, with Western European (WE) countries characterized by the widespread use of modern contraception, and Central and Eastern European (CEE) countries characterized by a high prevalence of withdrawal, the rhythm method, or abortion. Building on the ready-willing-able framework, this study aims to gain more insight into the micro-level and macro-level socioeconomic, cultural, and technological determinants underlying contraceptive use. Data from the Generations and Gender Survey (GGS; 2004-2011) covering four WE and seven CEE countries is used, and multinomial multilevel analyses are performed. Results reveal that individuals who intend to delay parenthood are more likely to use any contraceptive method, whereas holding more traditional values and having a lower socioeconomic status are associated with a higher likelihood of using no *or* only traditional methods. Regional reproductive rights and gender equality interact in complex ways with these associations. At minimum, our results underline the complexity of the processes underlying the persistent difference in contraceptive use across Europe.

9.1 Introduction

Despite the generally low fertility rates in European societies and the observation that not a single European country has a total fertility rate above population replacement level (Eurostat, 2015d; Frejka & Sobotka, 2008), contraceptive behavior across Europe varies to a great extent. In WE, contraceptive users almost universally rely on modern methods (United Nations, 2013). 95.5 percent use barrier methods, hormonal contraception or sterilization whereas only 4.5 percent use traditional methods.[21] In CEE, 77.5 percent use modern methods and 22.5 percent rely on traditional contraception. Taking all women of reproductive age into account, the level of unmet need for contraception (i.e., the prevalence of fertile women who are sexually active, but

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[20] Dereuddre, R., Van de Putte, B., & Bracke, P. (2016). *European Journal of Population, 32*(4), 543-573.

[21] Although the division between traditional and modern contraceptive methods is historically inaccurate, this terminology is widely used in research concerning fertility regulation (Frejka, 2008a). Withdrawal and the rhythm method are usually classified as "traditional", whereas barrier methods, hormonal contraception, and sterilization are considered as "modern".

are not using any contraceptive method although they do not want children within the next two years) is higher in the CEE countries (Klijzing, 2000; United Nations, 2012). It ranges from 1.7 percent in France to about 15-20 percent in many CEE countries.

This "East-West" divide in contraceptive prevalence results from divergent historical trends between the two regions (Lesthaeghe, 2000; Troitskaia, Avdeev, Badurashvili, Kapanadze, & Tretjakova, 2009). In WE, the transition toward the dominant use of modern contraception by the majority of the population – also termed the "contraceptive revolution" (Westoff & Ryder, 1977) – took place during the 1960s and 1970s (Frejka, 2008a). The introduction of the hormonal birth-control pill shifted the responsibility for contraception from men to women (Dalla Zuanna et al., 2005; Santow, 1993), gave women greater power to control reproductive decisions, and enabled couples to delay parenthood more effectively (Skouby, 2004). In most CEE countries, the use of modern contraceptives was legal during the Soviet period (Serbanescu et al., 2004), but access was limited and costs were high because of importation from the West (Westoff, 2005). Domestically produced contraceptives were of poor quality (Santow, 1993) and healthcare professionals were negative and skeptical about modern methods (Westoff, 2005). This led to widespread reliance on traditional contraceptive methods and abortion to control fertility in the former socialist countries (Serbanescu et al., 2004). Abortion as a basic right for all women was legalized well before it was in the WE countries and is therefore well embedded and socially accepted as a method of birth control in case of contraceptive failure (Frejka, 2008a; Serbanescu et al., 2004). Despite the significant drop in abortion rates and the sharp increase in modern contraceptive use since the 1990s in the CEE countries (Frejka, 2008a; Westoff, 2005), most still have some of the highest estimated abortion rates in the world (Sedgh, Henshaw, Singh, Bankole, & Drescher, 2007).

In light of these evolutions, researchers have investigated a range of socioeconomic and demographic determinants of contraceptive use patterns. Most studies have focused on single countries (Carlson & Lamb, 2001; Cliquet & Lodewijckx, 1986; Moreau et al., 2006; Oddens, Visser, Vemer, & Everaerd, 1994; Oddens, Visser, Vemer, Everaerd, & Lehert, 1994; Serbanescu, Morris, Stupp, & Stanescu, 1995) and cross-national comparisons are largely limited to WE (Skouby, 2004) *or* CEE (Serbanescu et al., 2004; Westoff, 2005). Furthermore, population-level characteristics are often ignored, although studies in developing countries have shown the beneficial effects of

macroeconomic and proactive efforts of governments to empower women and couples to access modern contraception (Gakidou & Vayena, 2007).

In this paper, we examine the micro-macro linkages underlying the diversity between WE and CEE countries with regard to contraceptive use. The persistence, especially in the CEE countries, of not using any contraception or relying on traditional methods – despite the increasing availability of modern contraceptives – seems to result from a complex combination of factors. Among other matters, ingrained prejudices toward modern contraception are still widely present (IPPF European Network & UNFPA, 2012). Condoms are stigmatized, as they are considered as a method of preventing sexually transmitted infections, and hormonal contraceptives are perceived as being harmful to health because they are "unnatural". In this regard, several scholars have criticized the notion of a linear transition from "irrational" traditional methods to "rational" modern ones (Gribaldo et al., 2009; Johnson-Hanks, 2002). Because a comprehensive theoretical framework is missing (Mannan & Beaujot, 2006), we use Coale's (1973) ready-willing-able model – initially developed to interpret the decline in fertility rates during the first demographic transition in Europe – as a starting point. This framework is seen as a useful tool to describe adaptation to new forms of behavior and the subsequent generalization of these behaviors (Lesthaeghe & Vanderhoeft, 2001), and its main advantage is its recognition of the joint importance of structural, ideological, and technological conditions (Sobotka, 2008). We use the concepts of this ready-willing-able model to identify and examine the individual determinants of using no or traditional contraceptives, instead of practicing modern methods, across different European contexts. To the best of our knowledge, to date only Mannan and Beaujot (2006) have relied on the model with regard to contraceptive use. Their study focuses on a range of socioeconomic, sociocultural, and demographic predictors of readiness, willingness, and ability, and demonstrates a strong association between these last three factors and contraceptive use in Bangladesh. Additionally, we expand the model by paying attention to the (moderating) role of macro-level family policies, normative principles, and gendered economic and political development.

9.2 Ready, willing, and able

The theoretical framework proposed by Coale (1973) and elaborated by Lesthaeghe and Vanderhoeft (2001) assumes three preconditions for the adoption of new behavior: individual readiness, willingness, and ability. The basic idea is that behavioral change can

only occur when all three prerequisites interact simultaneously (Lesthaeghe & Vanderhoeft, 2001; Sandström, 2012; Sobotka, 2008). This weakest link principle entails that the pace of behavioral change is determined by the minimum speed of any one of the preconditions. If one of the factors is resistant to change, it acts as a bottleneck to slow down or prevent transition.

The first factor, *readiness*, refers to a classic cost-benefit analysis. The utility of new behavior should be evident to the actor and the advantages must outweigh the disadvantages (Coale, 1973; Lesthaeghe & Vanderhoeft, 2001). Accordingly, the assumption is raised that the *choice* of whether or not to have a child should be approached as *an individualistic, rational process* (Balbo et al., 2013; Robinson, 1997). Following this reasoning, people can be considered *ready* to use contraception if the costs are compensated by the benefits of preventing pregnancy (Robinson, 1997). It is evident that this cost-benefit calculation varies across different contraceptive methods. Whereas traditional contraceptives are often less efficient, they also take no preparation and are always available (IPPF European Network & UNFPA, 2012). Furthermore, condom use enables men to participate in couples' contraceptive use, but is also associated with inconvenience, and hormonal methods are most efficient, but at the same time related to side effects such as weight gain or mood swings (Johnson et al., 2013) (economic costs will be discussed in the section about ability).

The concept of readiness has been broadly covered, both theoretically and empirically, by multiple scientific disciplines to explain fertility behavior. Previous studies have in particular investigated the processes underlying child-number and child-timing desires and intentions (Balbo et al., 2013; Liefbroer, 2005), and contraceptive use as such has been largely ignored. Nevertheless, it can be argued that the cost of *not* having children – or controlling fertility – is closely linked with the cost of having children (Robinson, 1997). Two types of studies can be distinguished. The first type examines the association between the value of children and fertility behavior. According to economic theories, children should be considered as a special kind of consumption good, of which (future) parents compare the utility and costs with those of other goods (Becker, 1960; Easterlin, 1975). Hoffman and Hoffman (1973) expanded this purely economic viewpoint by adding children's value for parents' well-being – in terms of affection, expansion of the self, social identity, creativity, etc. – to the cost-benefit calculation (Hoffman, Thornton, & Manis, 1978).

The second type has identified fertility intention as the proximate determinant of predicting fertility decision making and as a mediating factor between people's perceived costs and rewards of fertility behavior (here: the perceived costs of having children) and their actual behavior (Balbo et al., 2013; Langdridge, Sheeran, & Connolly, 2005). Miller (1994) conceptualized the process as a sequence of four stages: motivational traits, desires, intentions, and behaviors. The first step concerns the dispositions to have positive or negative feelings toward, in our case, fertility-related experiences. Results show both a short-term effect and a long-term effect of fertility motivations on the timing of parenthood and desired family size (Miller, Rodgers, & Pasta, 2010). Similarly, the theory of reasoned action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and the theory of planned behavior (Ajzen, 1991) state that intentions are determined by positive and negative attitudes toward the behavior. Furthermore, attention is paid to "perceived behavioral control" or the perception of being able to perform the behavior. For instance, highly-educated women with substantial earning potential seem to postpone childbirth until they consider themselves more established in their jobs (Gustafsson, 2005; Van Bavel, 2010). Langdridge et al. (2005) and Liefbroer (2005) also confirmed the framework by concluding that financial considerations, career opportunities, relationship quality, etc. all exert an influence, respectively, on the intention and timing of having a first child.

The second factor, *willingness*, refers to the normative and legitimate acceptability of new forms of behavior (Coale, 1973; Lesthaeghe & Vanderhoeft, 2001). An actor will rely on fertility control to the extent that it corresponds to established beliefs and codes of conduct, and to the extent that he/she is willing to overcome objections and fears (Mannan & Beaujot, 2006). According to Lesthaeghe and van de Kaa (1986), altering fertility behavior – such as the postponement of parenthood or the transition to a subreplacement fertility level – and other demographic changes that took place in Europe during the second half of the twentieth century were grounded in the second demographic transition and the accompanying altering value systems. Research indicates that CEE countries have also been showing symptoms of this transition since the fall of the Iron Curtain (Lesthaeghe & Surkyn, 2002), although it is debated whether there is only one model of the transition or multiple ones as normative changes may occur in different periods and at different intensity across contexts (Sobotka, 2008; van de Kaa, 1997). In Europe, parenthood almost universally remained positively valued, but it has been increasingly viewed as a source of self-fulfillment rather than as a "duty to society" (Sobotka, 2008). The spread of modern contraceptive methods facilitated many of the

fertility-related changes and resulted in altering norms regarding fertility regulation, but also in reverse, attitudes with regard to contraceptive use have shifted. Empirical evidence confirms that individuals with more traditional attitudes are generally less likely – or less *willing* – to use contraceptives, and vice versa (Fehring & Ohlendorf, 2007; Goldscheider & Mosher, 1991).

Within the conceptualization of men's and women's willingness concerning fertility behavior and the focus on changing values, particular attention has been paid to the association between religiosity and fertility (Frejka & Westoff, 2008; Lesthaeghe & Vanderhoeft, 2001), as religion has long been recognized as a key determinant in predicting household decisions (Adsera, 2006). More than most other social institutions, religions impose moral codes to guide behavior, and there is a focus on issues of sexuality or gender-specific roles (McQuillan, 2004). Accordingly, previous research indicates that individual religiosity remains, despite the trend toward secularization, an important predictor of fertility behavior (Adsera, 2006; Sobotka & Adigüzel, 2003). With regard to contraceptive use, the Roman Catholic Church is the only major religion that clearly prohibits contraception as "a sin against nature" (Schenker & Rabenou, 1993), apart from traditional methods such as abstinence and the rhythm method, although natural family planning is still preferred (Dalla Zuanna et al., 2005). In the other Christian faiths (such as Eastern Orthodox and Protestantism), a similar reasoning is applied by the more conservative (Srikanthan & Reid, 2008). Although the official communist ideology in CEE countries was anti-religious (Sobotka, 2008), its traditional views on family and sexuality were in line with this conservative orthodox morality (Ferge, 1997). Other religions such as Judaism and Islam retain specific limitations on the use of contraception (Schenker & Rabenou, 1993; Srikanthan & Reid, 2008).

Only a few studies in developed countries have specifically examined the relationship between religious practice and contraceptive use (Rostosky, Wilcox, Wright, & Randall, 2004), most often focusing on the U.S. or WE countries, and distinguishing between contraceptive non-use and use, thereby neglecting traditional method use or including it in one of these two categories. Research carried out in the U.S. shows that being religious has a suppressing effect on the use of the oral contraceptive pill, hormonal emergency contraception, and injectables (Fehring & Ohlendorf, 2007). According to Kramer, Hogue, and Gaydos (2007), the lower likelihood of using any contraception is only applicable to religious teens. Research in WE points in a similar direction, as non-religious women seem to be most likely to use contraception (Bentley & Kavanagh,

2008). In France, adolescents who report regular religious practice less often rely on contraception (Moreau, Trussell, & Bajos, 2013) and in the United Kingdom, Christian and Muslim students have the highest prevalence of never using contraceptive methods (Coleman & Testa, 2008).

The third factor is *ability*, which entails that there must be adequate means to implement the new behavior. This dimension of Coale's (1973) framework refers to the availability and accessibility of the innovation, and also relates to the actor's knowledge about family planning methods (Coale, 1973; Lesthaeghe & Vanderhoeft, 2001; Mannan & Beaujot, 2006). The concept of ability has been addressed by research examining the unmet need for contraceptives (Klijzing, 2000; Sedgh et al., 2007; Serbanescu et al., 2004; Singh, Sedgh, & Hussain, 2010). As such, those reporting an unmet need for contraception have been identified as *not being able* to use contraception.

Scholars who have investigated unmet need, and overall the majority of researchers examining contraceptive use, have focused on the link with (especially women's) socioeconomic status (SES). That is, the association between higher educational attainment and a higher likelihood and consistency of using modern contraception has been repeatedly noted (Janevic et al., 2012; Moreau et al., 2006; Mosher & Jones, 2010; Serbanescu et al., 2004; Serbanescu & Seither, 2003; Spinelli et al., 2000). In reverse, withdrawal and periodic abstinence are not likely to be used by the higher educated (Serbanescu & Seither, 2003; Spinelli et al., 2000). The pattern for sterilization is less clear: results regarding male sterilization are inconclusive (Anderson et al., 2012; Eeckhaut & Sweeney, 2016; Oddens, Visser, Vemer, & Everaerd, 1994; Oddens, Visser, Vemer, Everaerd, et al., 1994), whereas the use of female sterilization has been found to be negatively associated with educational level (Anderson et al., 2012; Eeckhaut & Sweeney, 2016; Mosher & Jones, 2010; Oddens, Visser, Vemer, & Everaerd, 1994; Oddens, Visser, Vemer, Everaerd, et al., 1994). In developed countries, less attention has been paid to other SES dimensions, such as income or occupational status. A few scholars have demonstrated a positive relationship between household income and the use of modern contraception (Janevic et al., 2012), and a negative association with contraceptive failure (Mosher & Jones, 2010). Results concerning work position are inconclusive. Some scholars have concluded that working women are more likely to use oral contraceptives than housewives (Spinelli et al., 2000), whereas others have found no association (Moreau et al., 2006).

In addition to SES, accessibility has been identified as having an urban-rural division, especially in CEE or developing countries. Urbanity is taken as a proxy for supply, because modern contraception may be more readily accessible in urban areas than in rural ones (Klijzing, 2000). Research confirms a direct association between living in an urban location and relying on modern contraceptives, whereas traditional methods are more likely to be used in rural areas (Serbanescu & Seither, 2003; Westoff, 2005).

To sum up, we expect that *individuals who are identified as ready, willing, or able will be more likely to practice modern contraception instead of using no method or traditional contraception.* Moreover, following Coale's (1973) reasoning that the onset and the speed of the European fertility transitions were contingent on the joint meeting of all three preconditions (Lesthaeghe & Vanderhoeft, 2001), we expect that *each precondition will explain part of individuals' contraceptive behavior, irrespective of the other preconditions.*

9.3 Incorporating the macro level

Because the vast majority of research about contraceptive use has focused on micro-level characteristics (Clark, 2006; Wang, 2007), it is implicitly assumed that use is unrelated to the social context (Grady et al., 1993). However, this context seems to be likely to influence men's and women's contraceptive options in various ways. Studies concerning contraception in developing countries (Gakidou & Vayena, 2007; Wang & Pillai, 2001) and studies concerning health outcomes in developed countries (Pickett & Pearl, 2001) have repeatedly demonstrated the importance of macro-level variables. Moreover, IPPF European Network (2013) recently called for attention to be paid to significant loopholes in policies related to sexual and reproductive health and rights and have highlighted the lack of a comprehensive strategy focusing on fertility control in CEE as well as in WE countries. Our study aims to step into this void by linking the individual-level ready-willing-able framework with these dimensions at the contextual level. In this way, we intend to obtain a more complete understanding of how contraceptive usage is shaped.

Wang and Pillai (2001) identified two types of macro-level sociological studies examining reproductive health. The first emphasizes the importance of reproductive rights (Clark, 2006; Wang & Pillai, 2001). These specific rights given to parents by the state may reduce the costs of (additional) childbearing by facilitating the reconciliation of paid work and family life (Janta, 2014; Mills et al., 2014). Multiple dimensions and actors are involved

– think about formal and informal childcare settings, flexibility in the labor market, and parental leave schemes – and especially the combination of these options may create opportunities for (intended) parents. Research confirms that the availability of childcare services and the ability to work part-time serve as predictors for a higher probability of having children (Del Boca, 2002). Furthermore, having the opportunity to take parental leave seems to enhance reproductive health (Clark, 2006; Wang, 2004). The unavailability of these rights forces parents – and in particular mothers – to choose between (full-time) employment and not working at all (Del Boca, 2002). Connecting this to Coale's (1973) model, reproductive rights could be interpreted as an indication of higher levels of readiness at the macro level.

The second type of study investigates the association with social-structural characteristics. Most studies in this domain have focused on gender equality, as women's limited access to modern contraceptive methods may be interpreted as a manifestation of inequity in their status (Serbanescu et al., 2004) and an inability to negotiate otherwise (Bentley & Kavanagh, 2008). Blumberg (1984; Blumberg & Coleman, 1989) has argued that women's relative economic control in particular is the driving force to ensure that they can adjust their fertility pattern to their own interests. Accordingly, research shows that less female labor force participation at the district level is related to a lower prevalence of contraceptive use in general (Bentley & Kavanagh, 2008). This seems especially true for lower-educated women, as their likelihood of using contraception decreases at a greater rate as compared to that of higher-educated women. Moreover, female political participation is identified as a leverage for women's reproductive health, because higher participation may accelerate the promotion of laws in favor of female control over contraception and abortion (Clark, 2006). We argue that higher levels of gender equality may indicate higher ability at the macro level.

Additionally, Wang and Pillai (2001) emphasized that social-structural characteristics also have an association with societal and familial values, which influence reproductive decision making to a large extent. Likewise, Neyer and Andersson (2008) highlighted the need to approach family policies within the broader normative context. Religiosity as a group characteristic, for instance, may empower individual religiosity and its influence on contraceptive use, as it conforms to the prevailing norms (Grady et al., 1993; Stark, 1996). We suggest that the presence of more modern values may be an indication of higher levels of willingness.

With regard to the micro and macro level, it has been suggested that the latter exerts the greatest influence (Blumberg, 1984). As different societal levels yield different degrees of power, control at lower levels can be reduced or enhanced by control at higher levels. For instance, the promotion of reproductive rights by the state is contributory to parents' decision making concerning reproduction (Wang & Pillai, 2001). Likewise, female economic power at the household level can be affected in a negative way by the prevailing degree of male domination at the macro level (Blumberg, 1984). In all, we expect that these *macro-level notions of readiness, willingness, and ability will be related to a higher likelihood of practicing modern contraception instead of using no method or traditional contraception* and, moreover, that they will *interact with the conditions at the micro level by further empowering individuals' characteristics.*

9.4 Method

Data

We use data from the first wave of the GGS (UNECE, 2005)[22]. The GGS is a longitudinal panel survey that collected representative data from people aged between 18 and 79 in Europe, Australia and Japan. The aim was to gather detailed information concerning different sociodemographic themes, such as partnership and fertility, over three waves with a three-year interval between each wave. Face-to-face interviews were conducted, with an average of 10,000 respondents per country per wave. One of the key features of the survey is the cross-national comparability by providing the survey design, a standard questionnaire, and common definitions and instructions in all countries (Vikat et al., 2007). To date, wave 1 data is available for 19 countries, of which 11 are included

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[22] As a test for the validity of the data, the contraceptive use patterns derived from the GGS were compared to those derived from the Family and Fertility Survey (UNECE, 2000b) – for Austria, Belgium, France, Germany, Bulgaria, Czech Republic, Lithuania and Poland – and the Reproductive Health Survey (RHS, 2015) – for the Czech Republic, Georgia, Romania and the Russian Federation – by calculating Pearson's correlation. For both unmet need and modern methods, the correlations are strong ($r_{GGS\text{-}FFS/unmet\ need} = 0.95$; $r_{GGS\text{-}FFS/modern} = 0.83$; $r_{GGS\text{-}RHS/unmet\ need} = 0.69$; $r_{GGS\text{-}RHS/modern} = 0.94$), and also for traditional methods, the correlations are quite high ($r_{GGS\text{-}FFS/traditional} = 0.54$; $r_{GGS\text{-}RHS/traditional} = 0.48$). This suggests that the patterns for contraceptive behavior across the countries are similar in the diverse datasets and thus that the GGS data for contraception are sufficiently reliable.

in our study: Austria, Belgium, France, Germany,[23] Bulgaria, the Czech Republic, Georgia, Lithuania, Poland, Romania, and the Russian Federation. The diverse periods of data collection across the countries (between 2004 and 2011) should not hinder comparability as the adaptation to new forms of contraceptive behavior and the subsequent generalization of these behaviors take time and depend on multiple factors (Coale, 1973; Lesthaeghe & Vanderhoeft, 2001). This assumption was empirically confirmed by comparing the contraceptive patterns in waves 1 and 2 of the GGS in the countries for which both waves are available; the prevalence of all methods remains relatively stable. The other countries were omitted from the sample due to missing information on the question about contraceptive use (i.e., Italy, The Netherlands and Hungary) or other key variables (i.e., Estonia, Norway and Sweden), or because their geographic location was not accurate for this study (i.e., Australia and Japan).

An advantage of the GGS is that it is appropriate for use in research into contextual effects, given that each respondent can be assigned to a NUTS 1 region (nomenclature of territorial units for statistics). This NUTS classification facilitates the comparability across European regions (Eurostat, 2015c). For Georgia and the Russian Federation, there is also information available about the administrative unit of residence for each respondent. We rely on the regional level because of the small number of countries. The number of regions ranges from 1 (Lithuania and the Czech Republic) to 32 (the Russian Federation), and our sample contains a total of 87 regions. Regional data information for the country-specific years of data collection is derived from aggregated data on the total weighted GGS samples, Eurostat, and reports gathering data concerning regional government (see Appendix 9.A for an overview).

The harmonized GGS dataset for the eleven countries we use contains information about 118,393 respondents. Our analysis focuses on a subsample of 17,492 men and 20,712 women in a heterosexual relationship. Only couples in which the respondent and his/her partner are aged between 18 and 45[24] are included, and both resident and non-

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[23] Although East Germany was also characterized by limited access to modern contraceptives before German reunification in 1990, these methods became as equally widespread in the Eastern part as in the Western part quickly afterwards (Oddens, Vemer, Visser, & Ketting, 1993; Oddens, Visser, Vemer, & Everaerd, 1994; Starke & Visser, 1994). In this regard, East Germany differs considerably from other former communist countries and therefore, we consider Germany as one entity at the country level.

[24] Most studies have limited their analyses to women of reproductive age (18-49) or men with a partner of reproductive age. However, as the Austrian GGS only interviewed individuals aged

resident partnerships are taken into account. Respondents who never had sexual intercourse (N = 76), who were pregnant or had a pregnant partner (N = 1500), or who were physically unable to have children or had an infertile partner for a reason other than contraceptive sterilization (N = 2832) are removed from the sample. Cases with missing information are also excluded (except for missing values on the income variable; see below). No variable has more than 5.4% missing values and the accumulated percentage of missing values is 11.7% for men and 10.7% for women. As the pattern of missing values does not depend on the data values or, in other words, the data is missing completely at random, our estimations are not biased because of this listwise deletion (Acock, 2005; Allison, 2002; Schafer, 1999). The final analytic sample consists of 13,471 men and 15,861 women.

Measurements

Dependent variable. Current *contraceptive use* is classified into three categories: not using contraception, using traditional contraception (withdrawal, the rhythm method), and using modern contraception (male condom, the pill, intra-uterine device, diaphragm, cervical cap, foam, cream, or jelly, suppository, injectable, implant, Persona, hormonal emergency contraception, sterilization). Respondents combining traditional and modern methods are grouped in the latter category, and those reporting the use of "other" methods are excluded (N = 75). Relying on modern contraception is used as the reference category.

Micro-level independent variables. Multiple variables are constructed to measure each of the three preconditions. For each variable, a higher score indicates more readiness, willingness, or ability. All metric independent variables are grand-mean-centered for the multilevel analyses.

Readiness is operationalized as respondents' intentions regarding parenthood and the perceived costs of having a/another child. *Fertility intentions* are assessed by two questions: "Do you yourself want to have a/another baby now?"[25] and "Do you intend to have a/another child during the next three years?" In line with the reasoning of the

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between 18 and 45 we apply this age range to all the countries in our study to ensure better comparability.

[25] This information is missing for France and therefore we only use the question "Do you intend to have a/another child during the next three years?"

concept of unmet need (Klijzing, 2000), we classify couples who intend to delay pregnancy for at least three years or who do not want any more children at all, as being ready to use modern contraception (wanting children = 0; not wanting children = 1). With regard to *perceived costs*, respondents were asked what effects they expected having a/another child within the three years after the survey would have on eleven different aspects of their life (i.e., the possibility to do what you want; you/your partner's employment opportunities; your financial situation; your sexual life; what people around you think of you; the joy and satisfaction you get from life; the closeness between you and your partner; the care and security you may get in old age; certainty in your life; the closeness between you and your parents). The GGS based this question on one of the subjective dimensions from the theory of planned behavior – that is, attitudes toward specific behavior – (see earlier) (Vikat et al., 2007), which urged multiple scholars to implement this measure to examine fertility behavior (Dommermuth, Klobas, & Lappegård, 2011). Index scores were assessed by calculating respondent's mean score if he/she gave an answer to at least five of the items. Respondents with six or more missing items are removed from the sample. The index ranges from 1 (much better) to 5 (much worse).

For willingness, we relied on respondents' family values and religious affiliation. A scale consisting of ten items about partnerships and parenthood is used to measure *family values*. Respondents were asked whether they agree or disagree that: "marriage is an outdated institution", "it is all right for an unmarried couple to live together even if they have no interest in marriage", "marriage is a lifetime relationship and should never be ended", "it is all right for a couple with an unhappy marriage to get a divorce even if they have children", "a woman/man has to have children in order to be fulfilled", "a child needs a home with both a father and a mother to grow up happily", "a women can have a child as a single parent even if she does not want to have a stable relationship with a man", "when children turn about 18-20 years old they should start to live independently", and "homosexual couples should have the same rights as heterosexual couples do". After reversing the contrasting statements, we calculated the respondent's mean score if an answer was registered for at least half of the items. Respondents with fewer answers are excluded. Answer categories range from 1 (more traditional) to 5 (more modern). The Cronbach's alpha for this scale is good (α = 0.68). *Religiosity* is measured by means of three indicators (Diehl, Koenig, & Ruckdeschel, 2009). Respondents are coded as "religious" if they display strong religious commitment

according to at least two of the three items:[26] attending religious services at least once a week, agreeing that religious ceremonies related to life-cycle events such as weddings are important, and mentioning religion as one of the three most important qualities that children should acquire (religious = 0; not religious = 1).

The ability to access contraception is measured by respondents' educational level, employment status, income level, and place of residence. Respondents' *highest level of education* is assessed using the International Standard Classification of Education (ISCED97). We differentiate between four categories: studying, low educated, middle educated, and high educated (reference group). *Employment status* consists of three categories: employed, unemployed, and non-employed. The last group includes students, retired people, homemakers (i.e., performing housework or caring for children or others), those unable to work due to illness or disability, and those who are in military or social service. The employed are taken as the reference category. For the *income position* of respondents, we make a distinction between people living in relative poverty compared with the country- and gender-specific median (≤ 50% of the gender-specific median income), people with a low income (51-80%), people with a median income (81-120%; reference group), and people with a relatively high income (> 120%). To account for the item non-responses (for men 10.1%; for women 9.0%), the data were completed using multiple imputation techniques. Five different datasets were generated and the formulas provided by Rubin (1996) were applied to calculate the final estimates. Finally, *degree of urbanization* is coded as a dummy variable, distinguishing between respondents living in rural areas (= 0) and respondents living in urban areas (= 1).

Macro-level independent variables. All contextual variables are measured at the regional level and grand-mean-centered for the multilevel analyses. The *prevalence of female part-time work* is used as an indicator for reproductive rights (Del Boca, 2002; Mills et al., 2014) or, using Coale's (1973) terminology, the level of readiness at the population level. It is calculated as a percentage of the total female employment rate (Eurostat, 2015a). Although a specific proportion of these women may be involuntary engaged in part-time work (Janta, 2014; Sandor, 2011), calculations at the country level indicate that the subtraction of the percentage of involuntary part-time workers (Eurostat, 2015b; OECD, 2015) from the total number does not substantially alter the observed pattern

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[26] Measurements concerning attendance of religious services are missing in the Belgian dataset and measurements concerning socialization goals for children are missing in the French and Polish dataset. In these countries, respondents are coded as "religious" if they display strong religious commitment on both available indicators.

for the prevalence of part-time work across the countries (except for Georgia as its labor market is characterized by widespread involuntary part-time work (EU, GEPLAC, & Trends, 2004)). A higher prevalence of female part-time work is seen as an indicator for higher levels of readiness.

The *percentage of religious individuals* is used to operationalize the normative context. We relied on the total weighted GGS samples of each country to calculate the aggregate number of respondents in each NUTS region who display strong religious commitment (see earlier). A lower prevalence of religious people serves as an indicator of higher willingness.

Finally, the level of gender equality is measured as the *ratio of female to male median income* in each region (multiplied by 100) and the *percentage of women in regional politics*. Most country-level gender equality measurements, such as the Gender Inequality Index, the Gender Empowerment Measure, the Gender Equality Index, or the Gender Gap Index, use (among other items) both dimensions and these indicators of female empowerment are relied on in empirical research (Bentley & Kavanagh, 2008; Van de Velde, Huijts, Bracke, & Bambra, 2013). Although it should be acknowledged that the mandates and responsibilities of regional politicians differ across countries (Sundström & Wängnerud, 2013), it gives a good indication of the political gender culture in each region. A higher income ratio and a higher percentage of women in parliament indicate higher ability.

Control variables. We control for *gender* (0 = man, 1 = woman), *age*, and *age squared*, to account for nonlinear effects. We also control for *partner status*: respondents may either be married, be cohabiting, or have a non-resident partner. Being married is used as the reference group. The *number of children* is measured as a categorical variable: no children (reference group), one child, two children, and three or more children. Biological, adopted, step and foster children of the respondent are included.

Analytical strategy

We use multinomial multilevel models with three levels: (1) men (N = 13,471) and women (N = 15,861) are nested in (2) regions (N = 87) which are nested in (3) countries (N = 11). This statistical technique takes into account that individuals who are living in the same region tend to be more similar than individuals from different regions (Hox, 2010). Accordingly, the country level controls for the clustering of the regions. Because of the limited number of countries, no country-level variables are included in the models

as these are likely to be biased (Stegmueller, 2013). For men, individual cases per region vary from 7 to 1269 and per country from 769 to 1691; for women, regions have a range from 9 to 1494 cases and countries from 824 to 2356. Although this indicates that some regions only contain a small number of respondents, simulations demonstrate that valid and reliable estimations can be made starting with an average of five cases per group (Clarke, 2008).

First of all, the descriptive statistics are discussed briefly and, by calculating the z-scores, we determine whether the percentage difference in the prevalence of no, traditional and modern contraception in WE and CEE is significant. Then, our three hypotheses are tested. First, we examine the ready-willing-able formulation at the individual level for men and women separately. As the results for the independent main effects do not change substantially when all individual variables are simultaneously included in the model (compared with estimating the variables for each precondition separately), only this complete model is presented. Next, we add the macro-level measurements and finally, the cross-level interactions between individual readiness, willingness, and ability, and regional readiness, willingness, and ability. Although the construction of one index per individual precondition would simplify this procedure, the necessary cutoff points would entail significant limitations. The interaction terms enable us to examine whether the associations at the individual level between being ready, willing, or able and using modern contraception are moderated by the preconditions at the contextual level. To enhance interpretability, each interaction term is included separately and only the models with significant interactions are presented and discussed.

All models were analyzed using the software program MLwiN (version 2.33), estimating via the second-order penalized quasi-likelihood method (PQL). Because odds ratios reflect a certain degree of unobserved heterogeneity, caution is necessary when they are compared (Mood, 2010). In line with Mood (2010), our coefficients are y-standardized to enhance the comparability across different models.

9.5 Results

Descriptive statistics

Table 9.1 presents the percentages and percentage differences in contraceptive use in WE and CEE. We differentiate between the respondents with and without fertility

intentions in the near future because non-use in the first subsample is more likely to be due to the desire to have children whereas in the second, it is more likely to display patterns of unmet need. For both groups, the table confirms that the "East-West" divide remains relevant to this day. Significant gaps in contraceptive behavior are found for traditional and modern methods, as well as for non-use. Percentage differences range from 7.1% (for those with childbearing intentions) or 9.8% (for those without intentions) for non-use to 17.6% (for those with childbearing intentions) or 26.7% (for those without intentions) for modern contraceptives.

Table 9.1 Percentages and percentage differences in contraceptive use by fertility intention and European region

Respondents who want children within the next three years (N = 15,356)				
	WE	CEE	difference	sign[a]
No contraception	23.2	30.3	7.1	***
Traditional contraception	2.2	12.7	10.6	***
Modern contraception	74.6	57.0	17.6	***

Respondents who do not want children within the next three years (N = 13,976)				
	WE	CEE	difference	sign[a]
No contraception	12.5	22.3	9.8	***
Traditional contraception	2.1	19.0	16.9	***
Modern contraception	85.4	58.7	26.7	***

Notes. [a] z-score calculated by dividing the percentage difference by the standard error of the percentage difference. *** $p < .001$

At the same time, the figures highlight the heterogeneity that consists in both regions (Figures 9.1, 9.2 and 9.3). Whereas the prevalence of traditional contraceptives is generally higher in all CEE countries and it is practically zero in the WE countries, the patterns for modern contraception and non-use are less straightforward. More WE respondents use modern contraceptives, but the prevalence in Austria and Germany is close to that in the Czech Republic and the Russian Federation. For non-use, the Russian Federation reports the lowest percentage among those who want children within the next three years, followed by the WE countries Germany and Belgium. A similar pattern is found for those with no fertility intentions: the Russian Federation, Belgium and France display the lowest prevalence. It is striking that Bulgaria and Georgia overall show the lowest prevalence of reliance on modern methods. This is mainly due to the high percentages of traditional use in the first, and the high prevalence of non-use in the

Figure 9.1 Prevalence of using traditional contraception, per country and region (N = 29,332)
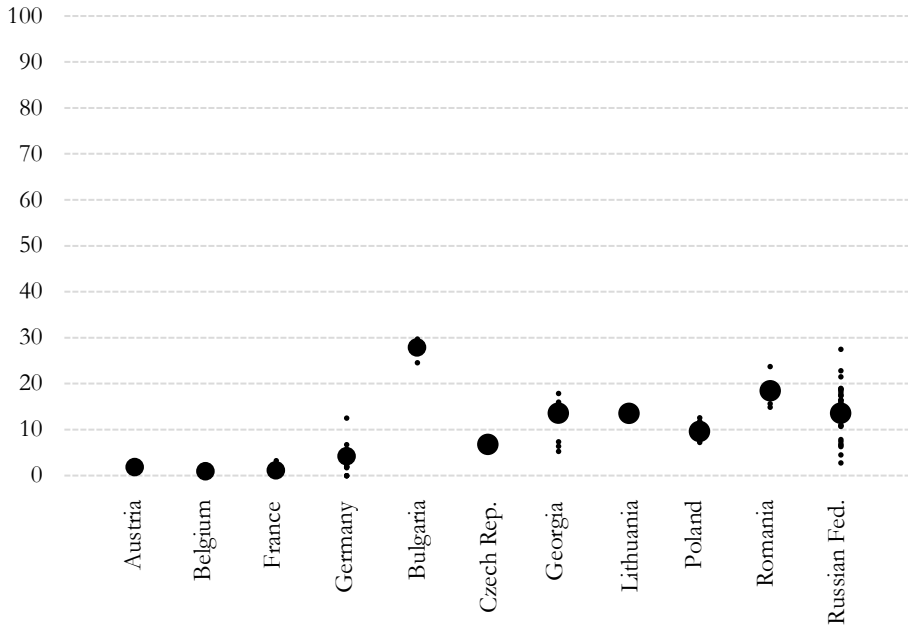
Figure 9.2 Prevalence of using modern contraception, per country and region (N = 29,332)
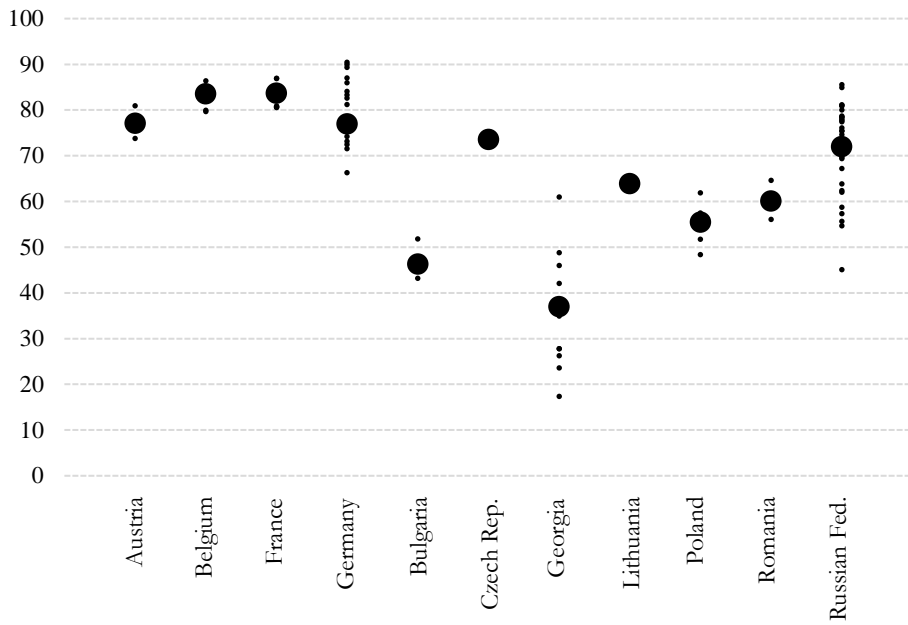
Figure 9.3 Prevalence of using no contraception by fertility intention, per country and region (N $_{wanting\ children}$ = 15,356; N $_{not\ wanting\ children}$ = 13,976)

● Respondents who want children within the next three years

◆ Respondents who do not want children within the next three years
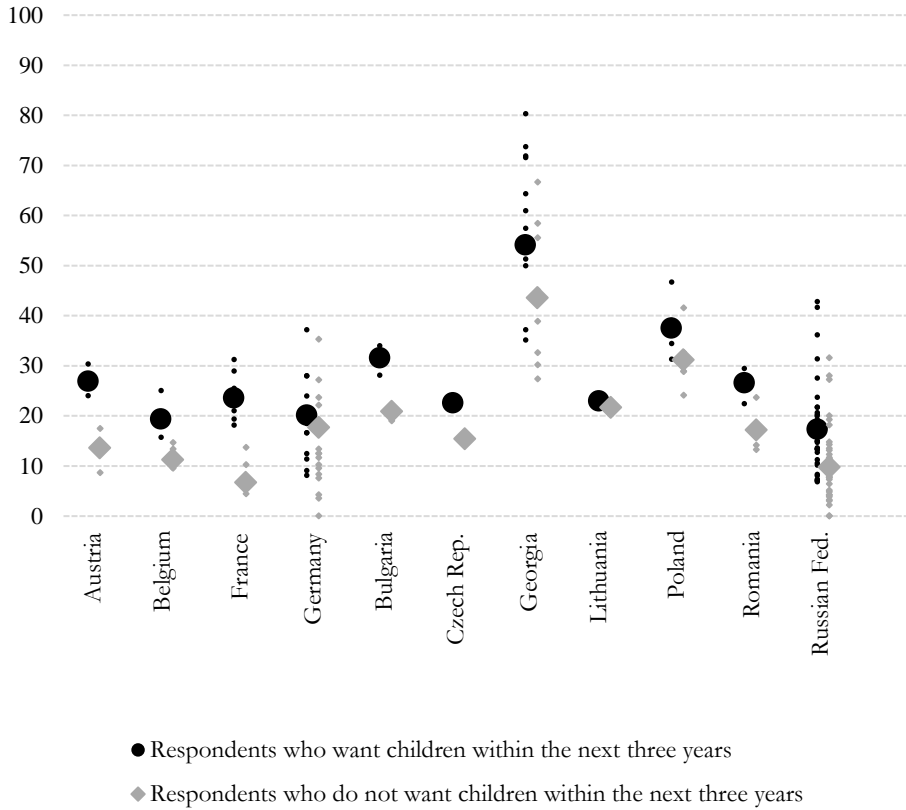
second. Interestingly, for Georgia, this finding seems to go hand in hand with the observation that this country also has the lowest perceived cost of children, the most traditional family values, the second highest prevalence of religious respondents, the lowest percentage of students and employed men and women, the most respondents with a low income, and the second highest prevalence of men and women living in a rural area (Table 9.2). Moreover, the country has one of the highest percentages of religious people and the greatest income differentials between men and women.

More in general, Table 9.2 suggests that respondents in the WE countries display higher levels of readiness, willingness, and ability to use modern contraceptives than those in the CEE countries. With a few exceptions, we find that WE respondents report a higher perceived cost of having (additional) children and that they hold on to more modern family values. Furthermore, a higher percentage of students can be observed in WE. The CEE countries have lower percentages of part-time employment (except for Georgia,

Table 9.2 Descriptive statistics, means (SD), and percentages (N = 29,332)

	Austria	Belgium	France	Germany	Bulgaria	Czech Republic	Georgia	Lithuania	Poland	Romania	Russian Federation
N	2826	1593	2383	2248	3976	2244	2076	2383	3712	3170	2721
Individual variables											
Readiness											
Wanting children											
Yes	55.3	52.4	47.5	45.7	45.9	58.2	54.5	61.4	57.7	44.7	55.7
No	44.7	47.6	52.5	54.3	54.1	41.8	45.5	38.6	42.3	55.3	44.3
Perceived cost of children	3.14 (0.31)	3.08 (0.40)	3.04 (0.51)	3.17 (0.35)	3.09 (0.51)	3.12 (0.44)	2.87 (0.44)	3.02 (0.42)	3.16 (0.38)	3.04 (0.44)	3.02 (0.45)
Willingness											
Family values	3.12 (0.54)	3.34 (0.55)	2.87 (0.59)	3.10 (0.56)	2.97 (0.42)	2.92 (0.43)	2.26 (0.38)	2.84 (0.40)	2.82 (0.45)	2.49 (0.43)	2.74 (0.39)
Religious											
Yes	7.8	2.0	1.9	8.0	5.1	3.9	29.6	6.2	32.2	23.2	2.2
No	92.2	98.0	98.1	92.0	94.9	96.1	70.4	93.8	67.8	76.8	97.8
Ability											
Educational level											
Studying	7.2	8.5	8.6	8.4	3.2	10.1	1.7	7.1	3.0	2.4	3.4
Low	9.1	15.8	12.9	10.1	19.6	9.5	7.1	8.1	5.2	21.8	5.9
Middle	66.0	32.5	44.6	57.5	54.4	65.0	60.8	57.1	60.6	63.1	50.1
High	17.8	43.3	33.9	23.9	22.8	15.4	30.3	27.7	31.2	12.7	40.6
Employment status											
Employed	76.1	80.4	75.2	65.0	65.8	69.5	49.9	78.8	70.9	77.8	74.4
Unemployed	3.3	5.6	8.3	8.3	21.7	5.3	18.1	4.8	9.7	5.0	6.8
Non-employed	20.6	14.0	16.5	26.6	12.4	25.2	32.0	16.4	19.4	17.2	18.8
Income level											
≤ 50% of median income	16.9	14.6	18.5	24.9	21.5	19.9	28.1	15.1	21.9	17.2	27.5
51-80% of median income	18.3	12.1	15.2	16.2	9.0	13.3	6.0	8.3	7.5	7.3	9.2
81-120% of median income	30.6	37.9	29.0	24.1	18.9	25.9	8.1	15.0	17.2	17.1	13.7
> 120% of median income	34.2	35.4	37.3	34.7	50.6	40.8	57.8	61.6	53.5	58.4	49.6
Place of residence											
Rural	41.5	60.4	16.7	22.4	28.2	33.0	44.9	27.7	33.3	41.6	25.4
Urban	58.5	39.6	83.3	77.6	71.8	67.0	55.1	72.3	66.7	58.4	74.6
Context variables											
% Female part-time work	41.70 (3.01)	40.71 (3.53)	30.76 (4.26)	43.71 (6.75)	3.43 (0.63)	8.50 (0.00)	31.37 (9.79)	12.60 (0.00)	11.64 (1.64)	10.26 (3.76)	4.97 (2.95)
% Religious	7.92 (1.16)	2.87 (1.75)	4.91 (1.16)	10.01 (4.33)	6.69 (1.44)	6.20 (0.00)	27.24 (5.15)	14.80 (0.00)	40.79 (6.89)	32.99 (4.80)	3.17 (1.75)
Ratio of female to male income	63.75 (6.03)	75.5 (2.83)	71.35 (4.68)	53.26 (8.36)	77.00 (0.00)	60.00 (0.00)	45.36 (8.73)	73.00 (0.00)	65.82 (3.87)	84.21 (3.77)	62.50 (31.91)
% Women in regional politics	30.76 (4.70)	28.66 (5.97)	47.62 (0.95)	29.54 (4.20)	9.11 (6.88)	17.00 (0.00)	11.25 (2.07)	22.00 (0.00)	23.15 (7.22)	12.78 (1.70)	7.89 (5.76)

which can be attributed to the high prevalence of involuntary part-time work) and relatively less women in regional politics, and many of the countries display relatively high levels of religiosity. By contrast, for income status, lower percentages of CEE respondents have an average income and higher percentages have a high income compared with those in the WE countries.

Ready, willing, and able to use modern contraception: Multilevel analysis

In response to literature showing the importance of taking both men and women into account when studying contraceptive use (Balbo et al., 2013; Grady et al., 2010; Thomson, 1997), we start with a gender-specific model to identify the relationship between the individual-level characteristics and contraceptive use (Table 9.3).

Table 9.3 The relationship between readiness, willingness, and ability at the individual level, and contraceptive use for men (N = 13,471) and women (N = 15,861) [a]

	No contraception				Traditional contraception			
	Men		Women		Men		Women	
	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.857		0.747	**	0.298	***	0.345	***
Readiness								
Not wanting children (ref. = wanting)	0.703	***	0.777	***	0.942		0.916	*
Perceived cost of children	0.768	***	0.732	***	1.018		1.003	
Willingness								
Family values	0.871	***	0.885	***	0.784	***	0.851	***
Not religious (ref. = religious)	0.870	***	0.870	***	0.885	*	0.873	***
Ability								
Educational level (ref. = high)								
Studying	0.810		0.674	***	0.942		0.642	***
Low	1.579	***	1.745	***	1.467	***	1.356	***
Middle	1.152	***	1.210	***	1.161	**	1.051	
Employment status (ref. = employed)								
Unemployed	1.149	***	1.135	***	1.126	*	1.199	***
Non-employed	1.112		1.164	***	1.099		1.119	**
Income level (ref. = 81-120%)								
≤ 50% of median income	1.062		1.002		1.031		0.953	
51-80% of median income	1.040		0.990		1.017		0.954	
> 120% of median income	0.922	**	0.958		0.991		0.992	
Urban residence (ref. = rural)	0.892	***	0.888	***	0.874	***	0.876	***

Notes. [a] All models are controlled for age, age squared, number of children, and marital status.
* $p < .05$, ** $p < .01$, *** $p < .001$

Overall, the results demonstrate that higher levels of readiness, willingness, and ability at the individual level play an important role in predicting respondents' modern contraceptive use. It is confirmed that those with no desire for children and those who assign higher costs to having a/another child are less likely not to use contraception than to use modern contraception. Furthermore, men and women with more modern family values or who are identified as unreligious, the higher educated and the employed, and those living in urban areas are more likely to use modern contraception rather than nothing or traditional methods. Only for women, being a student or being employed rather than non-employed are also related to a higher likelihood of using modern methods. Interestingly, no association between respondents' readiness and traditional method use is found, except for women with no childbearing desire who are more likely to use modern instead of traditional methods. Also the relationship between income and contraception could not be established, except for men with a high income who are significantly less likely not to use contraceptives.

As we largely find similar associations for men and women, further analyses are performed on the total sample while controlling for gender. A positive link is established between the levels of willingness and ability at the regional level, and modern contraceptive method choice (Table 9.4).

Table 9.4 Macro-level measurements and contraceptive use on the total sample (N = 29,332)[a]

	No contraception		Traditional contraception	
	OR	sign	OR	sign
Intercept	0.773	***	0.290	***
% Female part-time work	1.002		0.992	
% Religious	1.011	**	1.010	
Ratio of female to male income	0.991	**	0.993	**
% Women in regional politics	0.992	*	0.983	**

Notes. [a] All models controlled for gender, age, age squared, number of children, marital status, wanting children, perceived cost of children, family values, religiosity, educational level, employment status, income level, and residence. * p < .05, ** p < .01, *** p < .001

With regard to the first dimension, a higher prevalence of religious people in a region (OR = 1.011) is related to a higher likelihood of not using contraception instead of using modern methods. The predicted probabilities indicate that – holding all other variables constant – men and women who are living in the region with the highest prevalence of religiousness (i.e., Wschodni, Poland; % religious = 50.50; π = 7.9%) are twice as likely

Table 9.5 Cross-level interactions on the total sample (N = 29,332), separately included in the model [a]

Model		No contraception		Traditional contraception	
		OR	sign	OR	sign
1	*Readiness*				
	Not wanting children	0.742	***	0.907	***
	Part-time	1.004		0.994	
	Not wanting children x Part-time	0.996	***	0.997	*
2	Perceived cost of children	0.737	***	0.968	
	Part-time	1.002		0.990	*
	Perceived cost of children x Part-time	0.995	***	0.995	*
3	*Ability*				
	Educational level				
	Studying	0.725	***	0.744	***
	Low	1.629	***	1.387	**
	Middle	1.180	***	1.093	***
	Ratio income	0.991	***	0.990	**
	Educational level x Ratio income				
	Studying	0.996		0.990	
	Low	1.006	*	1.004	
	Middle	1.001		1.004	*
4	Educational level				
	Studying	0.736	***	0.768	**
	Low	1.646	***	1.316	***
	Middle	1.181	***	1.050	
	Women in politics	0.995		0.987	*
	Educational level x Women in politics				
	Studying	0.998		1.011	
	Low	0.990	***	0.990	**
	Middle	0.998		0.993	**
5	Urban residence	0.891	***	0.901	***
	Women in politics	0.989	**	0.972	***
	Urban residence x Women in politics	1.005	**	1.007	**

Notes. [a] All models controlled for gender, age, age squared, number of children, marital status, wanting children, perceived cost of children, family values, religiosity, educational level, employment status, income level, residence, % part-time workers, % religious, ratio of female to male income, and % women in regional politics. Each interaction term is included separately: five different models are displayed. Each model contains the same micro- and macro-level variables, only the interaction term differs. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

to report non-use over use as compared to those living in the region with the lowest prevalence (i.e., Brandenburg, Germany; % religious = 0.30; π = 4.0%). The second dimension shows that regions with higher levels of gender equality overall seem to be characterized by a higher likelihood of using modern methods. A higher income ratio (indicating smaller gender-specific income differentials, as women on average earn less than their male counterparts in almost all investigated regions) and higher percentages of women in regional politics are associated with a lower likelihood of not using contraception (OR $_{ratio\ female/male\ income}$ = 0.991; OR $_{\%women\ in\ regional\ politics}$ = 0.992) or relying on traditional contraception (OR $_{ratio\ female/male\ income}$ = 0.993; OR $_{\%women\ in\ regional\ politics}$ = 0.983). Accordingly, significant gaps in the patterns of contraceptive behavior can be identified between the regions with the lowest and highest levels of gender equality. Whereas the differences in probabilities are only 2% for non-use, they range from 6.0% (income ratio) to 13.0% (political participation) for traditional methods, and from 7.6% (income ratio) to 14.7% (political participation) for modern contraceptives.

In the final part of our analysis, we investigate whether the associations between readiness, willingness, and ability to use modern contraceptives at the individual level are moderated by these indicators at the contextual level (Table 9.5). With regard to readiness, the results confirm our expectations by showing that higher percentages of female part-time employment strengthen the relationship between not wanting a/another child (OR $_{none}$ = 0.996; OR $_{traditional}$ = 0.997) or assigning higher costs to it (OR $_{none}$ = 0.995; OR $_{traditional}$ = 0.995), and the lower likelihood of relying on no or traditional methods instead of using modern contraception. This suggests that respondents living in regions in which part-time employment is promoted, are more likely to be able to translate their readiness to use modern contraception into effective use.

With regard to the normative context, the associations between family values or religiosity and contraceptive use do not vary according to the percentage of religious people living in a region.

Interestingly, the interactions with both gender equality measurements indicate opposing effects, as the relationship between individual ability and using modern contraception is generally weakened in regions with a lower income ratio and strengthened in regions with lower percentages of women in politics. This partly confirms our expectation of empowering macro-ability. First, we find that the difference in the likelihood of using nothing instead of modern contraception between the lower and higher educated shrinks

in regions characterized by a lower income ratio (OR = 1.006). Likewise, the difference between the middle and higher educated in relying on traditional contraception becomes smaller in these regions (OR = 1.004). Second, the results show that the difference in the likelihood of using nothing or traditional methods, instead of using modern contraception, between the lower (OR $_{none}$ = 0.990; OR $_{traditional}$ = 0.990) or middle educated (OR $_{traditional}$ = 0.993) and the higher educated becomes larger in regions with lower prevalence of women in politics. The difference in relying on no or traditional contraception between respondents living in an urban area or in a rural area enlarges (OR $_{none}$ = 1.005; OR $_{traditional}$ = 1.007) in these regions.

9.6 Discussion and conclusion

A long tradition of research has focused on contraceptive *choice*, thereby holding men and – especially – women responsible for their "uncommitted" and "uninformed" choice if they opt for "irrational", ineffective methods (Fisher, 2000; Gribaldo et al., 2009; Johnson-Hanks, 2002). In line with scholars who have problematized this assumption, we used Coale's (1973) ready-willing-able framework to examine the complex intertwinements between structural, ideological, and technological conditions that impact contraceptive behavior. First, we tested whether individuals who are ready, willing or able are more likely to practice modern methods. Second, attention was paid to the (moderating) influence of contextual effects regarding reproductive rights, normative context, and gender equality.

We observed significant associations between each of the three preconditions, and using no or traditional contraceptives, while controlling for the other two. Evidence was found that both men's and women's characteristics matter, which confirms the relevance of taking men into account when studying reproductive behavior (Balbo et al., 2013; Grady et al., 2010; Thomson, 1997). Overall, individuals holding more modern family values and displaying low religious commitment are more likely to rely on modern methods, instead of using no contraception or traditional methods. The same seems to be true for the higher educated (rather than the lower or middle educated), the female students (rather than the higher educated), the employed (rather than the unemployed or, only for women, the non-employed), and those living in an urban area (rather than in a rural area). Interestingly, no association could be established between individual's readiness and the use of traditional methods, as men's fertility intentions, and men's and women's perceived cost of children seemed not significantly related to contraceptive method use.

This suggests that the decision of using traditional contraceptives over modern ones, or vice versa, is not resulting from a rational calculation between the costs and benefits of having children. Therefore, it explicitly questions the assumption that a linear transition from "irrational" traditional to "rational" modern methods is to be expected. Scholars suggest that social and cultural expectations in particular, as well as access and availability, may be the leading factors in behavioral change concerning traditional contraceptive use. Organizations such as the IPPF European Network (2013; 2012) primarily emphasize the importance of, on the one hand, increasing public awareness of reproductive health, altering social norms, and enhancing the knowledge of service providers while, on the other hand, making contraceptives more affordable and accessible. This concerns both WE and CEE countries.

Keeping in mind the heterogeneity across *and* within WE and CEE with regard to all individual-level factors under investigation, it would be too simplistic to argue that the "East-West" divide in contraceptive use can be merely explained by differentials in terms of individual readiness, willingness, or ability. Despite a few exceptions, no clear "East-West" distinction can be made, but some country-specific findings are worth noting. Georgia and Bulgaria show the highest prevalence of non-use and traditional method use, respectively, and as a consequence also the lowest percentages of modern method use. This is in line with previous comparative studies (Carlson & Lamb, 2001; Janevic et al., 2012; Klijzing, 2000; Serbanescu et al., 2005; Serbanescu & Seither, 2003). It is striking that for Georgia, this high level of non-use coincides with the observation that the country displays the lowest levels of individual readiness, willingness and ability. Moreover, the country documents among the highest abortion rates in the region (Serbanescu et al., 2005). Bulgaria, on the other hand, scores averagely on most indicators. This further strengthens the argument that traditional contraceptives should not be perceived as an uninformed choice.

The first set of results is thus only part of the story. Contraceptive practice is embedded in contexts with specific characteristics and, as such, regional-level dimensions of readiness, willingness, and ability seem to also relate to contraceptive usage, and to interact with the relation between individual determinants and contraceptive use. First, individuals are encouraged to use modern contraception in accordance with their childbearing desires in regions with a higher prevalence of female part-time employment. As part-time work is markedly lower in the CEE region, it can be argued that more attention for family policies may encourage modern contraceptive use in these countries.

Second, respondents from regions with more religiously committed residents are more likely not to use contraception instead of using modern methods, irrespective of their own religious belief or practice. Third, individuals living in regions with lower levels of gender equality are more likely to opt for not using any contraception or practicing traditional contraception rather than relying on modern methods. This adds to the few studies about this topic in developed countries (Bentley & Kavanagh, 2008; Clark, 2006). Particularly interesting is the observation that both gender equality indicators interact in opposing ways with the relationship between individual ability and contraceptive use, which underscores the importance of approaching gender equality as a multidimensional construct. On the one hand, the discrepancy between the lower or middle educated and the higher educated seems to be smaller in regions with lower female-to-male income ratios. This should be interpreted in light of the encouragement of dual-breadwinner households during the Soviet period before the 1990s, where women showed much higher rates of employment in CEE than in the West (Ferrera, 1996; Pascall & Manning, 2000). Despite the dramatic fall in GDP, increase in poverty and income inequality after the collapse of the socialist system, female employment rates nowadays remain similar in WE and CEE. This suggests that this indicator cannot be put forward as evidence for the "East-West" divide in contraceptive use patterns. On the other hand, the advantage of being higher educated and living in an urban area increases in regions with lower prevalence of female politicians. As for macro-readiness, it seems that especially the CEE countries could benefit from higher levels of female political participation. Further research is needed in order to disentangle the differing effects of distinct dimensions of macro-level gender equality.

Before turning to the conclusion, it is important to note that models such as Coale's (1973) have been subject to criticism because of the over-simplification of fertility-related decisions, intentions, and transitions, and therefore have been identified as limiting and potentially misleading (Fisher, 2000; Santow & Bracker, 1999). Nevertheless, scholars do recognize the value of this type of framework to order concepts and we are convinced that the implementation of the ready-willing-able argument serves here as a fruitful framework to integrate socioeconomic, cultural, and technological factors into our analysis of contraceptive use.

Several other limitations should be acknowledged. First, reproductive rights are measured as the percentage of female part-time employment whereas it entails much more complexity (Janta, 2014; Mills et al., 2014). Because of this, we checked the validity

of our measure by performing the analysis with two alternative measures – the percentage of households with at least one child below the age of three that uses *full-time formal childcare*, and the percentage of *mothers in parental leave* – and similar results were obtained. Second, we approach contraception from an individual's perspective, whereas it often results from a decision and negotiation process between partners (e.g., Bauer & Kneip, 2013; Kusunoki & Upchurch, 2011; Manning, Flanigan, Giordano, & Longmore, 2009). We attempted to expand on studies that emphasize the importance of men's preferences and parenthood desires (Balbo et al., 2013; Grady et al., 2010; Thomson, 1997) by taking both men's and women's characteristics into account. In this way, we extend previous research that merely focuses on the female population. Finally, the GGS only provides information on the key variables for eleven WE and CEE countries. Obtaining greater insight into the differing contraceptive use patterns across other European regions would be interesting as, for instance, use of the withdrawal method still persists in Southern European countries such as Italy, despite the introduction of more efficient methods (Dalla Zuanna et al., 2005; Gribaldo et al., 2009; Santow, 1993). Related is the limited number of countries in our analyses. This urged us to rely on the regional level for the macro-level measures.

In conclusion, on the one hand, our study demonstrates that the "East-West" divide remains relevant to this day as clear variance in contraceptive behavior can be noted. WE men and women generally report higher perceived costs of additional children and more modern family values, and WE regions are characterized by a higher prevalence of part-time employment and female political participation, and a lower prevalence of religiousness, which all are associated with higher levels of practicing modern contraception. At the same time, this rigid division between East and West tends to ignore the regional variation across European countries (Troitskaia et al., 2009). At the least, our results underline that future research would benefit from paying attention to a complex set of individual as well as contextual incentives and barriers that may play a role in opting for certain contraceptive methods.

10. CONTRACEPTIVE EFFICACY BY PARTNERS' DIVISION OF LABOR: (CONTRARY) EVIDENCE FOR A RATIONAL FERTILITY APPROACH[27]

Fertility behavior has been theorized as a rational response to the difficulty of reconciling work and family life. Because contraceptive use can be considered a function of people's fertility intentions, it follows that partners' division of labor – and the related costs of contraceptive failure – might also influence their use of less-effective or more-effective contraceptives. We aim to extend the theoretical frameworks developed to examine fertility to contraceptive use, and to empirically test the assumption that contraception is a rational choice based on partners' division of labor. Data from the Generations and Gender Survey (GGS; 2004-2011) for ten European countries is used (N = 18,678). We select a subsample of co-residential men and women (aged 18-45) in need of contraception. Multinomial logistic fixed effects models are estimated to test the hypotheses. The results indicate that women's employment and working hours are positively related to contraceptive efficacy, but no associations are found with men's employment. At the couple level, it is shown that both dual-earner households and those in which the woman performs more housework are increasingly likely to practice effective contraception compared with female breadwinner households and couples where tasks are divided more equally. In all, fertility research on the division of labor proves to be a useful tool to gain understanding of both rational and so-called "irrational" less-effective contraceptive use.

10.1 Introduction

Although at different speeds and extents, the second half of the twentieth century in Europe was characterized by widespread social changes in women's socioeconomic position, heading toward greater gender equality and a shift from male breadwinner families to dual-earners (Aboim, 2010; Lewis et al., 2008; Ma, 2010). The dual-earner model first became dominant in communist countries, as a result of rapid economic growth and the vast demand for an urban industrial labor force (Panayotova & Brayfield, 1997). Female employment was greatly encouraged by the Soviet ideology, among other

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[27] Dereuddre, R., & Bracke, P., *submitted*.

things by generous maternity leave systems and affordable childcare services (Oláh & Fratczak, 2004; Stloukal, 1999; Szelewa & Polakowski, 2008). In non-communist countries, the sharp rise in female labor force participation could be framed within women's emancipation and gains in independence (Ma, 2010). Young women were encouraged to enhance their employment potential through increased levels of education (McDonald, 2006).

The early liberalization of abortion laws in the Soviet Union – the dominant method of birth control for many decades – (Stloukal, 1999) and the introduction of highly effective contraceptives (e.g., the pill and intra-uterine device (IUD)[28]) during the 1960s in Western countries are considered principal components in these transformations (van de Kaa, 2011). They facilitated, among other things, fertility planning by enabling couples to control and time pregnancies more accurately (Frejka, 2008a; van de Kaa, 2011) – thereby allowing them to achieve their personal, social, and professional aspirations more easily (IPPF European Network, 2015) – and hence also contributed to the historic transformation of childbearing patterns, characterized by a pronounced delay to parenthood and a decline in fertility rates (van de Kaa, 2011).

Despite the close intertwinements between the changes in households' division of labor, the availability of effective fertility regulation, and the low fertility rates over time, it is mostly the (reverse) links between partners' share in paid and unpaid labor, and their fertility behavior that have been extensively examined (Neyer, Lappegård, & Vignoli, 2013). The difficulty of reconciling paid employment and family responsibilities has been a prominent focus in fertility research (Begall & Mills, 2011), and many studies recognize the importance of gender equality between partners in predicting childbearing decisions (Neyer et al., 2013). However, it remains greatly debated whether gender equality promotes or impedes fertility. Empirical results show that less gender equality does not always imply lower fertility intentions or less childbearing, and that greater gender equality does not necessarily translate into higher fertility intentions or more childbearing. Either way, fertility choices are usually defined as rational responses to uncertainty because of working conditions, (un)equal sharing of domestic responsibilities, and the like (Balbo et al., 2013).

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[28] The first IUDs were introduced earlier, in the 1920s, but were not in general use before the 1960s (Frejka, 2008a).

The current paper aims to test whether this rational appraisal, in which people evaluate the costs and the benefits of (not) having children before making a decision about pregnancy (Kaufman & Bernhardt, 2012), can also be applied to contraceptive use. Contraception research is mainly driven by the assumption that contraceptive users act as rational agents, who can be expected to use contraception when they want to postpone a pregnancy, and to rely on more-effective contraceptive methods when the costs of contraceptive failure are higher (e.g., when postponing childbearing because of professional aspirations) (Gribaldo et al., 2009; Johnson-Hanks, 2002). In turn, people practicing natural family planning or other less-effective methods in societies where birth control is generally considered the standard, are perceived as irrational, uninformed, or uncommitted to contraception. To the best of our knowledge, this study is the first to empirically test this assumption, by building a bridge between contraception and fertility research. Furthermore, the application of fertility theory to the domain of studying contraceptive use offers a new set of comprehensive frameworks – which are currently lacking – to examine contraception in greater detail. We make use of a combination of studies that either investigate fertility intentions or the actual postponement of or transition to childbearing – being aware that these outcomes do not necessarily align (Toulemon & Testa, 2005) – to formulate our hypotheses, and we rely on data from the GGS (2004-2011) to perform the analyses.

10.2 Theoretical framework

Scholars maintain that the gender revolution consists of a two-step process (Goldscheider, 2000; Goldscheider, Bernhardt, & Lappegård, 2014; Goldscheider, Olah, & Puur, 2010; Lappegård, Neyer, & Vignoli, 2015). The first step is characterized by an increase in gender equality in the public sphere, as a result of women becoming higher educated, and integrating in the labor force and political processes. In the second step, gender equality expands into the private sphere of the home and family, leading to more male involvement in housework and care, and a more symmetric gender arrangement of family responsibilities. It has been repeatedly noted that this second phase lags behind the first, which is empirically confirmed in research that points to women's persistently unbalanced share in unpaid labor (Lachance-Grzela & Bouchard, 2010).

Accordingly, previous research mainly focuses on gender equality in terms of – primarily women's – labor force participation and partners' division of household work, and how these relate to fertility behavior.

After Parsons (1959), who argues that sex-role segregation in households is a functional necessity for marital stability, Becker (1991) elaborates on how an efficient household is based on specialization in the allocation of time and the accumulation of human capital. He suggests that biological differences (i.e., women bear children) and environmental contexts (e.g., labor market discrimination against women) urge couples to allocate men's time to the labor market sector and women's time to the household sector. The shift away from male breadwinner families because of women's better education, improved career opportunities, and growing economic independence has therefore had far reaching consequences for family life (Becker, 1991; Blossfeld & Huinink, 1991).

Women's labor force participation lies at the heart of most explanations of fertility behavior (Brewster & Rindfuss, 2000). The most influential economic approach to fertility behavior is the "New Home Economics" (Becker, 1960, 1991), which posits that the significance of children decreases to the extent that women invest in their job careers (Blossfeld & Huinink, 1991). Given that the association between female employment and fertility implies an incompatibility between paid work and caring for the home and children, it is suggested that women's increasing labor force participation goes hand in hand with falling fertility levels (Brewster & Rindfuss, 2000; Kohler, Billari, & Ortega, 2006). Being in employment raises the costs of childbearing, and time spent in labor market work reduces the time and energy available for child rearing. For women who are pursuing careers, time spent out of the labor force, especially if this occurs early in a career track, negatively affects occupational advancement (Brewster & Rindfuss, 2000; Kravdal, 1992, 1994). This is also related to the "motherhood wage penalty," with the postponement of childbearing providing considerable earning returns for women in professional occupations (Balbo et al., 2013), and the "motherhood effect," which points to the close interrelation between women's reduced working hours and the presence of children (Fagan & Rubery, 1996; Tang & Cousins, 2005). Postponement of childbearing is therefore identified as women's rational response to the higher opportunity costs of having children, and this to a larger extent among those with greater human capital (Brewster & Rindfuss, 2000; Gustafsson & Worku, 2005; Kohler et al., 2006; Van Bavel, 2010). Multiple empirical studies support this argument, and find an association between women's employment on the one hand, and their lower intentions to make the transition to parenthood or the actual delay of childbearing on the other hand (Iacovou & Tavares, 2011; Modena & Sabatini, 2012; Schmitt, 2012).

This argument can also be applied to contraceptive use, through the simultaneous rise in opportunity costs and the costs of contraceptive failure. Some evidence is found that women's employment is linked to the use of more-effective contraceptives, such as hormonal methods, and that unemployment and non-employment (e.g., being a homemaker) are associated with non-use, and the use of less-effective contraceptives such as natural family planning and barrier methods (Dereuddre, Van de Putte, et al., 2016; Dereuddre, Van de Velde, & Bracke, 2016; Spinelli et al., 2000). Therefore, our first hypothesis is that *women's higher investment in paid labor is associated with more-effective contraceptive use (H1)*. In addition, we go beyond the line of research dealing with opportunity costs, with its unilateral focus on the consequences of women's labor force participation for fertility, considering men's work as an afterthought, or not considering men's work at all. This "blaming women" approach, as Goldscheider (2000) defines it, is fueled by the prevailing norm of men's role as the main family provider and the fewer obstacles they face in combining paid and unpaid work (Kaufman & Bernhardt, 2012). At odds with the empirical findings for women, it is shown that men's employment and higher pay relate to a higher likelihood of having a child, and that their unemployment promotes the postponement of having children (Kaufman & Bernhardt, 2012; Schmitt, 2012). This leads us to expect that *men's lower investment in paid labor is associated with more-effective contraceptive use (H2)*.

An important critique toward the opportunity costs thesis comes from Oppenheimer (1994), who pinpoints the importance of partners' accumulation of resources (Balbo et al., 2013). She argues that women with a higher socioeconomic position are more likely to have a partner with a higher position, which enables couples to pool their resources and may act as an incentive rather than a barrier to make the transition to parenthood. This argument is further strengthened by recent research into female breadwinner families. Rather than reflecting ideological commitments to gender equality, this type of arrangement is often dictated by economic necessity (e.g., due to male unemployment) (Drago, Black, & Wooden, 2004; Vitali & Arpino, 2016) and economic uncertainty – due to either unemployment or precarious work positions – and is found to inhibit long-term commitments that require a secure economic basis, such as parenthood (Mills & Blossfeld, 2005; Oppenheimer, Kalmijn, & Lim, 1997). Empirical evidence regarding fertility behavior among female breadwinners is, however, scarce. Some support is found for the suggestion that female breadwinners are on average less likely to have childbearing intentions in the near future, but this only holds true for those with no children (Vitali & Testa, 2016). Another pattern is found in male breadwinner families,

which are more often based on a deliberate choice to stay at home (Schmitt, 2012). Cooke (2004) shows that German male breadwinner families display higher probabilities of having a second child than dual-earner couples. We cautiously summarize these findings as a somewhat linear pattern by household type, with male breadwinner families being most likely to have (additional) children, followed by dual-earners, and then female breadwinner families. Translated into contraceptive behavior, we can posit that *female breadwinner households will be more likely to rely on more-effective contraceptive use compared with male breadwinner households and dual-earner households (H3).*

Division of household work, fertility, and contraceptive use

Fertility theory has also embraced couples' division of housework as an important predictor of family planning (Mills et al., 2008; Neyer et al., 2013). The reasoning behind this is closely linked to the lagging second step in the gender revolution, with women continuing to carry a double burden (Esping-Andersen, 2009; McDonald, 2000a, 2000b, 2013), and the economic theoretical arguments raised above. For example, Olàh (2003) associates the prime role of housework in predicting fertility to the "role incompatibility hypothesis," which posits that (additional) childbearing may constitute a threat to women's economic independence. It is assumed that the time and energy involved in the work role become unavailable for the family role, and vice versa.

Basically, it is suggested that men and women make fertility decisions based on specific future expectations of their partner's engagement in the household (Mills et al., 2008). Most research concludes that the likelihood of parenthood increases as the burden of domestic work is split more evenly between the partners (Mills et al., 2008; Neyer et al., 2013; Olah, 2003). More specifically, it is found that men's participation in household duties increases both the intentions and likelihood to have children. Torr and Short (2004), on the other hand, find a U-shaped pattern rather than a linear one. They show that both "modern" couples (who share household tasks more equally) and "traditional" couples (in which the woman performs the overall share of housework) proceed more quickly to a second birth. Translated into contraceptive behavior, most of the findings suggest *men's lower share in household labor is associated with more-effective contraceptive use (H4).*

Some scholars add that it is not only the division of paid and unpaid labor in itself, but also the interaction between the two that has significant implications for fertility behavior. Over time, three distinct phases in women's status are identified: (1) where women earn low wages compared with men, and are fully responsible for the home and raising children; (2) where women have improved their labor market position but not their position in the household, as they remain primarily responsible for housework and childcare; and (3) where women's labor market opportunities equal those of men, which is at the same time compensated for by higher male participation in the household (Feyrer, Sacerdote, & Stern, 2008).

It has been argued that the discrepancy in women's roles in particular is the main driver behind lower fertility levels (Esping-Andersen, 2009; Rindfuss, Brewster, & Kavee, 1996), as women are only able to compete in the labor market against their male counterparts as equals if they are not constrained by family roles (McDonald, 2000a, 2000b, 2013). By dividing housework more equally between partners, women's professional roles become increasingly compatible with having children, which has beneficial effects on the progression to having a child (Cooke, 2009). Accordingly, we expect that *women's higher investment in paid labor is associated with more-effective contraceptive use, but to a lesser extent if their partner performs a higher share of household labor (H5).*

10.3 Method

Data

Data from the first wave of the GGS is used to test our hypotheses (UNECE, 2005). This wave was collected between 2004 and 2011 in 17 European countries, from which we use all the countries that provide the necessary information about contraceptive use and the other key variables: Austria, Bulgaria, the Czech Republic, France, Germany, Lithuania, Norway, Poland, Romania, and the Russian Federation. The GGS is a longitudinal panel survey that aims to gather representative data across three waves. Respondents aged between 18 and 79 were interviewed face-to-face (or in Norway, via telephone interviews and self-administered postal surveys), covering questions on fertility, partnership, and other sociodemographic themes. Extensive efforts have been made to improve between-country comparability, by providing the survey design,

common definitions, a standard model questionnaire, and common instructions that each participating country had to follow (Vikat et al., 2007).

For the current study, we use a subsample of male and female respondents between 18 and 45 years of age, who are in a co-residential heterosexual partnership. In line with other research into contraception, we only include people who are in need of pregnancy prevention (Klijzing, 2000). That is: female respondents who are not (trying to become) pregnant and male respondents who do not have a pregnant partner or whose partner is not trying to become pregnant, respondents who are physically able to have children and whose partner is fertile (thereby also excluding people who are sterilized), and respondents with no desire for children at the time of the survey. Cases with missing information are deleted listwise (independent variables: ≤ 5.0%; dependent variable: 6.3%). Our final subsample consists of 18,678 respondents (N $_{men}$ = 7721; N $_{women}$ = 10,957).

Measurements

Dependent variable. We distinguish between four groups of contraceptive users, ranked according to effectiveness: (1) those relying on natural family planning (withdrawal, rhythm method), (2) those practicing barrier methods (condom, diaphragm/cervical cap, foam/cream/jelly/suppository), (3) those using short-acting female methods (the pill, injectables) (reference category), and (4) those using long-acting reversible female methods (intra-uterine device (IUD), implants). Respondents who relied on multiple methods are categorized through the most-effective method used (e.g., those combining withdrawal and condoms are grouped as practicing barrier methods), but those relying on the combination of condoms and any short or long-acting reversible female method are excluded because of the complex relation with the function of condoms in disease prevention. Hormonal emergency contraception, Persona, and using "other" methods are not included, as these cannot be straightforwardly allocated into one of the categories. Those using a contraceptive patch are also excluded because of comparability issues, as this method is not questioned in all countries under investigation. A fifth category is added to account for respondents who were not using any contraceptives.

Independent variables. *Employment status* is a categorical variable that differentiates between respondents: (1) who are in paid employment, (2) who are unemployed, and (3)

who are non-employed because of study, retirement, parental leave, long-term illness or disability, being a homemaker, or being in military or social service (reference group). Respondents reporting "other" employment are excluded.

Working hours are included as a conditional factor for the employed, as a way to measure respondents' job investment. Employed men and women were asked how many hours per week they normally worked in their job, including overtime. Furthermore, information is available on whether they also earned money from any additional work (second jobs, part-time self-employment, etc.), and if so, how many hours they spent per week in it. We add together the hours of the main and additional jobs in order to get a more complete picture of respondents' working hours. Four categories are distinguished: (1) working 1-19 hours, (2) working 20-34 hours, (3) working 35-49 hours, and (4) working 50 hours or more (Eurofound, 2007). The third category is used as the reference group.

In addition to the question regarding respondents' employment status, the GGS also asked about their partner's employment status. The combination of the employment status of the male and female partner is used to construct the *division of paid labor* and brings us to the following three categories: (1) male breadwinner households, where the man is employed but the woman is not, (2) female breadwinner households, where the woman is employed but the man is not (reference category), and (3) households where both partners are employed. To avoid selection bias, we include households where both partners are not employed as a fourth category.

Women's share in working hours is relied on as a conditional factor for households in which both partners are employed. Similar data is available for the partner's working hours as for the respondents. Women's share is calculated by the formula: [the number of working hours of the female partner / (the number of working hours of the male partner + the number of working hours of the female partner)], and the results are grouped into three categories: (1) 1-40%, (2) 41-59% (reference group), and (3) 60-99%.

To measure the extent of egalitarianism in the *division of housework*, it is suggested to focus on stereotypically female tasks that are routine and ongoing (Batalova & Cohen, 2002). Men carrying out a greater share of routine tasks indicates an improvement in gender equality at home. We look at four such chores: preparing daily meals, doing the dishes, shopping for food, and vacuuming the house. Which partner carried out each task is determined by means of seven categories: always the respondent, usually the respondent,

the respondent and partner about equally, usually the partner, always the partner, always or usually other people in the household, and always or usually someone not living in the household. Tasks shared equally or performed by someone else were coded 0 (Geist & Cohen, 2011). We assign a value of -2 if a task was always performed by the woman and a value of -1 if a task was usually carried out by the woman. If the male partner always or usually did the chores, a score of respectively 2 or 1 is given. Accordingly, a negative total score represents a woman's higher share in housework whereas a positive one indicates a man's higher involvement. The mean score of partners' division of the chores is calculated if a respondent provided an answer to at least two of the four questions. Lastly, three categories are constructed, enabling us to detect the linearity of the housework effect: (1) the woman does (almost) all of the tasks (index score between -2 and -1), (2) the woman does most of the tasks (index score between -0.99 and -0.01), (3) the tasks are shared equally or the man does most of the tasks (index score 0 or above).

Control variables. All models are controlled for *age* and *age squared*. We take three additional socioeconomic indicators into account. First, *educational attainment* is coded as a set of three dummy variables: (1) low educated (ISCED 0-2), (2) middle educated (ISCED 3-4), and (3) high educated (ISCED 5-6). The high educated are used as the reference group. Second, for the *income position* of the respondents, we group people's income according to the country-specific and gender-specific median: (1) respondents living in relative poverty (≤ 50% of the median), (2) respondents with a low income (51-80% of the median), (3) respondents with a median income (81-120% of the median; reference category), and (4) respondents with a high income (> 120% of the median). To account for item non-response (11.1% for men and 13.7% for women), the data for income is completed using multiple imputation techniques. The presented estimates are based on the five different datasets that were generated to this end. Third, a dummy variable is included to control for the respondent's *type of residence* (0 = rural, 1 = urban). We also pay attention to differences in family characteristics in terms of partner status (0 = married, 1 = cohabiting) and parity (1 = no children (reference category), 2 = one child, 3 = two children, 4 = three or more children). Lastly, we assess whether the respondent intended to *have children later*. A distinction is made between those who did not want to have any (more) children (= 0) and those who wanted one or more children in the future (= 1).

Analytical strategy

Given that our dependent variable consists of five categories, we conducted multinomial logistic regression analyses. The respondents (level 1) are hierarchically nested in ten countries (level 2), which implies that men and women who are living in the same country tend to be more similar than those living in different countries (Hox, 2010). The clustered data structure is taken into account by using fixed effects models. In comparison with conventional multilevel analysis, this approach has the advantage that it can be used with a small number of countries (Möhring, 2012). Moreover, it has been proved a valuable alternative – mainly in cases when considering lower-level effects, which is the case in the current paper – as the estimations are similar across both statistical techniques. In practice, fixed effects modeling takes country-level variance into account by including N-1 country dummies.

The first set of hypotheses (H1 and H2) focuses on individual characteristics and is modeled by separating the sample according to gender. First, we examine whether employment status relates to the effectiveness of contraceptive use for men and women separately. Next, working hours are included as a conditional factor for the employed, by means of internal interaction effects. This procedure enables us to include an indicator (here: working hours) that only applies to respondents in a particular situation (here: being in employment) (Mirowsky, 1999). Accordingly, we can compare employed respondents who work 1-19 hours, 20-34 hours, or $\geq$ 50 hours, with those who work a more conventional 35-49 hours.

The second set of hypotheses (H3 and H4) focuses on the division of labor between partners. We use the total sample to test these hypotheses, and additionally control for the gender of the respondent (which does not significantly alter the results). In a first step, we investigate whether households in which both partners are employed, both partners are not employed, or only one partner is employed, differ in using more-effective or less-effective contraceptives. In a second step, we add internal moderators to differentiate between the different types of dual-earner households; we compare between those in which the woman's share of working hours equals 1-40%, 41-59% (reference category), and 60-99%. In a third step, we add the division of housework to test whether men's share in household labor is associated with more-effective contraceptive use.

Lastly, hypothesis H5 concerns the interaction between women's paid employment and the division of household labor between partners, and is tested by integrating an external interaction effect (applicable to all respondents) in the model (Mirowsky, 1999).

All the presented models include the control variables and the country dummies. The log odds are transformed to odds ratios for the interpretation of the effects. However, caution is necessary when comparing odds ratios across different models, because they reflect a certain degree of unobserved heterogeneity (Mood, 2010). To enhance comparability among the models based on the same sample, the coefficients are y-standardized.

10.4 Results

Descriptive statistics

Table 10.1 shows the descriptive statistics of the key variables. In the total sample, short-acting reversible methods are the most commonly used (27.0%) and natural family planning the least (13.5%). Despite the between-country variation, the majority of respondents in most countries use short or long-acting reversible female methods, the most effective reversible contraceptives available. Some exceptions can be observed: most men and women rely on natural family planning in Bulgaria, on barrier methods in Poland and Romania, and on non-use in Lithuania (although the percentage difference with those using short-acting female methods is only 0.5%).

With regard to gender-specific employment status, similar patterns are detected across all the countries. The overall majority of men is in paid employment (ranging from 71.7% in Bulgaria to 95.9% in Austria) and only a minority is unemployed or non-employed. In addition, most women are employed (ranging from 57.6% in Germany to 78.0% in Norway), although a significant proportion is non-employed (from 11.9% in Bulgaria to 35.9% in Germany). The notably high unemployment rates for Bulgarian men and women can be linked to the dramatic economic consequences following the collapse of the Soviet system in the 1990s, and the observation that the country was "the economic laggard" of the region (Carlson & Lamb, 2001; Vassilev, 1999).

Furthermore, the patterns for the division of paid and unpaid labor are also quite similar in the different countries. Most households consist of two partners who are employed (ranging from 51.2% in Bulgaria to 72.3% in Norway), followed by around one third of

Table 10.1 Descriptive statistics (%)

	Total sample	Austria	Bulgaria	Czech Republic	France	Germany	Lithuania	Norway	Poland	Romania	Russian Federation
N	18,678	1888	2885	1172	1737	956	1373	2355	2689	2186	1437
Contraceptive use											
No method	20.5	18.3	23.6	18.2	9.2	3.3	25.3	22.2	33.0	20.4	12.9
Natural family planning	13.5	2.2	35.6	7.9	1.6	5.8	15.5	0.3	11.8	24.2	15.0
Barrier methods	21.2	22.1	20.6	18.0	7.7	12.1	21.2	11.5	37.1	24.7	27.2
Short-acting reversible methods	27.0	35.8	5.9	43.6	53.5	65.7	24.8	29.3	18.0	20.9	10.9
Long-acting reversible methods	17.8	21.7	14.2	12.3	28.1	13.1	13.3	36.6	0.1	9.8	34.0
Employment status (male sample only)											
Employed	88.8	95.9	71.7	91.8	93.1	87.2	91.4	93.8	89.3	90.4	87.6
Unemployed	7.7	1.9	25.2	4.1	5.6	7.9	5.2	0.8	7.1	7.0	7.0
Non-employed	3.5	2.2	3.1	4.1	1.2	5.0	3.4	5.4	3.6	2.6	5.3
Employment status (female sample only)											
Employed	66.8	69.8	64.7	65.5	72.2	57.6	68.4	78.0	58.4	65.7	67.8
Unemployed	8.8	3.1	23.3	8.0	6.3	6.5	6.0	0.9	11.7	3.3	6.4
Non-employed	24.4	27.2	11.9	26.5	21.5	35.9	25.5	21.1	30.0	31.0	25.8
Division of paid labor											
Male breadwinner	28.3	28.2	22.8	29.0	24.4	36.6	29.6	21.0	35.2	33.2	28.5
Female breadwinner	5.6	2.5	10.8	2.6	4.2	4.3	5.2	3.8	5.3	5.5	8.4
Both partners employed	60.2	67.1	51.2	63.7	68.4	51.9	61.0	72.3	54.6	56.2	58.6
Both partners not employed	5.8	2.2	15.2	4.8	3.0	7.2	4.1	2.9	4.9	5.1	4.5
Division of household labor											
Woman does (almost) all of the tasks	44.7	45.1	56.5	49.2	41.9	38.6	52.2	17.0	48.0	52.8	43.6
Woman does most of the tasks	37.7	36.4	33.8	35.4	38.2	43.7	35.3	51.7	28.5	37.9	40.8
Shared equally/man does most of the tasks	17.6	18.5	9.7	15.4	19.9	17.7	12.5	31.3	23.5	9.2	15.6

the households that rely on a male breadwinner model. With regard to housework, it is not surprising that the highest share of household labor is still performed by women, with them often carrying out (almost) all the tasks. The prevalence ranges from 38.6% in Germany to 56.5% in Bulgaria, leaving aside Norway, which has a remarkably lower proportion of couples in which the female partner performs (almost) all tasks (17.0%) and a greater proportion of couples in which housework is shared equally or in which men carry out a larger share (31.3%).

Multinomial logistic regression models

Table 10.2 shows the results of the multinomial logistic fixed effects models. Models 1 and 2 display the association between men's and women's employment status respectively, and their contraceptive use. For men, we do not find a significant association between work status and contraception. When adding the working hours of the employed via internal interaction effects, however, we find that men who work 1-19 hours are less likely to not use any contraceptives (OR = 0.607), and that men who work 50 hours or more are more likely to have a partner who relies on long-acting reversible methods (OR = 1.132) as compared to men who work regular full-time hours. These findings largely undermine our hypothesis that men's lower investment in paid labor would be associated with more-effective contraceptive use (except for men working 1-19 hours). For women, being in employment is associated with a lower likelihood of practicing less-effective methods (OR $_{no\ method}$ = 0.776; OR $_{natural\ family\ planning}$ = 0.845; OR $_{barrier\ methods}$ = 0.846) and a higher likelihood of using more-effective methods (OR = 1.134) compared with being non-employed. The inclusion of women's working hours further indicates that the overall negative association between employment and using barrier methods is stronger for full-time workers. In other words, among the employed, women in a part-time arrangement are more likely to rely on barrier methods than those working full-time (OR $_{1-19\ hours}$ = 1.271; OR $_{20-34\ hours}$ = 1.126). Overall, this supports our hypothesis that women's higher investment in paid labor is associated with more-effective contraceptive use. Additional analyses were carried out to test whether these associations are characterized by an educational gradient, as many researchers suggest that the notion of greater opportunity costs of fertility mainly applies to the higher educated (Brewster & Rindfuss, 2000; Gustafsson & Worku, 2005; Kohler et al., 2006; Van Bavel, 2010). However, we did not find any significant differences (results not shown).

Table 10.2 Multinomial logistic fixed-effects models for the associations between employment status, the division of labor, and contraceptive use (N $_{male\ sample}$ = 7721; N $_{female\ sample}$ = 10,957; N $_{total\ sample}$ = 18,678; N $_{countries}$ = 10) [a]

	No method		Natural family planning		Barrier methods		Long-acting reversible female methods	
	OR	sign	OR	sign	OR	sign	OR	sign
Model 1a: Employment status (male sample only)								
Employed	0.931		0.871		0.933		1.068	
Unemployed	1.034		0.950		0.861		0.995	
Non-employed (ref.)								
Model 1b: Employment status, for the employed conditional on working hours (male sample only)								
Employed	0.920		0.875		0.940		1.040	
x Working hours								
x 1-19 hours	0.607	*	0.750		0.755		0.636	
x 20-34 hours	1.051		1.059		1.084		0.942	
x 35-49 hours (ref.)								
x ≥ 50 hours	1.053		0.977		0.960		1.132	**
Unemployed	1.034		0.949		0.860		0.994	
Non-employed (ref.)								
Model 2a: Employment status (female sample only)								
Employed	0.776	***	0.845	**	0.846	***	1.134	**
Unemployed	1.061		1.096		0.997		1.108	
Non-employed (ref.)								
Model 2b: Employment status, for the employed conditional on working hours (female sample only)								
Employed	0.759	***	0.816	***	0.798	***	1.084	
x Working hours								
x 1-19 hours	1.032		1.016		1.271	**	1.082	
x 20-34 hours	1.072		1.073		1.126	*	1.098	
x 35-49 hours (ref.)								
x ≥ 50 hours	0.991		1.080		1.087		1.109	
Unemployed	1.057		1.093		0.991		1.105	
Non-employed (ref.)								
Model 3a: Division of paid labor (total sample) [b]								
Male breadwinner	1.076		0.912		1.018		0.838	**
Female breadwinner (ref.)								
Both partners employed	0.871	*	0.786	***	0.918		0.955	
Both partners not employed	1.312	***	1.097		0.995		0.860	

Model 3b: Division of paid labor, for the dual-earners conditional on woman's share of working hours (total sample) [b]

Male breadwinner	1.077		0.913		1.022		0.842	**
Female breadwinner (ref.)							
Both partners employed	0.869	*	0.777	***	0.896		0.936	
x Woman's share in paid labor							
x 1-40%	1.007		1.031		1.105	**	1.083	*
x 41-59% (Ref.)							
x 60-99%	0.976		1.076		1.072		1.016	
Both partners not employed	1.313	***	1.098		0.997		0.862	

Model 4: Division of household labor (total sample) [c]

Woman does (almost) all of the tasks	1.010		1.043		0.930	*	0.984	
Woman does most of the tasks (ref.)							
Shared equally/man does most of the tasks	1.096	*	1.071		1074.000	*	0.991	

Notes. [a] The reference group for the dependent variable is "short-acting female methods". All models are controlled for country, age, age squared, education, income, type of residence, partner status, number of children, and desire for children; [b] Models additionally controlled for gender; [c] Model additionally controlled for gender and the division of paid labor. *** $p < .001$; ** $p < .01$; * $p < .05$

Models 3a and 3b show how contraceptive use differs by household type. First, the results indicate that contraceptive use in female breadwinner households is largely similar to that in male breadwinner families or households in which both partners are unemployed. We only find a lower likelihood to use long-acting methods in male breadwinner families (OR = 0.838) and a higher likelihood of non-use in households where neither of the partners is employed (OR = 1.312). Model 3a further indicates that dual-earners are less likely to rely on non-use (OR = 0.871) or natural family planning (OR = 0.786) as compared with female breadwinner households, whereas the differences in barrier methods and long-acting female methods are conditional on the woman's share of working hours. Specifically, we find that dual-earner households in which the share of paid labor is divided more equally are more likely to rely on barrier methods or long-acting female methods than short-acting female methods, compared with dual-earner households in which the woman's share is up to 40% (OR barrier methods = 1.105; OR long-acting reversible methods = 1.083). Despite a few exceptions, these results do not support our hypothesis that female breadwinners are more likely to rely on more-effective contraceptive use compared with male breadwinner and dual-earner households.

The final part of the analysis includes the division of household labor. In line with hypothesis H4 – men's lower share in household labor is associated with more-effective

contraceptive use – we find a positive association between men's involvement in housework, and the use of no contraceptives (OR $_{shared\ equally/man\ does\ more\ tasks}$ = 1.096) or barrier methods (OR $_{women\ does\ all\ tasks}$ = 0.930; OR $_{shared\ equally/man\ does\ more\ tasks}$ = 1.074) instead of short-acting female methods. Put differently, households in which the woman performs the largest share of housework are more likely to rely on short-acting female methods rather than on non-use or barrier methods. The last hypothesis (H5), concerning the interaction between women's paid employment and the distribution of household labor, is not confirmed; no significant relations are found (results not shown).

10.5 Discussion and conclusion

The current paper aimed to investigate the fruitfulness of using a rational fertility framework based on the division of labor to investigate contraceptive behavior. Three sets of hypotheses were formulated: the first focuses on how men's and women's individual investment in paid labor is associated with less-effective or more-effective contraceptive practice, the second concerns how partners' division of paid and unpaid labor is related to contraception, and the third examines the interaction between women's employment and partners' division of housework, and contraceptive use. Overall, the findings align with the expectations based on fertility theory to some extent, but some call for alternative explanations.

With regard to people's job investment, we find it is mainly women's employment status and working hours that are significant in predicting couples' contraceptive effectiveness. Women in paid employment are less likely to practice no method or less-effective contraceptives – such as natural family planning or barrier methods – compared with their non-employed counterparts (mainly homemakers or women on parental leave; descriptives not shown). At the same time, they are also more likely to use highly-effective long-acting reversible methods rather than short-acting female methods. Among those who are employed, women working full-time report a lower likelihood of relying on less-effective barrier methods than women in part-time working arrangements (< 35 hours per week). These findings largely support our hypothesis, confirm the few previous results in the domain of contraception that also indicate a positive association between employment and contraceptive effectiveness (Spinelli et al., 2000), and align with the idea that an increase in the opportunity costs of childbearing for women – here measured in terms of job investment – translates into increasing costs of contraceptive failure and a higher uptake of more-effective methods. In fertility research, these

opportunity costs are mainly linked to women with higher human capital – because of their time spent in life domains that compete with family (e.g., education or establishing a career) – and with higher earning potential (Brewster & Rindfuss, 2000; Gustafsson & Worku, 2005; Kohler et al., 2006; Van Bavel, 2010). Our results, however, demonstrate that the association between employment and contraceptive use does not differ among the lower, middle, and higher educated (results not shown).

For men, the hypothesis that their lower investment in paid labor would be associated with the use of more-effective contraceptives is not supported, as no significant associations are found between their employment status and contraception. It should be noted that we also examined whether employed and unemployed men differ in this regard (Model 1a in Table 10.2, but with the unemployed as the reference group instead of the non-employed), but this association also proves to be not significant (results not shown). Nevertheless, in line with the hypothesis, the results do indicate that men working part-time are less likely to not use contraceptives than those working full-time and, opposing the hypothesis, that men working longer than conventional hours are more likely to have a partner who uses long-acting reversible methods. At first glance, the general results for men's and women's job investment support the traditional notion of gendered influence spheres, wherein women's characteristics are more likely to dominate decisions concerning the home and the family, and thus also childbearing (Jansen & Liefbroer, 2006) and contraceptive use. Moreover, it seems to fit with the sustained focus on the female population and the exclusion of the male population in the investigation of reproductive behavior (Almeling, 2015).

However, the second set of findings, which sheds light on the division of labor between partners, shows that the association between women's job characteristics and contraceptive behavior is not that straightforward. Whereas the aforementioned evidence suggests that couples' effectiveness in contraception advances linearly with women's job investment, our results indicate this is not necessarily the case. Instead, it seems to also depend on the dynamics resulting from the combination of the two partners' professional aspirations. For instance, whereas employed women who have a partner with or without paid employment do not substantially differ in their use of barrier methods and long-acting reversible methods, the latter (i.e., female breadwinner households) are more likely to rely on non-use or natural family planning instead of short-acting female methods compared with the former. A possible explanation for this finding relates to differences in time availability; an additional ANOVA test

demonstrates that women with an employed partner on average work fewer hours in paid labor than women living in a female breadwinner arrangement (mean difference = 3 hours per week; $p < 0.000$). Given that short-acting female methods require visiting a doctor, either to obtain a prescription (e.g., for the pill) or to insert the method (e.g., for injectables), a lack of time and energy (Christiaens & Bracke, 2014) might hamper the use of these forms of contraception in female breadwinner households and prompt couples to not use any contraceptives or to rely on always-and-readily-available natural family planning.

It is also interesting to note that this result suggests men's status as unemployed or non-employed only relates to non-use or less-effective use when combined with their partner being in paid employment. Linking this observation to these men's preparedness to stay at home and to commit to childcare does not take us any further, given that it is repeatedly shown that men in female breadwinner arrangements do not adhere to any sort of gender role reversal (Drago et al., 2004; Vitali & Arpino, 2016). A better explanation can be found in previous studies that observe "neutralizing" gender behavior in many men who are not employed, in order to compensate for their subordinate status (e.g., by performing far less housework than would be expected) (Greenstein, 2000). In some Eastern European countries – the countries that are characterized by the highest prevalence of natural family planning, mainly withdrawal, in our study (Table 10.1: e.g., Bulgaria, Romania) – withdrawal relates to self-discipline, mastering sexual performance and, overall, masculinity (IPPF European Network & UNFPA, 2012). Hence, performing withdrawal successfully might nourish men's masculine identity, something that cannot be said of reliance on short-acting female methods. Alternatively, the observation that only a few differences are found between female breadwinner families and male breadwinner families (the former are only more likely to rely on long-acting reversible methods) might also point to a heterogamy argument. Previous research shows that partner differentials (among other things, in employment status) can impede communication and agreement in decision making, and empirical evidence is found on how asymmetries in partner characteristics are associated with non-use and reliance on less-effective contraceptives (Ford et al., 2001; Kusunoki & Upchurch, 2011; Sprecher, 2013).

Our results further show that another distinction can be made among households in which both partners are employed, based on the woman's share in working hours. Partners who perform an equal share are more likely to rely on barrier methods or long-

acting reversible contraceptives, compared with households in which the woman performs a lower share than her partner. Although the finding concerning barrier methods is in line with Oppenheimer's (1994) argument about partners' accumulation of resources – as dual-earners in which both partners work an equal share are able to achieve a larger pool of resources than households in which the woman works a lower share – the observation that they are also likely to rely on long-acting reversible methods instead points to a time availability argument again: barrier methods can be bought over-the-counter, and IUDs and implants are time-effective because of their long-acting character.

The final results provide evidence for the hypothesis that men's lower share in household labor is associated with more-effective contraceptive use. Specifically, we find that couples in which the woman carries the largest burden of housework are more likely to rely on short-acting female methods instead of using no contraception or barrier methods. This adds to the body of literature showing that partners might use the division of unpaid labor as a predictor of men's involvement in childcare (Mills et al., 2008; Neyer et al., 2013; Olah, 2003), and extends the relationship between men's disinterest in household tasks and the lower intentions and likelihood to have children, to the use of more-effective contraceptives. Nevertheless, we feel that a final note concerning the use of barrier methods is necessary. The combination of the findings that barrier methods are more likely to be used in egalitarian couples – both in terms of an equal distribution of working hours and a more equal division in household labor, or men's higher involvement to women's advantage – can also be linked to men's greater willingness to engage in contraceptive use. Given that more than 90% of the respondents who reported using barrier methods rely on condoms (results not shown), there is something to say about how condoms enable men to participate in a predominantly female domain, thereby for instance relieving their female partner (temporarily) of the burdens related to female contraception (e.g., side effects) (Fennell, 2011; Johnson et al., 2013; Le Guen et al., 2015). Lastly, no significant associations with contraceptive use are found for the interaction between women's employment and the division of housework.

Four important limitations of this study should be taken into account before turning to the conclusion. First, the distinction between contraceptive method types based on their effectiveness can be debated because of the discrepancy between "perfect use" and "typical use" (Mansour, Inki, & Gemzell-Danielsson, 2010; Trussell, 2011). For example, when used perfectly, withdrawal shows similar failure rates (4% of women experience

an unintended pregnancy in the first year of use) to those of condoms (2%) or diaphragms (6%) (Trussell, 2011). However, since contraceptive effectiveness is largely dependent on consistent use and the frequency of the need for contraceptives (Part, Ringmets, Laanpere, Rahu, & Karro, 2016), we categorized the methods questioned in the GGS based on the effectiveness in their "typical use". Second, we are aware that an important part of fertility research goes beyond the division of labor as a prime determinant. Driven by the low fertility rates in many advanced economies, alternative economic theories (e.g., linked to the reduction of uncertainty) have been developed, together with frameworks focusing on shifts in ideology related to, among other things, the second demographic transition or cognitive theory (Balbo et al., 2013; Mills et al., 2008). Our paper does not intend to be an all-embracing test of how and to what extent fertility research can be applied to contraceptive use. Instead, it offers just one example of how fertility frameworks can be relatively readily used to obtain a better view of contraception, in the context of the larger search for currently-lacking comprehensive frameworks. Third, most empirical studies that look at actual fertility – rather than fertility intentions – *either* focus on first births *or* on higher-order births, or make an explicit distinction when studying both (e.g., Iacovou & Tavares, 2011; Kravdal, 1994; Olah, 2003; Schmitt, 2012). The decisions to start or enlarge a family differ substantially, because partners learn from experiences related to the birth of their first child (e.g., how it affects their daily life, how childcare is divided between them, or how pregnancy biologically affects the woman's body) (Bauer & Kneip, 2014). We opted to not make this distinction in our analyses, because despite some mixed evidence, many of the findings discussed in the theoretical framework are found for both the transition to first and to higher-order births. Methodologically, distinguishing between the nulliparous and those with one or more children was hindered because the first group was too small in some countries to perform meaningful analyses. We did, however, control for the respondents' number of children in all the models. Fourth, the question may be raised as to whether people adjust their childbearing behavior to their working conditions – which is the starting point of this paper – or whether they adjust their working conditions to suit their childbearing behavior (e.g., opting to work part-time only after the birth of a child) (Balbo et al., 2013; Mishra & Smyth, 2010). Over time, highly-effective contraceptives have enabled women to organize their family lives according to their educational and employment career paths, and – particularly in Northern and Western Europe – subsequently facilitated and increased their labor force participation greatly (Bailey, 2006; IPPF European Network, 2015). Our focus on the first wave of the GGS

hampers causal interpretations, but this selection effect seems unlikely in the context of the current paper, given that effective contraceptives are nowadays the default option in developed countries (Balbo et al., 2013) and abortion is generally accepted in case of contraceptive failure (Frejka, 2008a), which makes effective contraception no longer a driving determinant in women's ability to go out to work.

In conclusion, we should foremost remember that contraceptive use is not guided by rational choices and fertility intentions alone. Considering contraception merely on a rational basis disguises the many observations of what others call "irrational" behavior, such as the high prevalence of natural family planning in Central and Eastern European countries or the persistent levels of unmet need for contraceptives in advanced economies characterized by a wide availability of effective contraception (Gribaldo et al., 2009; United Nations, 2016). However, our results do indicate that the examination of contraceptive use through a rational fertility lens yields some interesting conclusions that might help us to contextualize our understanding of less-effective versus more-effective contraceptive behavior. We are looking forward to other extensions of the fertility framework to contraception. In addition, it might be worthwhile to explore cross-country differences in the revealed associations, given that it is plausible that the applicability of fertility research to contraception is also contingent on the extent to which couples are wary of contraceptive failure and the option of having an abortion.

11. POWER AND THE GENDERED DIVISION OF CONTRACEPTIVE USE IN WESTERN EUROPEAN COUPLES[29]

Recent research has approached contraceptive use, or "fertility work", as another household task that is primarily managed by women. Building on the theoretical frameworks of relative resource theory and gender perspectives, this study investigates the association between partners' power (measured as their relative education, division of housework and decision making) and the choice of male versus female, or no contraception. Data from the Generations and Gender Survey (GGS) for four Western European (WE) countries (Austria, Belgium, France and Germany; 2005-2010) is used to examine the hypotheses with multinomial logistic diagonal reference models. The results show that man's and woman's educational level are equally important predictors for a couple's contraceptive method choice. Furthermore, the findings suggest that households in which the man performs more housework or the woman has more say in decisions are more likely to rely on male methods or female sterilization, rather than on the more commonly used female reversible methods.

11.1 Introduction

Recently, some scholars have extended the established observation that women still perform the majority of housework toward the domain of contraception (Bertotti, 2013; Fennell, 2011). Couples' "fertility work", or the division of contraceptive responsibility between partners, also seems to fall primarily on women's shoulders. On the one hand, as most effective contraceptives are reversible and female, it follows logically that their use exceeds that of permanent and/or male methods. In WE, 58.9 percent of couples in which the woman is aged 15-49 use the pill, contraceptive injections, implants or intra-uterine devices (IUDs), compared with 2.9 percent relying on vasectomy, 6.3 percent on tubal ligation and 7.6 percent on condom use (United Nations, 2013). However, on the other hand, the observation that also the uptake of female sterilization exceeds that of male sterilization – although both are similarly effective and the latter implies lower physical and financial costs (Shih et al., 2011) – indicates that contraceptive choice is not purely a product of availability constraints (Fennell, 2011). It has been suggested that

contraception shifts from being an individual's own responsibility and a means to protect him/herself against unintended pregnancy in the beginning of a relationship, toward a shared responsibility that is influenced by broader relationship dynamics in long-term relationships.

Despite the growing attention for the importance of incorporating the relationship context when examining contraceptive behaviour (e.g., Grady et al., 2010; Kusunoki & Upchurch, 2011; Manning et al., 2009; Stolley, 1996), research on the social determinants of contraceptive use has mainly studied the female population, because reproduction and contraception are often framed as a female sphere of influence (Edwards, 1994; Fennell, 2011). Moreover, the majority of studies, also those that have taken men's as well as women's preferences and childbearing desires into account, have limited their attention to individual demographic characteristics, such as the influence of educational attainment or income level on the adoption of certain contraceptive methods (Anderson et al., 2012; Martinez et al., 2006; Moreau et al., 2006; Mosher & Jones, 2010; Oddens, Visser, Vemer, & Everaerd, 1994; Oddens, Visser, Vemer, Everaerd, et al., 1994; Spinelli et al., 2000).

Our paper aims to examine the association between couples' characteristics and their division of contraceptive responsibility. Because partners can have different needs and desires concerning contraception, they may not assess contraceptive methods in the same way (Grady et al., 1999). This implies that they will have to find a way to resolve differentials in priorities and perceptions. Elaborating on Bertotti's (2013) and Fennell's (2011) studies, two alternative power perspectives – relative resource theory and the gender perspectives – are applied. As studies consistently find that higher marital power, or a partner's ability to impose his/her will on the other (Blood & Wolfe, 1960), increases one's say in couples' decisions-making (Lachance-Grzela & Bouchard, 2010; Mannino & Deutsch, 2007), there is also a growing awareness that power within sexual relationships may affect individuals' ability to meet their reproductive goals (Grady et al., 2010).

The main contributions of this research are threefold. First, to the best of our knowledge, it is the first to investigate whether and how power dynamics – measured as partners' relative education, the division of housework and decision-making power – are related to couples' male versus female contraceptive method choice. Previous studies' unilateral focus on how one's higher socioeconomic status is associated with more effective contraceptive use (Anderson et al., 2012; Martinez et al., 2006; Moreau et al.,

2006; Mosher & Jones, 2010; Oddens, Visser, Vemer, & Everaerd, 1994; Oddens, Visser, Vemer, Everaerd, et al., 1994; Spinelli et al., 2000) implicitly linked contraception to (particularly women's) empowerment and the ability to take control. By incorporating a couple perspective, the question can be raised whether this control over the couple's contraceptive domain leads men or women to either retain contraceptive responsibility or to transfer it to their partner. Until now, it remains unclear whether contraceptive responsibility can be linked to partners' higher or lower power. Second, by taking both reversible and permanent methods into account, we go beyond previous research that primarily looks at using any contraceptive, or on practicing either reversible or permanent contraception. Third, we focus on the context of WE. As compared to the United States, research to contraceptive use has been rather limited in this region, although important differences have been identified (Mosher & Jones, 2010; United Nations, 2013). Whereas the first is characterized by notably higher rates of unintended pregnancy and sterilization, the latter shows higher prevalence of hormonal pill use and intra-uterine devices (IUDs). As this variance stems from many factors – cultural, legal, economic as well as health care related (Mosher & Jones, 2010) – caution is needed when expanding conclusions drawn from research in the U.S. to WE. A subsample of the first wave of the GGS (Austria, Belgium, France and Germany; 2005-2010) is analysed by using diagonal reference models, as this survey provides some of the most recent, nationally representative data available on contraceptive use patterns.

11.2 Previous research on the link between power and couples' contraceptive use

The lion's share of sociological research that has focused on the exercise of marital power in partners' joint decision making, has investigated how power processes shape the division of household chores, childcare and paid labour (Coltrane, 2000; Lachance-Grzela & Bouchard, 2010). Only limited attention has been paid to reproductive choices, and more specifically contraceptive use, as a possible outcome of couples' power balance (Grady et al., 2010) but a number of scholars does focus on the influence of partner differentials on couples' contraceptive use. Two types of studies can be identified. The first type focuses on asymmetries in partners' resources. Studies carried out in the United States have pointed toward the importance of taking couple heterogamy – in terms of age, education or race – into account when examining methods of contraception. Generally, it has been shown that the fewer similarities partners have, the less likely it is

that they will use contraception (Ford et al., 2001; Kusunoki & Upchurch, 2011). A common explanation for these findings is that because of diverse sexual experience and knowledge, partners with differing characteristics have more difficulty in communicating effectively with each other about which contraceptive method to use.

The second type of study examines partners' beliefs and commitment to the relationship. Having more traditional gender role attitudes has been linked to a higher likelihood of opting for tubal ligation whereas couples' in which the wife holds more modern values seem to be more likely to choose for vasectomy (Stolley, 1996). Furthermore, research has demonstrated that having more relationship alternatives or lower commitment increases a person's say in contraceptive choice (Grady et al., 2010). At the same time, less committed relationships (e.g., occasional versus cohabiting partners) and lower relationship intimacy have been found to be related to less contraceptive use and more inconsistent use (Kusunoki & Upchurch, 2011; Manlove et al., 2007; Moreau et al., 2006). Finally, Manning and colleagues (2009) found a negative relationship between a partner's perceived controlling behaviour and partner inferiority, and consistent condom use.

Of particular relevance is the study of Grady and colleagues (2010) that combines both types of research and identifies power as a multi-layered construct, thereby paying attention to the influence of partners' structural characteristics (e.g., education and income) as well as the attitudes and beliefs with regard to their relationship (e.g., relationship commitment, relationship alternatives and sex role egalitarianism). The results indicate that both power dimensions are associated to contraceptive method preference and choice. Their conceptualization of power – as a construct that can be identified on different levels – echoes Wrong's (1988, p. X (Roman numeral 10)) established definition of power as both a capacity, referring to resources, and a social relation manifested through interaction.

Turning to the empirical observation of power, it is important to recognize that power is "dispositional" as it is attributed to, rather than inherently present in, individuals or groups (Wrong, 1988). We follow Grady et al.'s (2010) and Wrong's (1988) approach by looking at someone's control over resources as well as at his/her actual performance of power in a social relation. So, first, we focus on partners' differential educational attainment as a main resource of structural power. It is argued that education is a form of human capital as it develops habits, skills, resources and abilities that enable individuals to achieve a better life and enhance their sense of personal control (Mirowsky

& Ross, 2003). Whereas most research focuses on the indirect value of education, such as higher incomes or better and safer jobs (Cutler & Lleras-Muney, 2006), the human capital perspective pays attention to the direct value of education (Sen, 1997). Higher educational level can be interpreted as "learned effectiveness" by which different health-producing behaviours are united into a coherent healthy lifestyle (Mirowsky & Ross, 2003). In other words, education as such reflects a range of noneconomic social competences such as health-related knowledge, better use of information or prestige (Braveman et al., 2005). Furthermore, in comparison with for instance current wage or occupational status, level of education usually precedes labour market entry and is less likely to be influenced by joint couple decisions concerning paid work (Eeckhaut, Stanfors, et al., 2014). Education also has the advantage that the unemployed and non-employed are not excluded (Monden & de Graaf, 2013).

Second, the power resulting from interactions between partners, or interactional power, is approached as the division of housework and decision making. Part of this household organization may be explained by partners' (differentials in) resources, such as education, but the linearity of this association has been repeatedly debated, indicating that negotiations concerning this household distribution entail a more complex process with multiple forces at play (Lachance-Grzela & Bouchard, 2010). Extensive literature showed the importance of indicators such as partners' time spent in the workforce or gender attitudes. Therefore, it can be stated that the measurement of the division of (especially routinely) household tasks and having the final say in decisions capture another, additional kind of power imbalance.

11.3 Theoretical framework and hypotheses

The introduction of the birth control pill in WE during the 1960s shifted contraceptive responsibility from men to women, and gave women greater power to control reproductive decisions (Skouby, 2004). Nowadays, however, many women report that they bear too much of the responsibility for contraception (Glasier et al., 2000). The question can be raised whether contraceptive responsibility should be perceived as a burden or an indication of lower power, versus as a way of holding control or an indication of higher power. Following Fennell (2011) and Bertotti (2013), we apply the theoretical lens of the gendered division of labour to partners' roles in contraceptive decision making in order to formulate two contrasting hypotheses.

One theoretical basis for understanding *contraception as the outcome of one's lower power* is the relative resource theory. This perspective states that partners engage in a relationship or marriage with differing levels of resources (Blood & Wolfe, 1960). The greater a partner's resources – such as level of education, income and occupational status – the higher his/her power (Lachance-Grzela & Bouchard, 2010; Mannino & Deutsch, 2007). This marital power can be employed to control decision making in diverse areas (Mannino & Deutsch, 2007; Stolley, 1996). The underlying assumption of the relative resource perspective is that domestic responsibilities are considered a burden and that both partners try to avoid them through bargaining (Lachance-Grzela & Bouchard, 2010). Similarly, multiple scholars refer to contraceptive choice as a negative choice, where the "least worst option" is preferred (Darroch, 2008; Walsch, 1997). The choice of a specific method seems often to result from dissatisfaction or frustration with another method (Guttmacher Institute, 2008; Moreau, Cleland, & Trussell, 2007).

With regard to reversible contraceptives, this is reflected in the high levels of contraceptive discontinuation due to method-related reasons, and the high prevalence of method switching (Grady et al., 2002; Lessard et al., 2012; Vaughan et al., 2008). For instance, high movement between the pill and condom use has been identified (Grady et al., 2002; Huber et al., 2006; Oddens, Visser, Vemer, Everaerd, et al., 1994; Vaughan et al., 2008). As concerns the first, despite the high prevalence of the use of oral contraceptives, many women report side effects, such as mood swings and weight gain (Huber et al., 2006; Moreau et al., 2007; Mosher & Jones, 2010). With regard to condom use, decreased sexual pleasure and an unsatisfied male partner are the most frequently reported reasons for dissatisfaction and stopping use (Moreau et al., 2007; Mosher & Jones, 2010). Empirical evidence of bargaining processes between partners as concerns reversible contraceptive use is lacking, but the results of Grady and colleagues (2002) point to an association between educational attainment and method switching. Whereas higher-educated married women are generally less likely to switch from the pill to less-effective methods than lower-educated, they show higher rates of switching from the pill to the condom. For condom use, more years of education are related to reduced rates of switching to female reversible methods. This suggests that, as some studies concluded for the division of housework (Lachance-Grzela & Bouchard, 2010), higher levels of women's education are related to higher male engagement in "fertility work".

With regard to permanent methods, both male and female sterilization entail some similar costs that may be perceived as a burden: the decision is meant to be non-

reversible and slight pain might be experienced after the procedure (Shih, Zhang, Bukowski, & Chen, 2014). However, vasectomy is considered a "better" method as it implies lower costs, both financially and physically (in terms of surgical risk, invasiveness and the possibility of complications) (Shih et al., 2011). Moreover, women report more favourable opinions about vasectomy than tubal ligation (Forrest & Fordyce, 1993). Following the resource perspective, these findings suggest that higher levels of female power can enable women to convince their partner to undergo a surgical sterilization procedure. In sum, we hypothesize that *couples in which the woman has greater relative power (i.e., higher relative education, performing less housework than on average and/or making more decisions than on average) will be more inclined to opt for reversible or permanent male contraceptives than for female methods* (Hypothesis 1).

Alternatively, one might also suggest that greater resources or higher power are closely related to higher opportunity costs of having (additional) children, for women in particular (Balbo et al., 2013). These costs refer to both economic and noneconomic losses due to (temporary) withdrawal from the labour market (Kravdal, 1992, 1994). The higher women's accumulation of resources, the more costly contraceptive failure will be perceived, and the more postponement of childbearing will be valued in order to be able to pursue a career or increase earning power (Gustafsson, 2005; Van Bavel, 2010). It can be expected that higher power enables women who face high opportunity costs to opt for the most effective contraceptive method available (i.e., female hormonal methods or permanent methods) in order to reduce the risk of pregnancy, which supports the approach of *contraception as the outcome of one's higher power*. However, this argument reduces contraceptive decision making to a rational cost-benefit calculation (Balbo et al., 2013; Coltrane, 2000; Ferree, 1991) and cannot explain why women are more likely to get sterilized as compared to men, although both procedures are similarly effective (Shih et al., 2014). More in general, the relative resource perspective has been subject to criticism because of its assumption that household decisions are governed by gender-neutral exchange relations (Coltrane, 2000; Ferree, 1991). It ignores that individuals behave according to social and cultural meanings (Coltrane, 2000), and that power bargaining within couples might be based on the need or desire to maintain relationships rather than merely on the possession of external status or resources (Sprecher et al., 2006).

Gender perspectives, on the other hand, posit that men and women "do" gender in everyday activities by reinforcing and reproducing their identity as a man or a woman through interaction (West & Zimmerman, 1987), according to socially-constructed

gender roles that assign how men and women are expected to behave (Lachance-Grzela & Bouchard, 2010). For instance, avoiding or performing housework helps men and women respectively to define and express their gender identity within and outside the home (Coltrane, 2000; Lachance-Grzela & Bouchard, 2010). It is suggested that both men and women will particularly try to neutralize their deviant gender roles (Greenstein, 2000). Dependent men and breadwinner women tend to exaggerate their male and female identities by respectively engaging less or more in the domestic sphere than could be expected based on their status. Like housework, contraception is generally considered as a female sphere of influence in advanced economies, mainly because women bear the physical costs of pregnancy and birth, and they are traditionally responsible for childcare (Fennell, 2011; Grady et al., 2010; Thomson, 1997).

It remains unclear, however, whether women take contraceptive responsibility as a part of their female role or whether they bear contraceptive responsibility because their partner does not. Multiple studies that examine the use of reversible methods suggested that women engage in "contraceptive gatekeeping" as many report a clear preference for being primarily in charge of contraception in their relationship (Fennell, 2011; Lessard et al., 2012). In addition, men can perceive some kind of block to engaging in contraceptive decisions, even if they had wanted to participate more (Fennell, 2011). At the same time, studies have shown that the exclusion of men from the reproductive domain enforces them not to take responsibility in a female domain (Edwards, 1994).

Either way, research supporting the gendered approach on reversible contraceptives remains scant, but a few studies point in the suggested direction. Martinez and colleagues (2006), for example, conclude that men's education is positively related to the likelihood of using a condom which indicates that men's higher social status associates with condom use, whereas Fennell (2011) finds that women's better sexual education encourages them to hold contraceptive control instead of letting their less-informed partner contribute.

As concerns permanent methods, studies have shown that men's higher education relative to that of their partner is associated with a higher likelihood of choosing vasectomy (Bumpass et al., 2000). In turn, disadvantaged men are more likely to avoid vasectomy (Bertotti, 2013; Shih et al., 2014). One explanation that has been raised is that this is to compensate for their subordinate social status, as engagement in a female domain may be perceived as a threat to their masculinity. Similarly, if a woman is higher educated than her partner, she is more likely to opt for sterilization herself (Bertotti,

2013; Bumpass et al., 2000; Forste et al., 1995), although women's educational level an sich is negatively related to female sterilization (Anderson et al., 2012; Mosher & Jones, 2010; Oddens, Visser, Vemer, & Everaerd, 1994; Oddens, Visser, Vemer, Everaerd, et al., 1994). Following the gender perspectives, we expect that *couples in which the woman has greater relative power (i.e., higher relative education, performing less housework than on average and/or making more decisions than on average) will be less inclined to opt for reversible or permanent male contraceptives than for female methods* (Hypothesis 2).

One might also argue that contraception can be perceived as a task for a male breadwinner, given their dominant and decision-making role. Fennell (2011) for instance suggests that some men perceive contraceptive responsibility as a part of their role as a responsible partner. Also studies in several Central and Eastern European countries find that male contraceptive responsibility (withdrawal in particular) is associated with pride and masculinity, and is perceived as a skill in discipline and an ability to take care of their partner (IPPF European Network & UNFPA, 2012). However, it is important to bear in mind that these countries are characterized by significantly higher rates of male contraceptive use as compared to WE countries (United Nations, 2013), higher levels of gender inequality (UNDP, 2015), and that – to the best of our knowledge – no evidence pointing in a similar direction for a WE context has been found.

11.4 Method

Data

The GGS is a European longitudinal panel survey collecting representative data in 17 countries (plus Australia and Japan), initiated by the United Nations Economic Commission for Europe (UNECE, 2005). The aim is to gather detailed information concerning different sociodemographic themes, such as partnership and fertility, during at least three waves in each country. Cross-country comparability is ensured by providing the survey design, common definitions, a standard questionnaire, and common instructions that each participating country should follow (Vikat et al., 2007). Our paper focuses on data from the first wave, gathered in four WE countries: Austria, Belgium, France and Germany (2005-2010). Face-to-face interviews were conducted, and the overall response rate ranges from a relatively low 42% in Belgium to 67% in France, which is comparable with other large-scale European surveys.

The original dataset contains 32,259 respondents aged between 18 and 79. Our analysis focuses on a subset of co-residential heterosexual couples aged 25 and above (so education has been mostly completed), in which the woman is younger than 50. Only couples with no desire for (additional) children are included in the sample (N = 7287). As our study examines the option for reversible as well as permanent methods, this limitation enhances comparability. We use the respondents' reports of partner characteristics and preferences as a proxy. Couples in which one of the partners was physically unable to have children (apart from being sterilized) (N = 465) are removed from the sample. Couples in which both partners were sterilized (N = 37) or one was sterilized before cohabitation with his/her current partner (N = 77) are also excluded. In addition, couples relying jointly on the pill and condoms (N = 173), or on withdrawal or safe period method (N = 146) are omitted because of their small number. Also those practicing "other contraceptives or methods" (N = 99) are excluded. Lastly, cases with missing information are deleted (N = 292; 4.6%). The final analytic sample contains 5998 couples.

Measurements

Dependent variable. *Contraceptive use* is classified according to two parameters. We differentiate between male and female, and reversible and permanent methods. Four categories are distinguished: (1) male reversible (condoms), (2) female reversible (the pill, IUD, diaphragm/cervical cap, foam/cream/jelly/suppository, contraceptive injections, implants, Persona or the morning-after pill), (3) male permanent (male sterilization), and (4) female permanent (female sterilization). A fifth category containing couples that are not relying on contraception is added to avoid selection on the dependent variable. Using female reversible contraception is taken as the reference category, as these methods are generally the most widely practiced.

Independent variables. Structural power is measured by educational level. *Man's education* and *woman's education* are coded according to the highest level of education successfully attained, based on the ISCED97 classification. We distinguish between three educational categories: (1) low (up to lower secondary level), (2) middle (upper secondary level or non-tertiary post-secondary level), and (3) high (tertiary education; reference category). *Relative education* is measured as the difference between the woman's and man's education (education woman minus education man).

Interactional power is measured by the division of housework and decision making. Both indicators were only questioned in a relative way rather than as an absolute measure. As previous research has repeatedly shown that particularly *routinely housework* is related to power in the household (Lachance-Grzela & Bouchard, 2010), we focus on the following four tasks: preparing daily meals, doing the dishes, shopping for food, and vacuum cleaning the house. Which partner carried out these household tasks was determined by means of seven categories: "always respondent", "usually respondent", "respondent and partner about equally", "usually partner", "always partner", "always or usually other persons in the household" and "always or usually someone not living in the household". Tasks shared equally, as well as tasks done by a third person (in or outside the household), are coded 0 (Geist & Cohen, 2011). If a task was always performed by the woman, a score of -2 is assigned and if a task was usually performed by the woman, a value of -1. Similarly, if the man always or usually did the routinely household chores, a value of 2 and 1 is assigned respectively. The mean score of the division of routinely housework is calculated if at least two valid answers were given.

To measure *decision making*, a similar index is constructed. Respondents were asked to indicate "who makes decisions about the following issues" in their household: routine purchases for the household, occasional more expensive purchases for the household, the time you spend in paid work, the time your partner spends in paid work, the way children are raised, and social life and leisure activities. The possible answer categories are similar to those with regard to housework. To enhance the clarity in reporting our results, this index is reversed compared with the index measuring the division of housework. Scores range from -2 (the man decides everything) to 2 (the woman decides everything).

Finally, for the bivariate and multivariate analyses, all power measures are grand-mean-centred (mean score respondent minus mean score of all respondents). In this way, a negative score indicates lower female and higher male power than averagely while a positive score indicates lower male and higher female power than averagely.

Control variables. We control for *man's age* (grand-mean-centered)*, woman's age* (grand-mean-centered) and *marital status* (0 = married, 1 = cohabiting). *Parity* is coded as (1) no children (reference category), (2) one child, (3) two children, or (4) three or more children.

Analytical strategy

Two types of measures have generally been used to study the effects of couples' educational differences (Eeckhaut et al., 2013). The first, difference measures, focuses on the difference in education between partners by, for instance, calculating the absolute numeric difference (e.g., years education man minus years education woman) or computing a categorical difference variable (e.g., three categories: (1) homogamy, (2) education man > education woman, and (3) education man < education woman). The second, compound measures, constructs a categorical variable with all possible combinations of man's and woman's education. Both types of measures have been subject to abundant criticism. Among others, difference measures struggle with multicollinearity problems when including the variables for absolute education and educational partner differences simultaneously in the model, whereas compound measures cannot disentangle the effects of partners' absolute and relative education.

Diagonal reference models (DRMs) provide an answer to both critics. This statistical procedure, suggested by Sobel (1981, 1985), was initially developed to examine the effects of social mobility, but has also proved successful in studying status inconsistency and heterogamy effects (Eeckhaut, Stanfors, et al., 2014; Eeckhaut et al., 2013; Hendrickx et al., 1993). The main advantage of DRMs is that we can simultaneously model the impact of (1) man's absolute education, (2) woman's absolute education, and (3) the couple's relative education on contraceptive use. At the same time, we can determine the relative impact of man's and woman's absolute education on contraceptive method choice. Furthermore, other covariates such as our interactional power measures can be taken into account (for a detailed comparison between differences measures, compound measures and DRMs, see Eeckhaut et al., 2013).

DRMs start from the theoretical idea that homogamous couples represent the "core" of their group (Sobel, 1981). It is assumed that because these couples are not influenced by other (here: educational) groups, their values can be considered as the referents for heterogamous couples. When cross-tabulating man's and woman's education, the homogamous couples can be interpreted as the diagonal referents for heterogamous, off-diagonal couples (Eeckhaut, Stanfors, et al., 2014). In other words, the values of heterogamous couples lie in-between those of the corresponding homogamous couples (Eeckhaut et al., 2013).

As our dependent variable is measured by means of five categories, we use multinomial logistic DRMs. The baseline model, without power effect and other covariates, can be represented as

$$B_{ijmk} = \frac{\exp(\theta_{ijm})}{\sum \exp(\theta_{ijm})}$$

$$\theta_{ijm} = p * \mu_{iim} + (1-p) * \mu_{jjm}$$

where B_{ijmk} refers to the probability that respondent k uses contraceptive method m, given man's educational level i and woman's education j (Eeckhaut, Stanfors, et al., 2014; Nieuwbeerta & Wittebrood, 1995). θ_{ijm} is the log odds that the same respondent k uses contraceptive method m. Parameters μ_{iim} and μ_{jjm} stand for the log odds that respondent k, with various types of educational homogamous couples, choses contraceptive method m over other methods (Nieuwbeerta & Wittebrood, 1995). The terms p and (1-p) indicate the relative weight of the man's and woman's absolute education respectively (Sobel, 1981). Since p theoretically ranges from 0 to 1, a score below 0.5 indicates that the relative impact of woman's education is more important, whereas a score above 0.5 refers to a greater weight of man's education.

When we include the covariates (control variables, relative education, the division of housework and decision-making power) in the model, θ_{ijm} equals

$$\theta_{ijm} = p * \mu_{iim} + (1-p) * \mu_{jjm} + \sum \beta_{dm} * h_{ijd} + \sum \beta_{em} * x_{ije}$$

The expected effect of relative education, over and above the effect of man's and woman's absolute education, is expressed by d different h variables (Eeckhaut, Stanfors, et al., 2014). For the other covariates, we add e different x variables (Tolsma, de Graaf, & Quillian, 2009).

Finally, it is important to note that the couples (level 1) are hierarchically nested in countries (level 2), which implies that couples living in the same country tend to be more similar than those living in different countries (Hox, 2010). This clustered data structure is taken into account by incorporating N-1 country dummies in the DRMs. As such, θ_{ijm} in the final model equals

$$\theta_{ijm} = p * \mu_{iim} + (1 - p) * \mu_{jjm} + \sum \beta_{dm} * h_{ijd} + \sum \beta_{em} * x_{ije}$$
$$+ \sum \beta_{fm} * c_{ijf}$$

where we additionally include f different c variables to account for the country-level variance. The Jackknife procedure is used as a sensitivity test to check for influential countries by running the DRM four times, each time excluding one country (Rodgers, 1999). Overall, the estimates remain largely stable over the models (tables not shown). All parameters can be interpreted similarly to multinomial logistic regression analyses.

11.5 Results

Descriptive results

The descriptive results are presented in Table 11.1 (Appendix 11.A displays the descriptives per country). With regard to the distribution of the dependent variable, no unexpected patterns appear. For both reversible and permanent contraceptives, the use of female methods exceeds that of male methods with 9.2% of the couples relying on male reversible contraception, 57.8% on female reversible contraception, 6.8% on male permanent contraception, and 11.1% on female permanent contraception. 15.1% of the couples do not use any method. Considering the power indicators, it is worth noting that relative education suggests that the couples in our sample are relatively homogamous ($\bar{x}$ = -0.05); most couples are equally educated (62.7%; not shown in table). With respect to decision making ($\bar{x}$ = 0.20), women hold relatively higher marital power, although the majority of couples make at least some decisions together (98.2% of all couples' scores range between -1 and 1; not shown in table). Not surprisingly, a different pattern is found for the division of housework ($\bar{x}$ = -0.75). Some 83% of the couples reported that the woman carried out more housework than her partner (not shown in table).

Table 11.2 summarizes the bivariate statistics for the main independent variables. First, the well-known association between men's and women's education, and contraceptive use is confirmed ($p < 0.001$). Largely similar contraceptive patterns can be observed according to men's and women's education. Female reversible contraceptives represent the most frequently-used method in all educational groups, but low-educated men and women rely least heavily on these methods. Focusing on the three less-represented

methods, low- and middle-educated men and women are mostly situated in the categories of tubal ligation. Furthermore, higher-educated men and women more often rely on male contraceptives as compared to lower-educated. A linear pattern is found for using no method, with the lower-educated being most likely.

Table 11.1 Descriptive statistics (N = 5998)[a]

	Mean (SD) / Percentage
Contraceptive method	
Male reversible	9.2
Female reversible	57.8
Male permanent	6.8
Female permanent	11.1
No method	15.1
Man's education	
Low	14.6
Middle	55.9
High	29.6
Woman's education	
Low	17.4
Middle	55.7
High	26.9
Relative education	-0.05 (0.67)
Division of housework	-0.75 (0.67)
Decision-making	0.20 (0.34)
Man's age	42.98 (6.65)
Woman's age	40.09 (5.48)
Marital status	
Married	84.7
Cohabiting	15.3
Number of children	
0	6.3
1	18.6
2	49.3
≥ 3	25.8

Notes. [a] For relative education, division of housework and decision-making, a negative score indicates higher male power whereas a positive score indicates higher female power.

Table 11.2 Bivariate statistics: Contraceptive method by man's and woman's education, and by the couple's relative education, division of housework and decision-making power (N = 5998)[a]

	Male reversible	Female reversible	Male permanent	Female permanent	No method	χ^2
Man's education						67.47***
Low	6.0	54.8	4.9	16.4	18.0	
Middle	8.6	59.0	6.9	10.6	15.0	
High	12.0	57.2	7.5	9.5	13.8	
Woman's education						114.72***
Low	6.6	51.0	4.4	16.8	21.2	
Middle	8.9	58.9	7.2	10.8	14.2	
High	11.5	60.1	7.4	8.1	12.9	

	Male reversible	Female reversible	Male permanent	Female permanent	No method	F
Relative education	-0.02	0.03	0.02	-0.05	-0.06	4.14**
Division of housework	0.07	-0.03	0.06	0.01	0.03	4.59**
Decision-making	-0.05	0.01	0.01	0.03	-0.04	8.59***

Notes. [a] For relative education, division of housework and decision-making, a negative score indicates higher male power than averagely whereas a positive score indicates higher female power than averagely. ***p<.001; **p<.01

Second, the associations between all three power measures and contraceptive use are significant. Different processes are at play for male versus female, and reversible versus permanent methods. For couples relying on male contraceptives, we find that men perform more household tasks and, only for those using male reversible methods, take slightly more decisions than on average. In couples relying on female reversible methods, women are relatively higher educated and do a larger share in housework, whereas in couples relying on female sterilization, women are relatively lower educated and have most decision-making power compared with couples preferring alternative methods.

Diagonal reference models

The estimates for the control variables do not substantially change when adding the three power measures. Also the inclusion of the three power variables separately or together in the model yields similar results. Therefore, only the full model is shown (Table 11.3). We rely on odds ratios for the interpretation of our results. The DRM largely confirms the patterns found in the bivariate analysis, but the educational differences for using male reversible, female reversible, or male permanent methods are not significant. The probabilities for homogamous couples (μ_{11}-μ_{33}) show a negative association between education and relying on female sterilization or using no method. Specifically, high and middle-educated couples are significantly less likely to rely on tubal ligation or to not use contraception compared with low-educated couples (tubal ligation: $\mu_{11} = 16.6\%$, $\mu_{22} = 10.5\%$, $\mu_{33} = 6.3\%$; no method: $\mu_{11} = 40.5\%$, $\mu_{22} = 24.8\%$, $\mu_{33} = 22.6\%$).

The relative influence of men's and women's education can be inferred based on the value of the salience parameter p (p = 0.351). A value below 0.5 indicates that the woman's education primarily determines the contraceptive method. However, based on the 95% confidence interval (0.031, 0.672; not shown in table), we can conclude that this weighting parameter does not significantly differ from 0.5. In other words, men's and women's educational level are approximately equally important in contraceptive use.

As concerns the power measures, only the interactional power dimension remains significantly related to contraceptive use. In couples in which the woman has greater relative power than averagely, men are generally more likely to take responsibility instead of relying on their partners' responsibility and – at the same time – women are more likely to practice tubal ligation than female reversible methods. Specifically, couples in

Table 11.3 Parameter estimates for the multinomial logistic diagonal reference model with control variables, relative education, division of housework and decision-making power (N = 5998) [a]

	Male reversible	Female reversible (ref.)	Male permanent	Female permanent	No method
Salience parameter			0.351		
Odds ratios for the homogamous couples with educational level i (probability between brackets)					
μ_{11} (ref.)	0.345 (9.9%)	1 (28.6%)	0.157 (4.5%)	0.580 (16.6%)	1.415 (40.5%)
μ_{22}	0.293 (12.2%)	1 (41.8%)	0.255 (10.7%)	0.251 (10.5%)***	0.593 (24.8%)***
μ_{33}	0.538 (23.4%)	1 (40.1%)	0.191 (7.7%)	0.156 (6.3%)***	0.564 (22.6%)***
Odds ratios for the control variables					
Age man	0.993		1.019	0.996	1.037***
Age woman	1.032*		1.074***	1.136***	1.057***
Married (ref.)					
Cohabiting	0.807		0.605**	0.543***	0.827
0 children (ref.)					
1 child	1.163		0.418**	0.724	0.567***
2 children	1.090		1.110	0.906	0.513***
≥3 children	1.039		1.496	1.661*	0.672*
Odds ratios for the power measures					
Relative education	0.949		0.956	1.015	1.008
Division of housework	1.218*		1.492***	1.322***	1.107
Decision-making	0.732		1.840***	1.456**	0.760*

Notes. [a] μ_{11} = both partners are low educated (ref.), μ_{22} = both partners are middle educated, μ_{33} = both partners are high educated. For age, these specifications resulted in the best model fit. For relative education, division of housework and decision-making, a score below 1 indicates higher male power than averagely whereas a score above 1 indicates higher female power than averagely. Models controlled for country dummies. For low educated couples (μ_{11}), the probability of being in the category of male reversible contraception is calculated as $[0.345/(0.345+1+0.157+0.580+1.415)] \times 100$. ***p<.001; **p<.01; *p<.05

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which the man averagely performs more housework are more likely to use condoms than female reversible methods (OR =1.218, p < 0.05). These couples are also more likely to rely on male sterilization (OR = 1.492, p < 0.001) or female sterilization (OR = 1.322, p < 0.001) instead of female reversible methods. With regard to decision making, couples in which the woman has more decision-making power than on average are more likely to rely on male sterilization (OR = 1.840, p < 0.001) or female sterilization (OR = 1.456, p < 0.01) than female reversible methods. At the same time, these couples are less likely to not use contraception (OR = 0.760, p < 0.05).

11.6 Discussion and conclusion

Based on the recent literature on "fertility work" (Bertotti, 2013; Fennell, 2011), this paper adopts a power perspective to obtain greater insight in couples' choice of contraceptive method. Several important findings are worth noting. First, men's and women's education seem equally important in the method used. This confirms Bauer and Kneip's (2013) conclusion that neither women nor men dominate proceptive behaviour and is an important addition to studies that have highlighted the relevance of taking men's characteristics into account when studying fertility (Fennell, 2011; Grady et al., 2010; Thomson, 1997).

Second, we find some interesting differentials in contraceptive use according to educational level. A strong negative association is established between education and tubal ligation, which confirms earlier research (Anderson et al., 2012; Mosher & Jones, 2010; Oddens, Visser, Vemer, & Everaerd, 1994; Oddens, Visser, Vemer, Everaerd, et al., 1994). These results are in line with housework studies that emphasized the importance of women's absolute, rather than their relative, status in determining their share in housework (P.Gupta, 2007). Accordingly, sterilization research indicated that high-educated women can use their status (and the health-related knowledge that is associated with higher educational attainment), irrespective of that of their partner, to shift responsibility for contraception to the man (Bertotti, 2013). A similar negative linear pattern is found for using no contraception, with the middle and high educated being less likely to not use any method than the low educated, which also reaffirms previous studies (Moreau et al., 2006; Oddens, Visser, Vemer, & Everaerd, 1994; Oddens, Visser, Vemer, Everaerd, et al., 1994; Spinelli et al., 2000).

Third, our analyses reveal that couples in which the man averagely performs a larger share of household tasks and in which the woman has greater decision-making power

are more likely to rely on vasectomy than on female reversible contraceptives – irrespective of education. This confirms results presented in previous research (Stolley, 1996). Similarly, couples in which the man does more housework than averagely seem to be also more likely to opt for condom use instead of female reversible contraceptives. Thus, in line with our resource hypothesis (Hypothesis 1), the results indicate that households in which the woman averagely holds higher power are characterized by greater male responsibility for both reversible and permanent contraception, instead of female responsibility for reversible methods. It is interesting to interpret this conclusion in the light of Grady and colleagues' (2002) study. They found that married couples who rely on male condom use show significantly higher prevalence of switching to male sterilization than couples who use other (mostly female) contraceptive methods. Moreover, they show that only those who use condoms, as compared to couples relying on other reversible methods, are significantly more likely to adopt male instead of female sterilization. This suggests that, in addition to our separate findings for male reversible and male permanent methods, men who take contraceptive responsibility for reversible contraception tend to hold on to this when a couple decides to opt for a sterilization.

At the same time, we also find a positive association between the interactional power measures and practicing female permanent instead of reversible methods. This suggests that higher average male power relates to reliance on female reversible methods whereas higher average female power relates to practicing alternative methods. The finding parallels the abundant literature on side effects of hormonal methods that direct women to use other options (Johnson et al., 2013; Lessard et al., 2012). In this light, interactional power can strengthen women's bargaining position to rely on less commonly used contraceptive methods. Given that it does not necessarily translate in male contraceptive responsibility, however, this can also be interpreted as a way of "gatekeeping" the contraceptive domain, or as merely taking up use because the male partner does not (in line with the gender hypothesis).

In combination with the absence of an effect of couple's relative education, these results further strengthen our reasoning for taking multiple power indicators into account. Although sociologists have traditionally focused on the gendered gap in power resources in terms of education, work positions or earnings (Coltrane, 2000; Lachance-Grzela & Bouchard, 2010), partners' resources have become increasingly equal (Stolley, 1996). In many OECD countries, the gender gap in educational attainment has been closing (this is confirmed in our descriptive results, Table 11.1) (OECD, 2012). The question remains

which consequences this closing (or in some countries even reversing) gender gap may have on couple mechanisms, because findings in different contexts have been inconclusive. The lack of an association between relative education and sterilization in our research is in contrast with studies carried out in the U.S. (Bertotti, 2013; Bumpass et al., 2000; Forste et al., 1995), but confirms a previous Belgian study to vasectomy versus tubal ligation (Lodewijckx, 1989). Moreover, Manning and colleagues' (2009) study among adolescents showed a strong association between relationship processes and condom use, whereas no associations were established for most structural measures. According to Stolley (1996), this can be interpreted as an indication of the increasing relevance of gender egalitarianism as a product of couples' interaction and communication, rather than as merely based on a rational appraisal of partners' relative resources. The associations that we find between housework, decision-making power and contraceptive responsibility suggest that also the latter can be perceived as a part of these interaction and communication processes that influence couples' gender egalitarianism. Although we find some evidence for our resource hypothesis, it should be clear that we particularly find evidence that couples are more than the sum of their resources. Our conclusion that a more equal division of unpaid labour goes hand in hand with higher use of male methods or tubal ligation underlines the need for more research to further explore these relationship dynamics in advanced economies, as an addition or alternative to the primary focus on partners' resources.

In all, the results of our study emphasize its unique contributions. Taking the relationship context into account sheds new lights on couples' contraceptive behaviour and emphasizes the importance of both partners' as well as the couple's characteristics. By applying a multidimensional power perspective and using two alternative approaches (i.e., contraception as an outcome of lower or higher power), we pay attention to the diverse interpretations of contraception as a burden or as a way of holding control. Furthermore, the differentiation between five contraceptive categories enabled us to get more insight into the various processes at play. Whereas male reversible methods are only associated with housework tasks and non-use with decision making, male and female permanent methods can be linked to both power measures.

Despite the strengths of this study, some limitations should be noted. First, because couple data is not available in the dataset of the GGS, partners' characteristics and childbearing desires are based on respondents' proxy reports. The main problem with proxy reports is the possible discrepancy between men's and women's answers

(Lachance-Grzela & Bouchard, 2010). For example, men tend to overestimate their share of housework whereas women tend to underestimate men's contributions (Kamo, 2000). This bias is partly balanced out, because both male and female respondents are included in the sample. As a sensitivity test, we included gender in our models and no substantial differences were noted in the other estimates (table not shown). In addition, asking about the division of housework in a relative way (with answers ranging from "always respondent" to "always partner") shows less bias between partners' answers than asking about absolute hours (Kamo, 2000).

Although this latter argument compensates in some way for the potential bias of proxy reports, the absence of absolute measurements for the division of housework and decision making is a second limitation of our study. Proportional measurements are valid and reliable instruments, but substantial differences in the amount of time spent in tasks across different households are masked and it remains unclear whether shifts in the proportion result from a change in the contribution of the woman, the man or both (Marini & Shelton, 1993). Because absolute as well as proportional measurements have their strengths and weaknesses, it is suggested that future research could benefit from using both (Coltrane, 2000).

Third, there are some timing issues concerning the variables. Our study could have benefited from incorporating several other structural power measures, such as income or occupational role. However, these were measured at the time of the survey and not at the time of choosing the method of contraception. We opted to rely on educational differences, because these are less subjected to change, determine partners' comparative advantages in the labour market (Eeckhaut, Stanfors, et al., 2014), and the unemployed and non-employed are not excluded (Monden & de Graaf, 2013). In addition, the division of labour and decision making were measured at the time of the survey, although these behaviours evolve over time. In an effort to restrict the respondents' life stage, we limited our sample to couples with no desire for (additional) children and in which the woman was aged between 25 and 49 at the time of the interview. Furthermore, respondents who had been sterilized before cohabitation with their current partner were omitted from the sample.

At the same time, the selection of our subsample raises some questions concerning the generalizability of our conclusions. Of particular relevance are the exclusion of couples with a desire for (additional) children at the moment of the survey, couples relying on dual-use or on natural family planning, and couples in which both partners are sterilized.

With regard to the first, a sensitivity analysis including all respondents who meet our selection criteria (see earlier; data section), irrespective of their childbearing intentions, was performed. Appendix 11.B provides the descriptives for this alternative sample. Not surprisingly, the sample that does not take respondents' childbearing intentions into account is higher educated, has a more egalitarian division of housework and decision making, is younger, shows a higher prevalence of cohabiting couples, and a lower number of children as compared to the sample that only includes respondents with no childbearing desire. Because couples' contraceptive options are highly dependent on their desire for children, a control variable desire for children (0 = no, 1 = yes) is added to the original DRM, and the categories "male permanent" and "female permanent" are removed because sterilization is only a possibility for those with no (additional) desire. These two adaptations however do not substantially affect our estimations. Moreover, despite the significant differences in both samples' characteristics, Appendix 11.C indicates that most findings are similar to the analyses presented in Table 11.3. The fact that the association between men's involvement in housework and their higher likelihood of using male reversible methods is also significant in this model (OR = 1.239, p < 0.01) suggests that men's contraceptive responsibility holds irrespective of partners' childbearing desires. In other words, it seems that reversible contraceptive use is liable to co-residential couples' power dynamics over the course of a relationship – before, during, and after childbearing. The negative association between decision making and non-use also remains, but is no longer significant. Next, for dual-method use, it is shown that the importance of women's method preference increases and that of men decreases when women's relative income or education is higher than her partner's, and when she has more relationship alternatives or lower commitment (Grady et al., 2010). Although we do not have information about our respondents' preferences, these results are in line with our assumptions based on the relative resource hypothesis. It can be argued that similar, or even stronger, power processes can be expected in case of dual-use as men (have to) take contraceptive responsibility over and above women's use. In contrast, couples practicing natural family planning or couples in which both partners are sterilized might be subject to alternative dynamics. First, it seems unlikely that our main findings can be generalized to withdrawal and the rhythm method as these are mostly used sporadically, in more casual relationships (Guttmacher Institute, 2008; Vaughan et al., 2008). Second, following research to partners' disagreement and their fertility behaviour (Bauer & Kneip, 2013; Thomson, 1997), a possible explanation for dual-sterilization for contraceptive reasons is that disagreement mostly tends to lead couples

to a compromise, rather than to a veto-solution in which one partner imposes his/her will. In this way, both partners undergoing a sterilization procedure might be interpreted as the result of such an agreement.

To conclude, it is clear that the overall majority of couples who practice contraception rely on female reversible methods. Apart from other advantages, these are more reliable than male reversible methods. However, some interesting processes that follow a similar logic as partners' bargaining for housework or other household decisions seem to be at play when couples decide to rely on other methods, so the theoretical framework developed around the gendered division of labour proved to be fruitful to analyse these associations (Bertotti, 2013; Fennell, 2011). Interaction and negotiation dynamics between partners become increasingly important as the gap in WE partners' education narrows. Future research would benefit from adopting a couple perspective when examining contraceptive decision-making dynamics.

12. GENDER INEQUALITY AND THE "EAST-WEST" DIVIDE IN CONTRACEPTION: AN ANALYSIS AT THE INDIVIDUAL, THE COUPLE, AND THE COUNTRY LEVEL[30]

Despite generally low fertility rates in Europe, contraceptive behavior varies to a substantial extent. The dichotomy between Western European (WE), and Central and Eastern European (CEE) countries is particularly relevant. Whereas the former are characterized by the widespread use of modern contraception, the latter show a high prevalence of traditional methods to control fertility. The current study aims to examine whether these differences can be attributed to differences in women's individual status, and in gender inequality at the couple and the country level. We combine data from the Generations and Gender Survey (GGS; 2004-2011) and the Demographic and Health Survey (DHS; 2005-2009), covering seventeen European countries, to perform multinomial multilevel analyses. The results confirm that higher educated and employed women, and women who have an equal occupational status relative to their partner are more likely to use modern reversible contraception instead of no, traditional, or permanent methods. Absolute and relative employment are also positively related to using female instead of male methods. Furthermore, it is shown that higher levels of country-level gender equality are associated with a higher likelihood of using modern reversible and female methods, but not sterilization. Particularly country levels of gender equality are linked to the "East-West" divide in type of contraceptive method used. Our findings underscore that women's higher status is closely related to their use of effective, female contraception.

12.1 Introduction

Contraceptive use patterns differ greatly across Europe. Generally, a distinction is made between countries in which the transition to the dominant use of modern contraceptives (i.e., barrier methods such as condom, diaphragm, sponge or cervical cap, hormonal contraception such as the pill, intra-uterine device (IUD), injectables or implants, and sterilization) is considered complete, and countries in which change is still progressing (Frejka, 2008a). Whereas WE and Northern Europe (NE) are characterized by

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widespread reliance on modern contraceptive methods since the 1960s-1970s, Southern, Central, and Eastern Europe have a higher prevalence of traditional methods (i.e., natural family planning, such as withdrawal and rhythm method). The latter regions have shown a sharp increase in modern contraceptive use in recent decades – the Southern European (SE) region since the 1980s and the CEE region since the collapse of the socialist regimes in the 1990s – which has narrowed, but not eliminated the contraceptive divide across Europe.

A key factor in distinguishing between traditional and modern contraceptive methods is their effectiveness in preventing conception (Frejka, 2008a), although not all modern methods are similarly effective (Trussell, 2011). Female reversible methods are very effective, as are male and female sterilization, whereas male reversible methods have higher failure rates. Nevertheless, previous research indicates that using a particular contraceptive method is not merely a product of its effectiveness. For instance, dissatisfaction with female hormonal contraceptives is identified as a common motivation for practicing less-effective male barrier methods (Grady et al., 2002), and the prevalence of female sterilization exceeds that of male sterilization, although both are similarly effective, and the first entails higher physical and financial costs (Shih et al., 2011). This suggests that contraceptive behavior is also a social practice, shaped by complex interactions between (gendered) roles and responsibilities (Gribaldo et al., 2009).

A handful of studies link the use of modern methods to female empowerment. It is argued that contraceptive use is highly dependent on women's capability to make decisions about their own fertility (Xu et al., 2011) and, in order to realize their personal and professional aspirations, women should be able to plan if and when they want to have a child (IPPF European Network, 2015). Accordingly, limited use of modern contraception can be interpreted as a manifestation of inequality in women's status (Serbanescu et al., 2004) and an inability to negotiate otherwise (Bentley & Kavanagh, 2008). Some scholars add that contraceptive control may be gendered in another way, as it can be employed to affirm or undermine men's and women's gender identities (Bertotti, 2013; Fennell, 2011; IPPF European Network & UNFPA, 2012). However, research that explicitly investigates the relationship between women's social status and contraception is scarce.

Our study aims to examine whether differences in contraceptive use across Europe can be attributed to differences in gender inequality. We focus on CEE, and Northwest

Europe (NWE), also referred to here as "East-West". Gender inequality is approached as a multilayered form of stratification (Collins et al., 1993) that influences personal capabilities via individual power resources and gendered definitions, as well as via the broader degree of gender inequality within the household and society. In line, the theoretical framework first focuses on gender equality and contraception at the individual and couple level, and then looks at the regional variation in this relationship. Data from the GGS (2004-2011) and the DHS (2005-2009) is used to examine the hypotheses.

12.2 Gender equality and contraceptive use

Gender equality refers to the extent to which men and women who are otherwise social equals (e.g., in terms of age or social class) are equal in their access to scarce and valued resources in society (Chafetz, 1990). Theories concerning gender equality primarily focus on the gendered organization of production, which stresses the economic positions of men and women, and the gendered organization of reproduction, which focuses on childbirth and parenting (Collins et al., 1993).

Only a few studies have integrated the theoretical viewpoint of the gendered division of labor to investigate contraceptive behavior (Bertotti, 2013; Fennell, 2011). Their attention focuses on two types of mechanisms. The first is in line with classic resource theories and describes how the spouse with the greater resources (e.g., the highest education or income) has greater influence in the couple's choice of contraceptive method (Grady et al., 2010). It remains unclear, however, whether higher absolute or relative power leads men and women to use contraceptives themselves or to transfer this task to their partner. Previous research repeatedly confirms the relationship between higher socioeconomic status and modern reversible contraceptive use (Dereuddre, Van de Putte, et al., 2016; Janevic et al., 2012; Serbanescu et al., 2004). Men's and women's high educational attainment, high household income, and paid employment are positively associated with consistent use of both male barrier methods or female oral contraceptives (Martinez et al., 2006; Moreau et al., 2006; Mosher & Jones, 2010; Spinelli et al., 2000). In contrast, the use of withdrawal and rhythm method is linked to lower education and unemployment (Dereuddre, Van de Putte, et al., 2016; Spinelli et al., 2000). Other research indicates that as women's educational attainment rises, the rate of switching from the pill to less-effective methods or non-use declines, but the rate of switching from the pill to male condom use rises (Grady et al., 2002). Empirical evidence

of partners' relative resources and bargaining processes concerning reversible contraceptive use is lacking. For sterilization, it is found that the higher educated or those with a higher income are less likely to rely on female sterilization and more likely to use male sterilization, compared with the lower-educated or those with a lower income (Anderson et al., 2012; Barone et al., 2004; Bertotti, 2013; Bumpass et al., 2000; Martinez et al., 2006; Mosher & Jones, 2010). The positive association between socioeconomic status and male sterilization however seems unique to the U.S. (Eeckhaut & Sweeney, 2016). Interestingly, a higher *relative* level of education for either partner, prompts that partner to opt for sterilization themselves (Bertotti, 2013; Bumpass et al., 2000).

The second theoretical perspective approaches contraceptive choice as a gendered decision, that is part of men's and women's socialization process into socially-normative gender identities and interactions (Bertotti, 2013; Fennell, 2011). As for resources and contraception, the relationship between gender identities and contraceptive practice proves to be ambiguous. On the one hand, contraception is often perceived as a female sphere of influence because women bear the physical costs of pregnancy and birth, and are traditionally responsible for childcare (Grady et al., 2010; Thomson, 1997). Although women can feel compelled to take responsibility for contraception as part of their female role, others suggest that women engage in "contraceptive gatekeeping" and that they report a clear preference for being primarily in charge of contraception (Fennell, 2011). This touches the unsolved question on women's trust in their partner for using a male hormonal pill (Glasier, 2010) and serves as one explanation why women with a higher relative education are more likely to opt for tubal ligation than vasectomy (Bertotti, 2013; Bumpass et al., 2000). In turn, disadvantaged men's reluctance for sterilization has been linked to male sterilization as a treat for their masculinity (Bertotti, 2013). On the other hand, men may define their participation in contraceptive responsibility – both in terms of actually using a male method or engaging in decision making – as part of their role as a responsible man and as a way of taking care of their partner (Fennell, 2011). In line, performing withdrawal successfully is a source of pride and masculinity in some CEE and SE countries, and is perceived as a sign of commitment, trust, and intimacy (Gribaldo et al., 2009; IPPF European Network & UNFPA, 2012).

12.3 Explaining the "East-West" divide

During recent decades, both NWE and CEE have experienced a transition in terms of gender inequality. In NWE, there has been a notable increase in women's employment, that was not accompanied by an equal increase in men's care work and housework (Lewis et al., 2008; Ma, 2010). This resulted in a trend of men working full-time and women working varying employment arrangements, ranging from housewife, to part-time or full-time employment. In CEE, social policy during the Soviet period stimulated women to join the labor force by introducing highly-developed and affordable childcare services, and generous systems of state support for maternity and family (Szelewa & Polakowski, 2008). However, few efforts were made to encourage men to do their share at home, and policy continued to be based on male-centered concepts of society and the family, and aimed at making a male-dominated society function better (David, 1999a). The collapse of the regime has led many women to return to the private sphere, among others because of a backlash in the provision of public childcare (Ma, 2010; Szelewa & Polakowski, 2008). Nevertheless, recent empirical evidence shows that female employment rates in CEE countries are still similar to those in NWE countries (UNDP, 2015).

These very distinct contexts may be relied on to explain the contraceptive divide in Europe. Although women may have achieved relatively higher "net economic power", male control over the political economy, and male-dominated ideologies at the societal level may act as a "discount factor", countering the power of women's individual resources (Blumberg & Coleman, 1989). On the one hand, country-level gender inequality may directly affect contraceptive use, because it influences social and financial barriers to accessing contraception (IPPF European Network, 2015). Besides a few NWE countries, most European countries do not include a component about sexual and reproductive health and rights (such as reimbursement schemes for contraception) in their gender equality policies. On the other hand, it may indirectly affect contraceptive use via two pathways. A decrease in socioeconomic opportunities available to women may reduce their bargaining power within the household (Fuwa, 2004). Alternatively, gender unequal societies, where traditional gender norms are more likely to be dominant, may cause women with a relatively high socioeconomic status to opt for female-appropriate contraceptives in an attempt to neutralize their gender nonconforming behavior (Greenstein, 2000).

The majority of literature on contraception, however, is limited to the individual level, and to a lesser extent the couple level. One study, by Bentley and Kavanagh (2008), examines the influence of district and country-level gender inequality on contraceptive use in a European context. They found that increasing female labor force participation within certain districts in the United Kingdom was related to a growing probability of contraceptive use. This association remained after controlling for women's individual sociodemographic characteristics and was stronger for those with lower levels of education. An inverse relationship was found across European countries, in which contraceptive use was lower when labor force participation was higher. Interestingly, this association was explained by the inclusion of an indicator for economies in transition in the 1990s. An important limitation of this study is that it does not distinguish between contraceptive methods. Dereuddre and colleagues (2016) add that higher levels of regional-level gender inequality, measured as the gender gap in income and political participation, are related to a higher likelihood of non-use or traditional contraceptives, instead of modern ones across different European countries.

12.4 Study aim and hypotheses

The aim of the current study is to explain the "East-West" divide in contraceptive use by examining its association with gender inequality. We differentiate between women who intend to have children in the future and those who have no desire, because childbearing intentions are closely linked to reversible versus permanent contraceptive options. Only for the latter group, sterilization is included. In all hypotheses, the most commonly used contraceptive category is relied on as the reference group. This enables us to investigate the processes at play when couples decide to use an alternative method.

In a first step, we look at the relationship between gender inequality at the individual, couple and country level, and the type of contraceptive method used. First, we distinguish between non-use, and traditional and modern (reversible and permanent) methods. For women with a childbearing desire, we hypothesize – in line with most existing literature – that contraceptive efficacy will surpass other arguments, and that *higher levels of gender inequality will be associated with a higher probability of using no or traditional methods, rather than modern reversible methods (H1).* For those with no childbearing intentions, previous comparisons between reversible and permanent modern methods remain lacking, but the observation that modern reversible use is generally related to higher socioeconomic status whereas – particularly female – sterilization is linked to lower

socioeconomic status (Anderson et al., 2012; Bertotti, 2013; Bumpass et al., 2000; Mosher & Jones, 2010) leads us to suggest that *higher levels of gender inequality will be associated with a higher probability of using no, traditional or modern permanent methods, rather than modern reversible methods (H1).* Second, a comparison is made between non-use, and male and female methods. Other research often ignores this gendered division, and results from the few studies that consider male *and* female sterilization are inconclusive (Eeckhaut & Sweeney, 2016). Therefore, our next hypothesis is more exploratory. Prompted by either having fewer resources or the perception of contraception as a female domain, we argue that *higher levels of gender inequality may lead women either to retain female contraceptive methods (H2a) or to transfer contraceptive use to their male partner (H2b).*

In a second step, we examine whether the "East-West" divide in contraceptive use can be attributed to differences in gender inequality. The sharp distinction between both gender inequality and contraceptive practices in the NWE and CEE regions suggests that *at least part of the differences in contraceptive prevalence can be explained by differences in gender inequality (H3).*

12.5 Method

Data

We combine data from the GGS (UNECE, 2005) and the DHS (DHS, 2013). Both survey programs start from a standard model questionnaire to ensure between-country comparability, and use probability sampling.

The GGS is a longitudinal panel survey with representative data for people aged 18-79 in 17 European countries plus Australia and Japan. Face-to-face interviews were conducted with an average of 10,000 respondents per country per wave. For the current study, we use data from the first wave (2004-2011) for four WE countries (Austria, France, Germany, and Norway) and eight CEE countries, grouped together based on their post-communist character (Bulgaria, the Czech Republic, Estonia, Georgia, Lithuania, Poland, Romania, and the Russian Federation). Belgium is excluded because of the inability to distinguish between male and female traditional methods; Hungary, Italy, the Netherlands, and Sweden due to missing information on key variables; and Australia and Japan because its geographical location is not appropriate for this study.

The DHS is a cross-sectional representative survey with large sample sizes (usually between 5000 and 30,000 households) collected in more than 90 developing countries. In the sample households, women aged between 15 and 49 were interviewed face-to-face and if possible, also their male partner (aged 15-59). We use data from five CEE countries (Albania, Armenia, Azerbaijan, Moldova, and Ukraine), gathered between 2005 and 2009.

In our analyses, we focus on a subsample of 31,632 women of reproductive age (18-49) with a male partner. Only women who meet all criteria for having "a need for contraception" are included (Klijzing, 2000): those who were not pregnant, who were physically able to have children and had a fertile partner (apart from being sterilized), and who had no desire for children at the time of the survey ("Do you yourself want to have a/another baby *now*?"). We perform parallel analyses for two groups: (1) women who intended to have one or more children *in the future* but not now (N = 8427) and (2) women who had no childbearing desire (N = 23,205). Cases with missing information were removed from the sample (accumulated percentage: 7.5%).

Measurements

Dependent variable. Contraception is classified into seven categories: (1) no method, (2) traditional male (withdrawal), (3) traditional female (the rhythm method), (4) modern male reversible (male condom), (5) modern female reversible (the pill, IUD, diaphragm, injectable, implants, spermicidal foam or jelly), (6) modern male permanent (vasectomy), and (7) modern female permanent (tubal ligation) (see Appendix 12.A for the descriptives). Respondents combining traditional and modern methods (N = 1428), or male and female methods (N = 1006) were excluded from the analyses in order to not further complicate them; sensitivity analyses indicate that this does not substantially influence our results (Appendices 12.B and 12.C). Using "other" contraceptives (N = 282) and answer categories that were not included in both survey programs (lactational amenorrhea method (N = 146), emergency contraception (N = 113), patch (N = 25), Persona (N = 133), female condom (N = 3)) were omitted. Depending on the hypothesis, different sets of categories were combined. For *contraceptive use* (H1, H3), we distinguish between no, traditional, modern reversible (reference group), and modern permanent methods; for *contraceptive division* (H2, H3), we distinguish between no, male, and female (reference group) methods.

Independent variables. Appendices 12.D and 12.E show the descriptive statistics for the independent variables. Women's individual socioeconomic position is measured by their educational attainment and employment status. For the level of *education*, the GGS relies on the International Standard Classification of Education (ISCED97). Corresponding with the standardized answer categories provided in the DHS, we differentiate between three categories: (1) lower educated (primary education or lower), (2) middle educated (secondary education), and (3) higher educated (higher education). A fourth category was added to account for respondents who were students. The higher educated are used as the reference category. *Occupational status* is coded as a dummy variable, with the employed as the reference group (0 = employed, 1 = not employed).

Women's relative socioeconomic position is assessed by comparing their educational and employment statuses with those of their partner. For *relative education*, we use a set of dummy variables: (1) both partners equally educated, (2) the woman is higher educated than the man, (3) the man is higher educated than the woman, and (4) one of the partners is a student. Equally educated partners are used as the reference group. In order to assess women's *relative occupational status*, we distinguish between three categories: (1) both partners are (not) employed, (2) the woman is employed and the man is not, and (3) the man is employed and the woman is not. The first is used as the reference category.

Gender inequality at the country level is assessed using the Gender Inequality Index (GII). This index was developed in response to the key criticisms of the Gender Development Index and the Gender Empowerment Measure, which suffer from significant conceptual and methodological limitations (UNDP, 2010). The measure reflects country-level gender inequality in achievements in three key areas: (1) reproductive health, measured by maternal mortality and adolescent birth rates, (2) empowerment, measured by proportion of parliamentary seats occupied by females and female to male ratio of adults aged 25 or above with at least some secondary education, and (3) economic status, measured by labor market participation ratio of women and men aged 15 or above. A higher score indicates a higher level of gender inequality.

Control variables. We control for *age* and *age squared*, to account for nonlinear effects. Two family-related indicators are used: partner status and parity. For *partner status*, respondents were either (1) married (reference group), (2) cohabiting, or (3) had a non-resident partner. The *number of biological children* for each respondent is a categorical variable: (1) no children (reference group), (2) one child, (3) two children, and (4) three or more children. Lastly, a dummy variable to control for *urbanity* is included as a proxy

for the supply of modern contraceptives (0 = rural, 1 = urban) (Klijzing, 2000). At the country level, we control for the *Gini coefficient* to take correlations between countries' levels of income and gender inequality into account. A higher score indicates a higher level of income inequality (World Bank, 2016c).

Analytical strategy

We use multinomial logistic multilevel models to examine our hypotheses. Given that the respondents (level 1) are hierarchically nested in countries (level 2), the assumption of independence of observations would be violated if we did not take this clustered data structure into account (Hox, 2010).

In order to examine hypotheses 1 and 2, we analyzed the association between women's absolute and relative socioeconomic characteristics, and their choice of contraceptive method. Two similar analyses are shown. The first illustrates the association between socioeconomic status and using no, traditional, modern reversible, or modern permanent methods (*contraceptive use*). The second demonstrates the relationship between socioeconomic status and using no, male, or female contraceptives (*contraceptive division*). Next, we added the GII to the models. As the estimates for the individual and couple variables did not change substantially, we limit our discussion to the latter analyses.

To investigate hypothesis 3, we start from a model that only includes an "East-West" dummy (0 = West, 1 = East). All other variables are added stepwise, to examine whether regional differences in contraceptive use and division can be attributed to differences in gender inequality at the individual, couple, or country level.

Our models were analyzed using the software program HLM 7.01 and were estimated with the penalized quasi-likelihood method (full PQL). We tested the models with absolute and relative education and employment separately, in order to avoid multicollinearity problems. All metric independent variables were grand-mean-centered. Caution is necessary when comparing the log odds, as they reflect a certain degree of unobserved heterogeneity (Mood, 2010). Therefore, all coefficients were y-standardized to enhance comparability across different models. This procedure does not alter the interpretation of the findings. The log odds are subsequently transformed to odds ratios.

12.6 Results

Before turning to our main analyses, we look whether the data confirms the expected variation in contraceptive use patterns between NWE and CEE (Appendix 12.F). Differences in prevalence rates range from 8.7% to 13.8% for non-use, from 3.6% to 32.8% for traditional methods, from 0.3% to 43.1% for modern reversible methods, and from 3.8% to 4.7% for modern permanent methods. Whereas NWE displays a higher prevalence of modern reversible female methods and permanent methods, CEE is characterized by more non-use, traditional use, and reversible male method use.

First, we examine whether an association between women's absolute and relative socioeconomic status, and using no, traditional, or modern reversible and permanent methods (*contraceptive use*) could be established (Tables 12.1 and 12.2). Model 1 shows that women who are in education, the higher educated, and the employed are more likely to rely on modern reversible methods than to use no or traditional methods. This relationship holds true for women with and without childbearing intention. For the latter group, the results indicate that socioeconomic status is also negatively related to being sterilized rather than using modern reversible methods. Model 2 indicates that woman's education relative to her partner's is not significantly related to contraceptive use, apart from couples in which one of the partners is a student. These couples show a higher likelihood of using modern reversible methods rather than no or traditional methods, as compared with equally-educated couples. Interestingly, we find a consistently positive link for couples in which the man is employed and the woman is not, and their non-use, traditional method use or sterilization. At the same time, the results for women without childbearing intention indicate that couples in which the woman is employed and the man is not, are also more likely not to use contraception instead of using modern reversible methods.

Second, for the relationship between women's socioeconomic status, and *contraceptive division* (i.e., no, male, or female methods), we find similar patterns for non-use to those in the analyses for contraceptive use (Tables 12.1 and 12.2). The results show that women's absolute education and employment status (Model 1), as well as their relative education – in the case of one studying partner – and employment status (Model 2), are positively related to using female methods rather than using no contraception. For the subsample of women with a childbearing intention, being a student or being employed

Table 12.1 The association between individual-level, couple-level, and country-level gender inequality, and contraceptive use and division for women with a childbearing desire (N_women = 8427; N_countries = 17)[a]

	Contraceptive use (ref. = modern reversible method)								Contraceptive division (ref. = female method)							
	No method				Traditional method				No method				Male method			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.597	***	0.645	**	0.423	***	0.448	***	0.698	**	0.743	*	0.847		0.864	
Education																
Low	1.637	***			1.350	**			1.525	***			1.175			
Middle	1.156	***			1.157	**			1.106	**			1.000			
High (Ref.)																
Studying	0.531	***			0.792				0.443	***			0.740	***		
Occupational status																
Employed (ref.)																
Not employed	1.342	***			1.175	***			1.436	***			1.238	***		
Relative education																
Equally educated (ref.)																
Woman higher educated			1.027				0.989				1.001				0.921	
Man higher educated			1.086				1.093				1.054				1.002	
Studying partner			0.605	***			0.800	*			0.549	***			0.802	**
Relative occupational status																
Both (not) employed (ref.)																
Woman employed, man not employed			0.938				1.138				0.915				1.003	
Man employed, woman not employed			1.289	***			1.171	***			1.362	***			1.203	***
GII	1.032	**	1.034	**	1.071	***	1.072	***	1.034	**	1.037	**	1.046	**	1.047	**

Note. [a] All models controlled for age, age squared, partner status, parity, urbanity, and Gini. ***p<.001, **p<.01, *p<.05

Table 12.2 The association between individual-level, couple-level, and country-level gender inequality, and contraceptive use and division for women with no childbearing desire (N$_{women}$ = 23,205; ; N$_{countries}$ = 17)[a]

	Contraceptive use (ref. = modern reversible method)								Contraceptive division (ref. = female method)							
	No method				Traditional method				Modern permanent method				No method				Male method			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.762	*	0.828		0.578	**	0.621	*	0.320	***	0.341	***	0.717	**	0.764	*	0.780		0.807	
Education																				
Low	1.483	***			1.165	**			1.277	**			1.435	***			1.098			
Middle	1.165	***			1.132	***			1.144	**			1.126	***			1.046			
High (ref.)																				
Studying	0.774				0.686	*			1.183				0.757	*			0.966			
Occupational status																				
Employed (ref.)																				
Not employed	1.206	***			1.121	***			1.137	**			1.187	***			1.101	***		
Relative education																				
Equally educated (ref.)																				
Woman higher educated			0.993				0.977				1.007				0.990				0.967	
Man higher educated			1.017				0.953				1.049				1.024				0.980	
Studying partner			0.931				0.779	**			1.178				0.961				0.957	
Relative occupational status																				
Both (not) employed (ref.)																				
Woman employed, man not employed			1.104	*			1.069				1.139				1.072				1.001	
Man employed, woman not employed			1.193	***			1.094	***			1.128	**			1.185	***			1.091	***
GII	1.025	**	1.026	**	1.077	***	1.078	***	1.013		1.014		1.021	*	1.022	*	1.038	**	1.039	**

Notes. [a] All models controlled for age, age squared, partner status, parity, urbanity, and Gini. ***p<.001, **p<.01, *p<.05

is associated with a lower likelihood of using male instead of female methods. In addition, couples in which one or both partners are students and in which the partners have an equal occupational status (rather than in which the woman is not employed) are more likely to rely on female methods. For the subsample of women with no childbearing intent, only absolute and relative employment status plays a role. Women who are not employed, and women who are not employed but who have an employed partner, show a higher likelihood of practicing male instead of female methods.

Next, we assess the relationship between country-level gender inequality, and women's contraceptive use and division, irrespective of their individual and couple-level characteristics (Tables 12.1 and 12.2). In both subsamples, higher levels of country-level gender inequality are associated with a higher likelihood of using no or traditional methods instead of modern reversible methods, and of relying on non-use or male instead of female methods. Interestingly, no significant association is found between GII and practicing sterilization instead of modern reversible methods.

Lastly, we examine whether the "East-West" divide in contraceptive use can be attributed to differences in gender inequality (Table 12.3). With regard to *contraceptive use*, the "East-West" dummy is related to non-use and traditional contraceptive use, but not to sterilization. The association for non-use vanishes when including the control variables in the model among those with childbearing intentions, and the GII among those with no intentions. Also the association between the "East-West" dummy and traditional methods for respondents with a childbearing intention becomes non-significant by adding the GII, whereas the relationship between region and traditional use holds among those with no additional childbearing intention. With regard to *contraceptive division*, the relationship between living in CEE and being more likely to practice no or male methods instead of female methods disappears by taking the GII differences into account.

12.7 Discussion and conclusion

Our study provides evidence for the pivotal role that gender inequality plays in predicting women's contraceptive method usage across a number of NWE and CEE countries. First, we examined the influence of gender inequality on contraceptive use. We hypothesized that higher levels of gender inequality would be associated with a higher probability of using no, traditional or – only for those with no childbearing desire –

Table 12.3 The association between European region and country-level gender inequality, and contraceptive use and division

Women who intend to have children (N_women = 8427, N_countries = 17)

	Contraceptive use (ref. = modern reversible method)								Contraceptive division (ref. = female method)							
	No method				Traditional method				No method				Male method			
	East-West		GII		East-West		GII		East-West		GII		East-West		GII	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Model 1	1.650	*			3.427	***			1.775	*			2.189	**		
Model 2	1.580				3.114	***			1.777	*			2.393	**		
Model 3 [a]	1.530	*			3.114	***			1.725	*			2.381	**		
Model 4 [a]	0.940		1.034	*	1.480		1.057	**	1.122		1.030		1.539		1.029	

Women who do not intend to have children (N_women = 23,205; N_countries = 17)

	Contraceptive use (ref. = modern reversible method)												Contraceptive division (ref. = female method)							
	No method				Traditional method				Modern permanent method				No method				Male method			
	East-West		GII		East-West		GII		East-West		GII		East-West		GII		East-West		GII	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Model 1	1.667	**			4.111	***			1.018				1.674	**			1.896	**		
Model 2	1.620	*			3.963	***			0.958				1.642	*			2.045	**		
Model 3 [a]	1.592	*			3.971	***			0.949				1.612	**			2.036	**		
Model 4 [a]	1.182		1.019		1.972	*	1.050	**	0.696		1.031		1.349		1.010		1.378		1.026	

Notes. [a] The models with absolute and relative socioeconomic status show similar estimates. This table is limited to the models including absolute socioeconomic status. ***p<.001, **p<.01, *p<.05

Model 1: East-West dummy

Model 2: East-West dummy, age, age squared, partner status, parity, urbanity, and Gini

Model 3: East-West dummy, age, age squared, partner status, parity, urbanity, Gini, education, and occupational status

Model 4: East-West dummy, age, age squared, partner status, parity, urbanity, Gini, education, occupational status, and GII

modern permanent rather than modern reversible methods (H1). We are able to confirm this hypothesis, except for the relationship between country-level gender inequality and sterilization. At the individual level our results are in line with studies in the European and U.S. context that show a positive association between women's higher socioeconomic status and modern reversible contraceptives (Dereuddre, Van de Putte, et al., 2016; Janevic et al., 2012; Martinez et al., 2006; Moreau et al., 2006; Mosher & Jones, 2010; Serbanescu et al., 2004; Spinelli et al., 2000), and a negative association with (female) sterilization (Anderson et al., 2012; Bertotti, 2013; Bumpass et al., 2000; Eeckhaut & Sweeney, 2016; Mosher & Jones, 2010). Available research that goes beyond the individual level is generally lacking for reversible methods, and comparisons between modern reversible and permanent methods are scarce, but in this study, we find that higher levels of occupational gender equality between spouses are associated with a higher likelihood of relying on modern reversible methods instead of no, traditional, or permanent methods. Furthermore, Bentley and Kavanagh (2008), and Dereuddre et al. (2016) similarly conclude that district/regional-level gender inequality is associated with lower levels of (modern) contraceptive use. In all, contraceptive efficacy and reversibility thus seem to trump other arguments as higher levels of gender equality prompt women to use modern and reversible contraception. In line with the relative resources perspective, these results provide evidence that a higher social status enables women to opt for a more effective, reversible method. Interestingly, only for non-use, we find that both women's higher *and* lower relative employment status are related to a lower likelihood of modern methods. This might indicate that attention could also be shifted toward a heterogamy argument rather than a gendered-power thesis. Studies carried out in the United States stress that the fewer similarities partners have – in terms of age, education, etc. – the less likely it is that they will rely on contraceptive methods (Ford et al., 2001; Kusunoki & Upchurch, 2011). A commonly made explanation is that heterogamous couples have more difficulty in communicating effectively with each other about contraceptive method choice because of diverse sexual experience and knowledge.

Turning to our results for contraceptive division (H2a-b), no association is found between educational attainment, and male versus female methods. At the same time, women's individual employment and equal employment status relative to her partner's, and country-level gender equality are related to a lower likelihood of using male methods. These results suggest that more gender equality goes hand in hand with a higher likelihood of female contraceptive usage. However, additional sensitivity analyses reveal

that the relationship between education and type of contraception is more complex (Appendix 12.G). For example, when we focused only on those who use modern reversible methods, we find that women with a higher education are more likely to rely on male, rather than female methods. This is surprising, given that modern reversible male methods, such as the condom, are defined as the less-effective contraceptive than modern reversible female methods (Trussell, 2011). Likewise, when we focused on the sterilized respondents, we found that women living in a country with lower levels of gender inequality were more likely to rely on vasectomy than tubal ligation. Although the first set of results about contraceptive use indicates that efficacy, unsurprisingly, is a primary factor in women's contraceptive choices, these findings add that the assumption that contraceptive behavior advances linearly – from irrational, ineffective, or traditional methods to rational, effective, or modern methods (Gribaldo et al., 2009) – should be nuanced. We argue that neither H2a (higher levels of gender inequality lead women to retain female contraceptives) nor H2b (higher levels of gender inequality lead women to transfer this task to their partner) can be confirmed or rejected. Instead, it can be suggested that contraceptive decision making is influenced by multiple factors, and that the resource and gender perspectives as such do not offer a clear explanation yet. This echoes the repeated conclusion in the comprehensive literature about the division of paid and unpaid labor (Lachance-Grzela & Bouchard, 2010).

In the final step, we link our findings to the "East-West" divide in contraception (H3). Similarly to Bentley and Kavanagh's (2008) observation that the link between female labor force participation and contraception vanishes by including an indicator "economies in transition during the 1990s" in their models, our results confirm that levels of gender inequality at the country level associate with the regional differences for no and traditional instead of modern method use, and for no and male instead of female method use. Thus, the observation that CEE countries are characterized by a significantly higher prevalence of no, traditional and modern reversible male method use (Appendix 12.F) can be connected to the higher GII scores in this region (Appendices 12.D and 12.E). It is somewhat surprising that variations in country-level gender inequality have a more pronounced explanatory power for the "East-West" divide than variations at the individual and couple level. This may be a reflection of limited health care systems for women (Carlson, 1998) impeding access to modern contraceptives, as well as the presence of stigmatizing ideas related to modern and female methods (IPPF European Network & UNFPA, 2012). More in general, this adds to sociological studies that focus on the "East-West" dichotomy from a health perspective, such as those

linking deteriorating behavior (e.g., heavy smoking or drinking), lack of resources in the health care system, and social stagnation and disorganization in CEE to higher levels of mortality and worse self-perceived health (Carlson, 1998; Monden & de Graaf, 2013).

Before we turn to the conclusion, it is important to acknowledge some limitations. First, we combine data from two survey programs – GGS and DHS – to enable multilevel analysis. Methodological strategies to handle possible differences between the GGS and DHS (e.g., adding a survey dummy) assume that both include a representative set of countries, but the latter only contains CEE countries. Nevertheless, sensitivity analyses with the GGS sample only, at the individual and couple level, indicate that the estimates remain largely similar. All datasets are nationally representative, collected within the same time period and via similar data collection techniques, and the country specific sample sizes are similar. Moreover, the questions used to construct the variables are asked in a similar way and we only use the answer categories that are available in both survey programs (e.g., contraceptive options). This also led us to not include an income measurement in our analysis, although previous research demonstrates that household income is positively associated with using contraception (Janevic et al., 2012) and negatively with contraceptive failure (Mosher & Jones, 2010). Whereas the GGS asks respondents about their personal, partners', and total household income, the DHS contains a wealth index based on, among other things, household ownership of a television, type of drinking water source, and toilet facilities (DHS, 2004). By taking two other important indicators into account (education and employment), we do pay attention to the multidimensional character of women's socioeconomic status. Second, empirical studies repeatedly showed that socioeconomic differences in contraceptive use are likely to be shaped by financial barriers and limited access to contraceptive use (Eeckhaut & Sweeney, 2016). The type of residence is considered a proxy for respondents' access to modern contraceptives, although we are aware that this indicator does not capture all aspects of contraceptive availability and accessibility. This is mainly due to a lack of better alternatives in the questionnaires, and we prefer *some* control over *no* control. Comparison between our urbanity dummy and the IPPF European Network's (2015) evaluation of European countries' policies concerning accessing modern contraceptives indicates that the general patterns are similar. For instance, most NWE countries in our study show a higher percentage of urbanity as well as better scores in terms of reimbursement of contraception or sex education for young people (IPPF European Network, 2015). In reverse, CEE countries display higher levels of women living in a rural residence and score lower on these indicators. Third, because gender

inequality is manifest in many aspects of women's lives, it is important to approach it as a multidimensional construct (Collins et al., 1993). For example, limiting gender inequality to labor force participation would lead us, given the CEE background, to inaccurate conclusions, because the high prevalence of female employment does not necessarily translate into a better social position (David, 1999a). We tried to take this multilayered character into account by paying attention to multiple measurements of women's social position at the individual, household, and country level. Finally, it would be worthwhile to take other parts of Europe – for instance the Southern region – into account, as this region shows similarly high rates of traditional method use than CEE (United Nations, 2013), despite the introduction of more-effective methods (Dalla Zuanna et al., 2005; Gribaldo et al., 2009). Unfortunately, neither the GSS nor DHS include key information concerning contraceptive use for these regions.

In sum, our results indicate that the "East-West" divide in contraceptive use remains relevant to this day. At the same time, these findings should not distract our attention from the enormous heterogamy among countries in both regions (Szelewa & Polakowski, 2008) as large variations in terms of contraceptive patterns can be identified (Appendix 12.A). We conclude that women's status at the individual and couple level are important predictors for contraceptive use and division, but that diverging patterns between NWE and CEE in non-use, and traditional and male methods are particularly linked to varying levels of country-level gender inequality. The introduction and spread of female methods has shifted responsibility from men to women and has given women greater power to maintain couples' reproductive decision making (Dalla Zuanna et al., 2005). Despite commonly reported dissatisfaction concerning hormonal contraceptives (e.g., side effects) (Johnson et al., 2013), it seems that overall, women primarily continue to rely on female reversible contraceptives in contexts that display higher levels of gender equality.

13. GENERAL DISCUSSION AND CONCLUSION

The main driving question behind this dissertation was how to explain the "contraceptive paradox" in European countries. Specifically, I aimed to advance understanding of the observation that many sexually active women display less-effective contraceptive behavior than could be expected, based on the availability of highly-effective birth control methods (Balbo et al., 2013; Frost & Darroch, 2008; Grady et al., 2002; Guttmacher Institute, 2008; Moreau et al., 2006; Vaughan et al., 2008). Previous studies already offer substantial insights into how contraceptive use or non-use are closely tied to a person's socioeconomic status or fertility intentions, but important questions remain unanswered, such as how to explain the greater likelihood of the higher educated than the lower educated to switch from more-effective pills to less-effective condoms, or the persistent reluctance in many Central and Eastern European (CEE) countries to adopt the pill or intra-uterine device (IUD). This is mainly due to the underlying assumption of linearity in this research topic; many scholars start off from the idea that a linear transition from less-effective to more-effective contraceptive use can be expected (Dalla Zuanna et al., 2005; Gribaldo et al., 2009; Johnson-Hanks, 2002).

My objective and research aims were guided by and add to recent developments in the study domain that approach contraception as a social practice. By carefully outlining the current position of European contraceptive use (research aim I; Chapters 8 and 9), I gain insight into patterns and trends in contraception, and into how diverging individual characteristics and reproductive climates shape the uptake of effective contraceptives. By exploring the links between empowerment at the individual, couple, and country level, and contraceptive efficacy and the division of its use (research aim II; Chapters 10, 11, and 12), I expand knowledge on the social nature of contraception and the ways in which the practice relates to expectations concerning men's and women's roles.

This final chapter first summarizes the main findings of my thesis and integrates them in a more general framework. Subsequently, an overview of the most important limitations is provided, and the implications for future research, policy makers and health care professionals are discussed.

13.1 General results and conclusions

When reading the general results and conclusions of this dissertation, one should bear in mind that the results only apply to a subsample. The selection of the study samples differs slightly across the five empirical chapters, but overall, I only include respondents identified as needing contraception. That is, men and women (only women in Chapter 12) who are in a heterosexual partnership, who ever had sexual intercourse, who are fertile (however, in Chapters 9, 11, and 12, including those who are sterilized), who are not (trying to get) pregnant, and who had no desire to have children at the time of the survey (except in Chapter 9). The age range of the respondents mainly depends on cross-country comparability issues, but is somewhere between 18 and 49 in all chapters.

Below, I start with a description of the latest patterns and trends in contraceptive behavior, and then successively outline how indicators at the individual, couple, and contextual level affect contraceptive efficacy and the division of contraceptive use. It should be noted that there is some overlap in the discussion of the two research aims (i.e., research aim I: to outline the current position of European contraceptive use, Chapters 8 and 9; research aim II: to examine how contraceptive use and its gendered nature can be explained by individual characteristics, couple dynamics, and the macro context, Chapters 10, 11, and 12) given that both aims imply investigation of individual determinants and reproductive climate indicators.

Patterns and trends in contraceptive use

With regard to the use of highly-effective contraception, countries in Northern Europe (NE) and Western Europe (WE) are usually considered the forerunners, and those in CEE are perceived as lagging behind (Frejka, 2008a). The patterns that arise from the Generations and Gender Survey (GGS) data are no different. In my study samples, the use of natural family planning is virtually nonexistent in Northwest European (NWE) countries whereas it remains an important form of birth control in much of CEE. Although the differences are smaller, not using any form of contraception among those who do not want any children (i.e., unmet need for contraception) is also more prevalent among CEE residents. At the same time, countries in NE and WE are characterized by notably higher percentages of people using highly-effective methods, among which are oral contraceptives, long-acting reversible methods, and sterilization. According to previous research, the delay of CEE countries in adopting these methods can be linked

to a combination of factors; the region was not only characterized by a deeply ingrained "abortion culture" for a long time, but also by skepticism of the medical establishment, low availability of and access to contraception, and an unstable supply of low-quality domestic contraceptives (David, 1999a; Frejka, 2008a; Serbanescu & Seither, 2003; Westoff, 2005).

However, whilst there is a clear "East-West" divide, my results also show that there is substantial variation in contraceptive use within each region. For CEE, this adds to the increasing calls to consider the different stages of reform in post-communist countries, rather than treating them as "one bloc" (Berdzuli et al., 2009; Brzozowska, 2015; Ferrarini & Sjoberg, 2010; Szelewa & Polakowski, 2008; Tang & Cousins, 2005). Bulgaria, for instance, is seen as the country lagging behind the others despite some signs of improvement in the last decade. The 1990s in the country were characterized by economic stagnation, poverty, high unemployment rates, political corruption, increased crime, and a general feeling of insecurity (Carlson & Lamb, 2001; Vassilev, 1999). In this context, effective female contraceptives remained out of reach for many given their high cost (Vassilev, 1999). In line with other findings, I show that this translated into a persistently high reliance on low-cost and easily-accessible methods: withdrawal and condom use. At the other end of the spectrum are CEE countries that successfully mirrored WE institutional arrangements and social protection systems in their transformations after the collapse of the Soviet system (Ferrarini & Sjoberg, 2010). The highly secularized and relatively wealthy Czech Republic is a prime example (Brzozowska, 2015; Van de Velde, Bambra, Van der Bracht, Eikemo, & Bracke, 2014). According to my results, this country nowadays shows similar percentages to some NWE countries for medical contraceptive use.

In WE, the variation is less evident, but it is remarkable that Austria scores somewhat lower in reliance on effective birth control than Belgium, France, and Germany. This aligns with the observation that it is the only country of the four that has no reimbursement schemes for contraception, and in which the level of available, accessible, and affordable consultations with regard to contraceptives is good, but slightly lower than in its WE counterparts (European Parliamentary Forum on Population & Development, 2017).

In addition to what we might learn from current region-specific and country-specific patterns in contraceptive behavior, Chapter 8 further shows the relevance of comparing these with the patterns observed a decade or more before. Although it is not surprising

to see that the medical contraceptive model has gained ground in all countries, it is interesting that this is not necessarily translated into a decrease in the use of cooperative methods (mainly comprising condom use). In WE countries, the prevalence of medical and cooperative methods rose simultaneously (though at a different pace as the former increased more quickly) and in most CEE countries – where the rates of cooperative contraception were initially already high – reliance on cooperative methods remained largely unchanged. According to Hubert and colleagues (1998), the interpretation of these trends in terms of condom use suggests an "AIDS prevention effect". Practicing condom use was reintroduced as a crucial contraceptive method from the 1980s onward, in the context of national HIV/AIDS prevention campaigns (Le Guen et al., 2015; Matic et al., 2006; Rossier & Leridon, 2004). Moreover, it is suggested that men and women who make efforts to take preventive measures in their sexual relationships are often the ones who are receptive to both information on pregnancy prevention and condom-promoting messages to prevent sexually transmitted diseases (Rossier & Leridon, 2004).

In brief, the "East-West" gap in the use of effective contraception remains a prominent feature in the European landscape, though it proves sensible to pay attention to some country-specific nuancing within the regions too. The increasing dominance of the medical contraceptive model is found to be universal across the countries under investigation, a trend that is in most cases paralleled by rising or stable levels of cooperative method use. This might be interpreted as some preliminary support for the argument that the use of less-effective contraceptives does not logically give way to the use of more-effective alternatives.

Beyond contraception as a woman's individual, efficacy-driven choice

A first set of explanatory results adds to and extends the traditional research stream that examines how individual – often female – characteristics relate to contraceptive behavior. To date, the positive association between socioeconomic status and contraceptive efficacy has been consistently established (Eeckhaut, Sweeney, et al., 2014; Janevic et al., 2012; Lodewijckx, 2002; Martinez et al., 2006; Mosher & Jones, 2010; Oddens, 1996; Serbanescu et al., 2004; Serbanescu & Seither, 2003; Spinelli et al., 2000). This aligns with the idea that individuals with greater human capital are inclined to use highly-effective reversible contraceptives, as they face higher opportunity costs (Brewster & Rindfuss, 2000; Gustafsson & Worku, 2005; Kohler et al., 2006; Van Bavel,

2010) of contraceptive failure. Implicitly, it also supports the notion that effective contraception can be interpreted as the "more informed" choice.

This socioeconomic gradient in contraception is also reflected in my results. More importantly, I find that both male and female characteristics account for this gradient. Men and women who have a higher level of education, who are in paid employment, or who live in an urban area are more likely to practice (female) modern reversible methods, whereas those who are lower educated, who are not employed, or who live in a rural area are more likely to not use contraception, or to rely on natural family planning or sterilization. Furthermore, it should be noted that men's and women's education are equally important in predicting the method of contraception used, when distinguishing between non-use, male reversible and permanent use, and female reversible and permanent use (Chapter 11). In line with the notion of opportunity costs, the results in Chapter 9 indicate that people who assign higher costs to having (additional) children are more likely to practice modern contraception rather than to not use any method.

Nevertheless, two other findings suggest that there is more to the story, and that contraceptive use is not a product of its efficacy alone. First, the uptake of less-effective traditional versus more-effective modern method use does not differ by people's fertility intentions or the perceived costs of having (more) children (Chapter 9). In other words, the decision to rely on either traditional or modern contraceptives is based on a similar cost-benefit calculation. This contradicts the commonly made assumption that people who practice natural family planning are not committed to or informed about contraception (Dalla Zuanna et al., 2005; Gribaldo et al., 2009; Johnson-Hanks, 2002). Instead, given that natural family planning is mainly practiced in the CEE region, the use of traditional methods should be interpreted in the light of the long-standing negativity toward the pill and IUD (Serbanescu & Seither, 2003; Sonfeld, 2007). Although virtually everybody knows that traditional methods are less effective, their "natural" character makes them the safest from a health perspective (IPPF European Network & UNFPA, 2012). In addition, traditional contraception has been used for ages, is free, always available, and requires no preparation. This finding also shows the importance of examining natural family planning as a valuable contraceptive alternative – yet acknowledging its lower efficacy – rather than putting it into one category together with using no contraception (e.g., Janevic et al., 2012; Klijzing, 2000; Singh & Darroch, 2012).

Second, the investigation of cooperative versus medical contraceptives indicates that, compared with those having a lower level of education, the higher educated in NWE are

more likely to rely on less-effective cooperative methods than on more-effective medical methods (Chapter 8; see also the sensitivity analyses in Chapter 12, Appendix 12.G) for a comparison between the use of condoms and modern reversible female methods). Moreover, I find that in Germany and Austria, the lower educated are more likely to practice medical methods than the higher educated. These findings have received little attention elsewhere as yet, but a few other recent studies point in the same direction. Le Guen and colleagues (2015) conclude that in France, higher-educated men are more likely to practice withdrawal or condoms than lower-educated men, and Grady and colleagues (2002) find that women with a higher education in the U.S. are less likely to switch from the pill to less-effective methods, but are more likely to change from using the pill to using condoms. This observation might be interpreted in two ways. One explanation starts off from a health perspective and fits into the broader argument that the higher educated are more engaged with the adoption of health behavior and a healthy lifestyle than the lower educated (Cockerham, 2005; Pampel, Krueger, & Denney, 2010). In relation to disease prevention, previous research concludes that the higher educated are overall more likely to engage in preventive health practices, such as breast cancer screening, flu vaccinations, etc. (Jusot et al., 2012; Missinne et al., 2014). With regard to pregnancy prevention, one could think about the health concerns and side effects related to oral contraception (Huber et al., 2006; Johnson et al., 2013; Rosenberg & Waugh, 1998; Rosenberg et al., 1995), and women's beliefs regarding the nature of hormones in some types of medical contraceptives (Cheung & Free, 2005; Johnson et al., 2013; Picavet et al., 2011). Many women seem to worry about the chemical, unnatural character of hormones, are wary of using hormonal contraceptives for a long time, and often discontinue their use because they no longer want to be exposed to these "additional" hormones. Condoms may then come into focus because – although they have their own disadvantages (e.g., less effective, inconvenient) – they are credited with causing no health concerns or side effects (Cheung & Free, 2005; Johnson et al., 2013). An alternative explanation is associated with the observation that many women think that too much responsibility for contraception falls on them (Glasier et al., 2000), whereas the majority of men are keen to be involved to a greater extent (Fennell, 2011; Glasier et al., 2000; Grady et al., 1996; Greene & Biddlecom, 2000). A recurrent finding is that higher-educated men in particular are more likely to challenge the dominant norm of contraception as a female domain by engaging in condom use (Le Guen et al., 2015; Martinez et al., 2006), by showing a greater willingness to take a male pill whenever it becomes available (Heinemann, Saad, Wiesemes, White, & Heinemann, 2005), and by

being overrepresented in the group of those having had a vasectomy (Anderson et al., 2012; Barone et al., 2004; Bertotti, 2013).

Together, these results suggest that contraceptive choices are undeniably guided by individuals' socioeconomic position and appraisal of the costs related to contraceptive failure. At the same time, however, it should be acknowledged that contraceptive efficacy is sometimes of secondary importance (e.g., because of health reasons), leading men and women to settle for a less-effective – but therefore not necessarily uncommitted or uninformed – contraceptive choice, such as natural family planning or condoms. Whereas the above explanations for this observation are based on previous literature, a couple perspective is adopted in the following paragraphs, in an effort to search for new empirical evidence that can provide more insight.

Couples' division of paid, unpaid, and contraceptive work

Recent developments in the study domain of contraception draw attention to the dyadic nature of contraceptive decision making. A wide variety of perspectives has been offered, ranging from how mere dissimilarities in partner characteristics (i.e., heterogamy) are linked to using no contraception or less-effective methods, to how partner differences might serve as a basis for decision-making power. Two types of partner differentials are considered in this dissertation: structural differences (measured as partners' relative level of education and employment status) and interactional differences (measured as partners' division of household labor and decision making).

Before I turn to the most important findings on couples' division of paid, unpaid, and contraceptive work, I should briefly mention the hypotheses that were formulated in this regard. In Chapter 10, I follow an economic approach to fertility behavior. Based on the appraisal that partners' accumulation of resources can act as an incentive to proceed to childbearing (Balbo et al., 2013), I hypothesize that those in female breadwinner households – often characterized by economic uncertainty (Drago et al., 2004; Vitali & Arpino, 2016) – will be more likely to rely on more-effective contraceptive use than those in dual-earner households. Based on the observation that a woman's economic inactivity in male breadwinner families is more often a deliberate choice (Schmitt, 2012) than a man's in female breadwinner families, I suppose that female breadwinner households will also be more likely to rely on more-effective contraceptive use than those in male breadwinner households. Empirical evidence for the association between men's lower participation in housework, lower fertility intentions, and the lower

likelihood of having (additional) children (Mills et al., 2008; Neyer et al., 2013; Olah, 2003) led me to suppose that men's lower share in household labor will be associated with more-effective contraceptive use. In Chapter 11 (which only includes WE couples) and Chapter 12, I rely on the relative resource perspective and gender theories. The theoretical basis of the first leads one to expect that the partner with the greatest resources has the most influence in a couple's choice of contraception; gender theories adhere to the idea that contraception – usually considered as a female domain – can be perceived as another way to "do" gender. Given the lack of clarity on whether using the contraceptive method can be interpreted as an indication of higher or lower power, I constructed two contrasting hypotheses: the partner with most power can either retain contraceptive use *or* transfer it to his/her partner.

First, I cover the results concerning partners' structural differences. Interestingly, partners' relative education does not appear key to understanding contraceptive use, as no association is found, either for contraceptive efficacy, or for the gendered division of contraception (Chapters 11 and 12). By contrast, partners' division of paid labor does affect contraception. The results in Chapter 10 indicate that compared with female breadwinner households, couples in which the partners have a similar occupational status are more likely to practice short-acting female methods instead of no contraception or natural family planning. Furthermore, male breadwinner families and couples in which neither partner is employed do not differ substantially from female breadwinner families in their contraceptive use. In Chapter 12, I show that couples in which the two partners work are more likely to practice modern reversible methods instead of traditional contraceptives or sterilization, and to use female methods instead of male methods, compared with couples in which the male partner is employed and the female partner is not. Women's lower and higher relative employment status are both associated with a greater likelihood of not using any contraceptives.

In all, most of these findings suggest that partners who are alike in job status use more effective, female contraceptives than their counterparts who are dissimilar, which points to a heterogamy argument rather than an economic fertility thesis or a gendered-power thesis. It confirms other evidence that heterogamous couples use less-effective reversible methods, a finding that is explained by referring to difficulties in effective communication about contraception in these couples due to differences in planning, knowledge, etc. (Ford et al., 2001; Kusunoki & Upchurch, 2011; Sprecher, 2013). Moreover, the absence of an effect for relative education in combination with the

evidence for an association between relative occupation and contraception echoes the observation that the gender gap in educational attainment has been closing – or reversing – in many European countries, a process that has not yet been translated fully to the labor market (European Commission, 2016).

Next are the results for partner differences based on interaction processes. In contrast to the former findings, these suggest that contraception might also be a way to display (gendered) power. In Chapters 10 and 11, I show that households in which the male partner takes on more housework than on average are characterized by greater male involvement in contraceptive use. Men in these couples are not only more likely to use condoms, but are also more likely to undergo a sterilization procedure (Chapter 11). Couples in WE in which the woman has most say in decision making display a higher likelihood of practicing male sterilization too (Chapter 11). On the other hand, WE women living in households characterized by greater female power – measured as men's averagely higher share in housework and their lower share in decision making – are also more likely to be sterilized themselves rather than to rely on female reversible methods (Chapter 11). Lastly, there is a positive association between men being more involved in housework and decision making, and couples' non-use (Chapters 10 and 11).

Taken together, most of these findings for interactional partner differences indicate that women's higher power relates to a rejection of using female reversible methods, which either results in higher male involvement in contraception, using female sterilization, or not using any contraception. Given the combination of results, it is worth remembering that contraception is often considered a negative choice, picked from a set of even more unpleasant alternatives (Snowden, 1985 cited in Walsch, 1997, p. 89). Hence, women can use their stronger bargaining position to pass on the contraceptive burden to their partner – which confirms a relative resource reasoning – or to opt for a permanent female method if they have no desire for (additional) children – either because they are the "gatekeeper" for the contraceptive domain or because their partner does not want to take up "female" contraceptive responsibility, both of which align with gender perspectives. It is difficult to fit the observations for non-use into this power framework; the results show that men's overall higher involvement in the organization of the household – in terms of their share in housework as well as decision making – relates to a higher likelihood of not using any contraception. This somewhat parallels previous findings in fertility research on how men's involvement in housework is also associated

with higher fertility intentions and an earlier transition into parenthood (Mills et al., 2008; Neyer et al., 2013; Olah, 2003), and thus also with lower costs of contraceptive failure.

From all this, I conclude that imbalances in partnerships might result in an increased use of less-effective or of permanent contraception instead of female reversible methods. With regard to differences in occupational status, this can be mainly explained by the presence of asymmetries – irrespective of which of the partners has the higher status. When looking at the division of housework and decision making, however, imbalances *do* have a gendered impact; whereas men's higher power relates to the uptake of commonly used female reversible methods, women's higher power is associated with a higher likelihood of using alternative contraceptives. These results highlight the importance of approaching partner differentials from a multidimensional perspective and pinpoint the complexities underlying contraceptive decision making.

On how contraceptive decisions are embedded within the macro context

Inspired by reproductive health studies in developing countries (Gakidou & Vayena, 2007; Wang, 2007; Wang & Pillai, 2001), scholars increasingly recognize that contraceptive decisions in advanced economies are also influenced by the sociocultural context in which they are made (Clark, 2006; Grady et al., 1993). It has been suggested that each societal level leaves its traces in people's contraceptive behavior (Almeling, 2015), and that the macro context does so to a greater extent, as control at the individual level and couple level may be impeded or enhanced by control at the contextual level (Blumberg, 1984). In Chapter 9, I extend the ready-willing-able model to the macro level, and I examine how family policy, prevailing normative principles, and gender equality (at the regional NUTS 1 level) shape contraceptive behavior. Chapter 12 sheds light on the association between country-level gender equality, contraceptive use, and partners' contraceptive division, and investigates whether "East-West" contraceptive variance can be explained by differences in gender equality.

First, I find that men and women living in regions in which part-time employment is promoted are more likely to use modern contraception when they want to postpone childbearing or when they attribute higher costs to having a/another child (Chapter 9). Furthermore, higher levels of contextual gender equality – both at the regional (NUTS 1) and the country level – are also associated with a higher likelihood of practicing modern (reversible and female) methods than not using any contraception or relying on traditional methods (Chapters 9 and 12). Chapter 12 further adds that mainly differences

in women's status at the county level, and not those at the individual and couple level, enable us to explain diverging contraceptive patterns in NWE – characterized by a higher degree of macro-level gender equality – and CEE – characterized by lower levels of gender equality. In all, this indicates that advances in family policy and gender equality translate into highly effective contraceptive use, which seems at odds with the opportunity costs thesis and other findings in fertility research. Despite inconsistencies in literature, both family policy and gender equality have been previously linked to a reduction of the cost of childbearing and an increasing trend in total fertility rates (Esping-Andersen & Billari, 2015; Gauthier, 2007; Hoem, 2008; McDonald, 2000a, 2000b, 2013; Toulemon et al., 2008). Hence, it seems that increasing rights for women and for couples may lower the barriers to having a child among those who want one, but at the same time may increase the opportunities to effectively prevent childbearing when they do not want to have a/another child.

Next, people from more secular regions – measured by the prevalence of religiously committed residents – are more likely to use modern methods instead of no contraception, irrespective of their own religious beliefs and practices (Chapter 9). The normative context has also been shown to be relevant to contraceptive use, and more broadly fertility behavior, in other studies (Grady et al., 1993; Neyer & Andersson, 2008). This should be interpreted in relation to the context in which the pill and most other effective contraceptives spread across European countries; that is, within an era of rapid secularization and altering value systems grounded in the second demographic transition (e.g., postponement of parenthood, transition to lower fertility levels) (Lesthaeghe & van de Kaa, 1986; Lesthaeghe & Vanderhoeft, 2001).

Overall, evidence is found that the implementation of part-time employment and higher levels of gender equality and secularization relate to more effective, female contraceptive behavior. More importantly, the findings show the relevance of examining contraception from a bird's-eye view, given that the macro-level indicators are useful predictors of couples' contraceptive use, over and above relevant individual and (only for Chapter 12; gender equality) partner characteristics.

Concluding remarks: An integration of the findings at the individual, couple, and contextual level

Some empirical evidence for the "contraceptive paradox" is found, along with multiple explanations that might offer greater insight into it. The female socioeconomic gradient

in contraceptive use is confirmed once more, but is also extended to the association between men's socioeconomic characteristics and contraception – in line with only a few previous studies. An exception is the use of male condoms; although female methods are generally more effective, the higher educated – compared with the lower educated – seem to rely on condoms to a greater extent. This can be linked, for example, to the higher educated being wary of using hormones or being more likely to involve men in the contraceptive domain.

Next, I show that not only men's and women's individual status, but also that of their partner is relevant in predicting contraceptive behavior. Whereas partner similarities in employment are associated with a higher likelihood of using female reversible methods, partner differentials in employment relate to less-effective or permanent contraceptive practice. Furthermore, couples in which the female partner has more interactional power than on average (i.e., performs less housework or takes more decisions than the male partner) are inclined to take a step back from female reversible contraceptives, as they report a higher likelihood of using male methods, tubal ligation, or non-use compared with couples in which the male partner has more interactional power.

Lastly, the macro context also adds to variance in contraceptive behavior. Irrespective of partners' characteristics, indicators such as family policy, gender equality, and secularization influence the extent to which couples use effective contraceptives.

This thesis is a first attempt to approach contraception as a social practice from an integrated division-of-labor approach, implemented at different societal levels. Although the list of reasons that explain the "contraceptive paradox" is undoubtedly much longer, I conclude that partner dynamics and country-level climates contribute in important and complex ways to decision making about contraception. Contraceptive behavior is shaped by the efficacy of each available method type, of course, but only to a certain degree.

13.2 Limitations

The theoretical and methodological approaches in the current dissertation unavoidably have a number of limitations. The specific shortcomings related to each empirical chapter are discussed above; here, I identify the most prominent overarching limitations, how I tried to handle them, and how they may be addressed in future research.

GGS data collection wave 1

The data for the first wave in the GGS was collected between 2002 and 2013, and the data for the 13 countries that are included in the empirical chapters here was gathered between 2004 and 2011 (GGP, 2016). Hence, there is substantial cross-country variation in the timing of data collection (Fokkema et al., 2016). Observed differences between countries can therefore reflect either genuine country differences or partial period differences.

Nevertheless, I believe that the consequences of this are likely to be small in my empirical studies. The country-specific approach in Chapter 8 makes it less of a problem, given that the core idea is to look at changes *within* the countries, rather than comparing between them. In the other chapters, the datasets from multiple countries are pooled and the hierarchical structure is accounted for by means of multilevel or fixed effects models that control for country-level variance. As I mentioned before, this is necessary because individual observations in such a type of pooled dataset are not completely independent, as people living in the same country are more similar than people living in different countries (Hox, 2010). In a way, these statistical procedures also control for the country-specific timing of the data collection; by taking country-level variance into account, I implicitly also acknowledge that individuals are nested in different, country-specific data collections.

Reverse causality

This dissertation – and most literature that examines contraceptive behavior – considers contraception as an *outcome* of individual's socioeconomic status, couple dynamics, or the reproductive climate, rather than a *predictor*. Nevertheless, unmet need for contraception is still perceived as an important component in women's inability to achieve their personal, social, and professional goals (IPPF European Network, 2015). Historically, one of the most important consequences of the launch of the pill and other highly-effective contraceptives in the 1960s was the severing of the direct connection between sexuality and pregnancy (Gupta, 2000; van de Kaa, 2011; Wajcman, 1991). In WE, this point in time was characterized by profound social and demographic changes (e.g., rising cohabitation rates, more postponement of parenting, advancing female education and labor force participation) (Lesthaeghe & Neels, 2002; McDonald, 2000a) that were facilitated by the increased availability of more-effective contraception (Frejka, 2008a). Among other things, it enabled couples to plan family formation more accurately

and paved the way for increased opportunities for women's higher education and employment status (Bailey, 2006; IPPF European Network, 2015). Furthermore, fertility control played a major role in the rise of cohabitation given that the social justification for marriage – perceived as a central locus for childbearing – became less relevant (Nock, 2005; Sweeney et al., 2015). CEE countries also had a simultaneous increase in modern contraception, liberalization of sexual morals, and increasing levels of premarital sex after the collapse of the Soviet system (Sobotka, 2008).

At the same time, however, it should be noted that it is plausible to assume that the decision to obtain a higher level of education or to enter the labor market is today most often *not* dependent on contraception in the countries under investigation, because the increasing availability of effective contraceptives over time has made them (close to) the standard in many European countries (Balbo et al., 2013), and abortion in case of contraceptive failure is deeply ingrained in the CEE region, which is characterized by less-effective contraceptive practice (Frejka, 2008a; Stloukal, 1999).

Another problem relating to reverse causality is the temporal ordering of the variables. Logically, the causal variable should precede the outcome variable in time in order to establish a causal relationship (Frees, 2004; Taris, 2000). I make use of individual and couple characteristics, and the surrounding reproductive context, as measured at the time of the survey – not at the time of choosing the method of contraception – to predict contraceptive use. Although the GGS provides some retrospective information (e.g., on education, economic activity, partnerships) (Vikat et al., 2007), no data is available on changes in the organization of the household or the length of contraceptive use. Overall, educational attainment is least subject to change, and least likely to be influenced by couple decisions as it usually precedes labor market entry (Eeckhaut, Stanfors, et al., 2014), and therefore is most likely to also precede contraceptive choice. For the association between the other structural measurements (e.g., employment status) and interactional indicators (e.g., division of housework, decision making), and contraceptive use, it is less clear what comes first. Not only are the predictors likely to evolve over time, the high prevalence of contraceptive method switching and discontinuation (Grady et al., 2002; Lessard et al., 2012; Vaughan et al., 2008) can also blur the direction of the relationship.

Part of the reverse causality is accounted for by including possible confounding factors in the statistical models (Frees, 2004; Taris, 2000). A number of socioeconomic characteristics (e.g., income, type of residence) and family characteristics (e.g., partner

status, number of children) have been linked to individuals' and couples' socioeconomic status, power, and contraceptive behavior in previous research. For example, those with a lower income are more likely to be lower educated, to have less spousal power, and to rely on less-effective reversible contraceptives (Martinez et al., 2006). Or, the cohabiting are usually not only characterized by a more-egalitarian division of housework (Dominguez-Folgueras, 2013), but also by a higher uptake of more-effective contraceptives (Sweeney et al., 2015). Controlling for these indicators reduces the chances of observing spurious associations and selection effects (Frees, 2004; Taris, 2000). In addition, I interpreted the observed associations with care and only refer to causal inference when theoretical arguments can be made.

I considered the options of making use of the available second wave of the GGS to further cancel out the possibility of reverse causation, as panel surveys have been proved useful in establishing the direction of causality (Frees, 2004). However, the reason for using only the first wave is twofold: the second wave currently includes fewer countries (to date, data has only been released for 8 of the 13 included countries), and respondents are asked about the physical possibility of having a child but not about sterilization specifically. It would be interesting for future research to incorporate multiple GGS waves and to test the extent to which contraception should be perceived as an outcome or a predictor of individuals' empowerment, couple dynamics, and the gender climate.

Proxy reports on partner and household characteristics

Ideally, research into how couple dynamics influence contraception should include information provided by both partners (Bauer & Kneip, 2013; Testa, 2012). The GGS unfortunately does not contain couple data, but did ask each partnered respondent about his/her partners' characteristics and the organization of their household. Hence, I relied on the respondents' proxy reports to operationalize their partners' educational level and employment status, and their households' division of domestic tasks and decision making. With regard to the two socioeconomic parameters, spousal proxy reports have been shown to offer relatively reliable information in comparison with self-reports (Alwin, 2007; Sudman, Bradburn, & Schwarz, 1996). The collection of "soft data", such as attitudes or behavior, is considered more problematic; greater measurement error occurs because it is subject to interpretation and likely to be colored by the respondent's own perceptions and opinions (Eeckhaut, 2012). Specifically for the division of housework, Kamo (2000) concludes that men's and women's reports are likely to diverge due to a combination of social desirability and resentment about doing the tasks. On the

one hand, husbands tend to overestimate their own contributions whereas wives may somewhat underestimate that of their husband. On the other hand, husbands overestimate their wives' share in shopping and paying bills. With regard to decision making, it has been shown that both men and women are inclined to report a more gender-stereotypical division of decisions in surveys – compared with, for instance, time diaries – instead of the real distribution, mainly if they are asked to recall decisions that might be made without much consideration (Muehlbacher, Hofmann, Kirchler, & Roland-Levy, 2009). I applied two strategies to handle possible discrepancies in partners' assessment of the organization of the household. First, I include a control variable for the gender of the respondent wherever necessary (Fuwa & Cohen, 2007). Second, the GGS has the advantage that it asks about housework and decision making in a relative way. Although this obscures specific interpretations of variation (e.g., it is unclear whether changes in the share of housework result from shifts in men's, women's, or both partners' contributions) (Marini & Shelton, 1993), this type of measurement produces less bias in partners' answers than, for instance, asking about absolute housework hours (Kamo, 2000).

It should be noted that the GGS also includes questions about the respondent's and his/her partner's childbearing desires. Except in Chapter 11 – the only chapter that radically starts off from a couple perspective without considering male or female individual-level characteristics independently – I did not make use of these proxy reports. This is because previous studies pinpoint substantial discrepancies between proxy reports and partners' self-reports with regard to fertility intentions (Reimondos, 2013; Testa, 2012). Empirical evidence from the Austrian and Australian GGS – these two country-specific surveys contain additional information collected directly from the partners – indicates that respondents tend to overestimate the level of partner agreement, or how much their partner wanted a child, respectively. Therefore, I consider childbearing desires as an individual rather than a couple characteristic in the four other empirical chapters.

In sum, I am aware that using proxy reports on partner and household characteristics involves certain limitations. At the same time, I think that the approach of the GGS can also be considered an important step forward in comparison with many other studies that thrive on a homogamy argument. These generally assume that partners have similar characteristics, often hold similar attitudes and values, and grow more alike because of shared experiences, which is seen as a justification for a unilateral focus on one partner's

characteristics and attitudes in order to study couple decisions (Jansen & Liefbroer, 2006).

Measuring contraceptive behavior

The measurement of contraceptive use as applied in this dissertation entails three important limitations. The first relates to shortcomings in the available data. The GGS asks all partnered respondents of reproductive age what contraceptive methods they are using or what they are doing to prevent pregnancy at the time. Although this question makes the dataset the most recent nationally representative, comparable source currently available on contraceptive use in Europe (United Nations, 2016), the inclusion of some additional questions would have been useful for a more profound interpretation of respondents' contraceptive behavior.

For instance, the survey does not provide information on the respondent's and his/her partner's preferences concerning contraception. This data would have enabled me – and other researchers – to have a better view on how to operationalize contraceptive practice for respondents who report the use of multiple methods (Frohwirth et al., 2016). Particularly for this dissertation, it would also have improved understanding of how power processes impact contraceptive decisions for two reasons. First, I could not determine whether partners agreed or disagreed on contraception and, in the case of the latter, which partner "won" the decision-making process. Recalling Weber's (1925 in Wallimann et al., 1977, p. 232-233) definition – "within a relationship, power means every chance (no matter whereon this chance is based) to carry through the own will (even against resistance)" – suggests that power in contraceptive decision making can be seen as a matter of the most powerful partner pursuing his or her interests. Previous studies indicate that men and women have different priorities and perceptions about methods, and that power can be applied to decide on which to use (Forste et al., 1995; Grady et al., 2010; Grady et al., 1999). Second, I was unable to make a distinction between contraceptive use and contraceptive responsibility. The use of a female contraceptive might point to women's control in the contraceptive domain, but does not necessarily do so. Overall, I tried to address this limitation by making assumptions on preferences based on literature, thereby acknowledging that contraception should be perceived as a "two-edged sword"; representing a source of empowerment for some, but a burden for others. When considering a couple's division of contraception, I stick to the terminology of "male methods" versus "female methods" rather than making any

suggestions about who is actually controlling it (e.g., by not referring to "male/female-*controlled* methods", or "male/female-*directed* methods").

Furthermore, the GGS specifically asks about measures for pregnancy prevention, but could have further asked the respondents to specify whether they started using the reported methods for contraceptive purposes only, or also for non-contraceptive purposes (da Silva, 2011). This is important because of the health benefits of a non-contraceptive nature related to birth control (Jones, 2011; Kavanaugh & Anderson, 2013). Condom use is widely recommended as a basic prevention measure against sexually transmitted infections (STIs), the pill is prescribed for cramps, menstrual pain, regulating menstruation, and treatment for acne, and continuous use of IUDs might reduce menstrual bleeding or stop it altogether. Hence, an important proportion of contraceptive users is currently not sexually active or even had never had sex[31] (Jones, 2011). This raises questions about the extent to which contraception can be considered a joint couple-decision, and to what extent contraceptive users had already made up their mind even before their partner came into the picture. Although the GGS question on the choice to undergo sterilization – "Have you been sterilized or have you had an operation that makes it impossible for you to have a child/more children?" (yes/no) – is not clear on whether this was for contraceptive or other reasons, we do have information about when the operation took place. In combination with the data on relationship duration, I could deduce whether the respondent or his/her partner had been sterilized during his/her current partnership or before.

The second limitation relates to the reliance on self-reported data for contraception. Although this type of measurement is a mainstay in contraceptive research, which is traditionally based on large-scale surveys, the approach should receive some specific attention given the potential for bias (Hall, White, Reame, & Westhoff, 2010; Stuart & Grimes, 2009). One important source of bias concerns social desirability (Stuart & Grimes, 2009). People are aware that consistent use of the pill is viewed more favorably than inconsistent use, and that the use of condoms is considered "better" in terms of disease prevention. This results in overreporting of effective contraceptive practice and underreporting of non-use. Another type of bias results from the discrepancies between men's and women's reports of contraceptive use. This is particularly relevant for those

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[31] Attention paid to contraceptive behavior among women who are not in a relationship is fairly recent (Darroch, 2008). Data collection on contraceptive use is usually limited to women in a union (United Nations, 2016); this is also the case in the GGS.

contraceptives that can be used without the partner being aware (e.g., pills, sterilization). Multiple validation studies performed in developing countries, often based on the Demographic and Health Survey – these surveys adopt a household approach and interview both partners (DHS, 2017) – have touched on this problem (e.g., Becker & Costenbader, 2001; Koffi, Adjiwanou, Becker, Olaolorun, & Tsui, 2012). Less attention has been paid to this bias in developed countries, which is likely to be due to the lack of couple data regarding contraception, combined with the unilateral focus on women's perspective regarding family planning (Almeling, 2015; Becker, 1996; Greene & Biddlecom, 2000). The GGS also does not contain couple data, but Table 13.1 gives an idea of the variation in contraceptive reporting by comparing the male and female samples for each empirical chapter. It appears that men are more likely to report non-use or reliance on male methods, whereas the female samples are characterized by higher percentages of female contraceptives. No significant differences are present with regard to the reporting of sterilization. In general, however, the difference rates are small (between 4.2% and 7.2% in Chapter 8, between 0.2% and 1.5% in Chapter 9, between 0.5% and 2.5% in Chapter 10, and between 0.5% and 3.8% in Chapter 11).

Unfortunately, I cannot rule out bias due to social desirability, but I do try to account for the small "gender bias" by controlling for the respondents' gender in all chapters (except in Chapter 12, which is limited to women only). This does not substantially affect the findings.

The third and final limitation concerns the fact that I did not include abortion as an option for fertility regulation or as a proxy for access to effective contraceptives (see Chapter 5, section 5.4 for more details). This might seem odd given the focus on CEE, a region that has been characterized by very high abortion rates for many decades and has a long history of abortion as the prime birth control method (Frejka, 2008a; Stloukal, 1999). Theoretical as well as methodological reasons underlie this choice. Theoretically, it is questionable whether it is correct to define abortion as another form of "contra"-ception given that abortion is only relied on after conception, and contraceptive measures are used to prevent conception from occurring in the first place. Accordingly, the two are considered distinct types of birth control and are also approached in that way in literature (Frejka, 2008a; Marston & Cleland, 2003). Moreover, the extent and direction to which abortion relates to contraceptive access is not straightforward; abortion and contraception might either act in opposite ways or might increase simultaneously (Marston & Cleland, 2003). Methodologically, it is an open secret that

Table 13.1 Comparison of contraceptive prevalence rates in the male and female samples per chapter

	Total sample (%)	Male sample (%)	Female sample (%)	Difference between male and female sample (%) [b]	Sign. [c]
Chapter 8 [a]					
Cooperative method	26.8	29.4	25.2	4.2	***
Medical method	53.1	48.6	55.8	-7.2	***
Chapter 9					
No method	23.9	24.7	23.2	1.5	**
Traditional method	11.5	10.8	12.1	-1.3	***
Modern method	64.6	64.5	64.7	-0.2	
Chapter 10					
No method	20.5	21	20	1	
Natural family planning	13.5	13	13.9	-0.9	
Barrier method	21.2	22.7	20.2	2.5	***
Short-acting female method	27	26.7	27.2	-0.5	
Long-acting female method	17.8	16.6	18.7	-2.1	***
Chapter 11					
No method	15.1	17	13.6	3.4	***
Male reversible method	9.2	10.3	8.4	1.9	*
Female reversible method	57.8	55.6	59.4	-3.8	**
Male permanent method	6.8	6.5	7	-0.5	
Female permanent method	11.1	10.6	11.5	-1	

Notes. The subsample in Chapter 12 only includes female respondents and is therefore not included in the table. [a] The percentages do not add up to 100 because the categories represent two separate dependent variables; [b] A negative value refers to a higher prevalence in the female sample whereas a positive value refers to a higher prevalence in the male sample; [c] z-score calculated by dividing the percentage difference by the standard error of the percentage difference. *** $p < .001$; ** $p < .01$; * $p < .05$

data on the incidence of abortion lacks reliability and is not consistently available across countries (Sedgh et al., 2016). Furthermore, the GGS does not ask about respondents' experience with abortion – which hindered the inclusion of this measurement at the individual level – and no data on abortion prevalence is available at the NUTS 1 level – which further hampered incorporation of the measurement as a proxy for access to effective contraceptives (or "ability") in Chapter 9.

In an effort to take *some* differences in contraceptive access into account, I applied another strategy: I made use of the information on respondents' urban or rural residency.

Urban or rural residency as a proxy for respondents' access to contraception

The level of access to effective contraceptive methods is considered key in people's contraceptive behavior. According to the European Parliamentary Forum on Population and Development (2017), proper access to contraceptives is linked to three major pillars: reimbursement, counselling, and prescription requirements (e.g., whether or not the use of emergency contraception requires a prescription). The IPPF European Network (2015) similarly stresses the importance of reimbursement schemes and the provision of individualized counselling and quality services, but further adds that access is also contingent on policy making and strategy, general awareness, sexuality education in schools, education and training of healthcare professionals and service providers, prevention of discrimination, and women's empowerment. In all, it is no surprise that contraceptive accessibility proves to be a complex construct.

I relied on the available indicator that comes closest to measuring accessibility at the individual level: whether the respondent is living in a rural or urban residence. Although there is no doubt that this measurement is not perfect to capture all variance in contraceptive access, other literature also uses it, given that empirical evidence shows that people living in urban areas have increased access to modern contraception, a wider range of available contraceptives, more information on contraception, and better access to reproductive health care professionals and specialized family planning, compared with those living in rural areas (IPPF European Network, 2015). The urbanity factor is often assumed to be a lower barrier in developed regions (Klijzing, 2000), but WE countries (e.g., Germany) and CEE countries (e.g., Bulgaria, Poland) still have important urban-rural gaps too (IPPF European Network, 2015). Accordingly, previous studies find a consistently positive association between urban settlement, and modern contraceptive

use and knowledge (IPPF European Network & UNFPA, 2012; Serbanescu & Seither, 2003; Westoff, 2005), a conclusion that is also found in my studies (the association between urbanity and contraceptive use is accounted for in Chapters 9, 10, and 12; the findings for the variable are however only shown in Chapter 9).

Contraception across the life course

The average European woman spends around three decades of her reproductive life trying to avoid pregnancy (Guttmacher Institute, 2008). From a life-course perspective, it seems unlikely that contraceptive practice remains similar across a woman's whole reproductive life cycle; instead, contraceptive strategies are subject to change, guided by both personal histories and experiences, and the broader historical time and place (Elder Jr., Johnson, & Crosnoe, 2003). Forrest (1993) identifies five different social and biological stages in women's reproductive lives (Forrest, 1993; Le Goff & Locatelli, 2005). The first phase starts at the menarche and ends at the first experience of sexual intercourse; it refers to the onset of the ability to have children. The second phase refers to the time between the first occasion of intercourse and marriage. In countries were marriage is no longer perceived as the sole context for childbearing, the end of this phase may also refer to the beginning of cohabitation. The third phase corresponds to the period between marriage/cohabitation and the first birth. In all three stages, the main goal of contraceptive use is to postpone childbearing, usually related to the desire to obtain a higher level of education, to launch a professional career, or to establish a stable home life first. The fourth phase starts at the first birth and ends at the time the desired family size is achieved. During this stage, contraception may particularly be used to space different births. The fifth and final phase runs from the attainment of the desired family size until menopause, and contraception is practiced to avoid or stop additional childbearing. Logically, not all women pass through each of the five stages – for instance someone who intends to remain childless – and some might move back and forth between them (Forrest, 1993).

The decisions to use specific contraceptive methods are closely linked to these different stages. Although the five stages relate to women's reproductive life cycle, it should be noted that men may also be affected by them when a decision on contraception has to be made. For instance, condom use is often a temporary solution largely concentrated in adolescence and in new, casual, or non-cohabiting relationships (Le Guen et al., 2015; Manlove, Welti, Wildsmith, & Barry, 2014; Manning et al., 2009). This has been linked to a lack of partner trust and concerns about STIs in these types of relationships.

Another example is the low use of IUDs among nulliparous women (Eeckhaut, Sweeney, et al., 2014; Haimovich, 2009). Interestingly, cross-national differences in the likelihood of uptake possibly point to higher use of this method type if the mean duration between marriage/cohabitation and the birth of the first child is longer[32] (Eeckhaut, Sweeney, et al., 2014). Lastly, not surprisingly, sterilization only becomes an option in the case of wishing to stop childbearing altogether.

The focus of the empirical chapters in this dissertation is limited to the final three phases in women's reproductive life cycle; subsamples were selected based on, among other things, ever having had sexual intercourse and having a partner at the time. Chapter 11 relies on a tighter selection that only includes respondents with no desire to have (additional) children. In other words, this chapter is limited to the fifth and final phase of the reproductive life course. Overall, attention is paid to differences in partner status and the number of children by taking these into account as control variables. All the results hold, irrespective of whether a respondent is in a non-resident partnership, cohabiting or married (Chapters 10 and 11 only distinguish between the cohabiting and the married, given their focus on the organization of the household), and of whether a respondent has no children, one child, two children, or three or more children. Nevertheless, it would be interesting to adopt an explicit life-course perspective in future contraception research in order to disentangle how contraceptive decision making changes across time for a couple. In this way, previous experiences can also be accounted for. To give one example, the accumulation of female investments in reproduction over time – by being pregnant, giving birth, using female methods, being primarily responsible for childcare, etc. – might shift the power balance to women's advantage when a decision on male versus female sterilization has to be made.

13.3 Implications for future research

The prime focus in previous studies about contraception centers on the individual – most often the woman – though these paradigms have proved insufficient to fully capture the underlying mechanisms behind differences in contraceptive use. Moreover, the major share of this research is empirically driven and lacks comprehensive theoretical framing (Almeling, 2015). The current thesis builds on and adds to recent scientific

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[32] This low uptake partly results from outdated clinical guidelines that recommend nulliparous women to not use IUDs (da Silva, 2011; Eeckhaut, Sweeney, et al., 2014).

developments that attempt to break away from this tradition, by criticizing the underlying notion of linearity in contraceptive efficacy, by approaching contraception as a social practice, and by incorporating a female, a male, a couple, and a contextual perspective on birth control. Based on my empirical findings, I consider four implications for future research.

First, I provide substantial evidence for men's participation in the contraceptive domain; men's and women's educational levels are equally important predictors for contraceptive use, and male as well as female characteristics account for the socioeconomic gradient in contraception. Accordingly, I believe that further inclusion of men in contraceptive research would result in significant steps forward in advancing knowledge of the contraceptive domain. At the same time, future research should go beyond the current focus on how men participate in contraceptive behavior by practicing withdrawal, using a condom, or undergoing a vasectomy – a focus that is also applied in the current dissertation – and should scrutinize alternative opportunities to capture men's involvement. Following the growing acknowledgment that men should be incorporated in the study domain, the understanding that partners – mainly the male partner – can participate in contraception in other ways than merely by using the method has become increasingly accepted (MacCorquodale, 1984). A first approach recognizes that couples can share contraceptive responsibility by improving each other's contraceptive use and reproductive health (Greene et al., 2006). If the female partner is using the method, the man could for example share in the financial costs of contraception, help to remind his partner to take the pill on a daily basis, or be emotionally supportive if his partner experiences adverse side effects (Campo-Engelstein, 2013; Ventola, 2014). A second approach pinpoints men's capacity to enhance and reinforce gender equality, by supporting women's reproductive roles and by transforming gender norms that constrain reproductive health and rights (Greene et al., 2006). This latter perspective takes men's and women's social positions into account, and the ways in which these may hinder the fulfillment of their reproductive roles. Empirical examination of these alternative ways of male involvement can help to overcome the important implications associated with male method use – which involves either the adoption of a less-effective form of contraception than female methods (i.e., withdrawal, the male condom), or the option of a "final" solution (i.e., vasectomy) – that do not necessarily relate to men's willingness to engage in the contraceptive domain, and can provide better insight into men's actual involvement.

Second, my research calls for a reconsideration of contraception as more than a mere product of its efficacy. To this end, the thesis provides multiple examples of how some well-established sociological (e.g., marital power, relative resources, gender theory) and demographical (e.g., ready-willing-able, human capital perspective, fertility research) bases can be applied to contraceptive behavior. These perspectives open up new directions from which to examine the topic, as they encourage scholars to examine contraception as a social practice. From a sociological point of view, it proves worthwhile to include contraception as an integral part of couples' gendered division of production and/or reproduction. Some scholars propose looking at contraception as another household task for which the devoted time, attention, stress and physical burden primarily falls on women's shoulders (Bertotti, 2013; Fennell, 2011). Others instead locate contraception within the domain of gendered reproduction, which should be embedded within theories that focus on childbirth and parenting, and their intertwinement with women's economic activities (Collins et al., 1993). Either way, contraception is handled as a decision outcome influenced by couple dynamics. My empirical results support this argument by revealing multiple pathways through which imbalances in partnerships shape contraceptive use; it is not only the differences in structural partner characteristics (i.e., occupational status), but also the differences in interactional processes (i.e., the division of housework and decision making) that lead to meaningful variations in contraceptive choice.

I encourage researchers to elaborate on these associations by further disentangling the power concept, and more specifically, paying particular attention to gender display in contraception, as this aspect remains largely untested here and in other studies. Though I recognize the importance of gendered roles, I mainly incorporate this idea by examining resources and the organization of the household. This approach, however, neglects the distinction between gender equality and gender equity. The former refers to the extent to which men's and women's outcomes in education, employment, wages, health, etc. are similar (McDonald, 2013). It assumes that men and women are equal in their access to scarce and valued resources in society (Chafetz, 1999), and that their rights, responsibilities, and opportunities are not contingent on whether they are male or female (International Labour Office, 2000). Gender equity is a more subtle and complex concept. It points to a plurality of normative ideas (Fraser, 1994), and allows for different outcomes for men and women, to the extent that they perceive these outcomes as fair and just (McDonald, 2013). This relates to the notion that men and

women behave according to socially constructed expectations about what is "gender-appropriate" behavior and what is not (West & Zimmerman, 1987).

The inclusion of the gender equity dimension is becoming more and more established in fertility research (McDonald, 2000a, 2000b, 2013), but has not yet permeated the study domain of contraception – notwithstanding a few exceptions (Grady et al., 2010; Shearer et al., 2005; Stolley, 1996). The concept has been measured in multiple ways. Some scholars approach it by means of gender role attitudes, given that changes in men's and women's structural opportunities are typically paralleled by – often more slowly and not equally distributed among social groups – altering attitudes (Lappegård et al., 2015; Ma, 2010). Alternatively, gender equity is operationalized as the perceived fairness of the division of unpaid housework and care. The organization of a household is often the result of a joint decision made in couples, for instance based on each partner's time schedules, which may lead to a justified perception of an unequal allocation (Lachance-Grzela & Bouchard, 2010; Neyer et al., 2013). The GGS provides some relevant information on both types of measurements, and could be a fruitful data source in this respect. It would be most promising, however, if future research could rely on couple data – in order to determine to what extent contraception should be considered a *joint* couple decision (e.g., Bauer & Kneip, 2013; Miller & Pasta, 1996; Testa, 2012) – and could incorporate the contraceptive preferences of both partners (e.g., Grady et al., 2010).

Through a demographical lens, it is widely recognized that contraception is a proximate determinant in fertility (Bongaarts, 1978, 2015; Bongaarts & Potter, 1983) or an important condition to understand the unprecedented changes in fertility during the previous century (Coale, 1973; Lesthaeghe & Vanderhoeft, 2001). To date, however, the close links between contraceptive use and other fertility behavior have not inspired many scholars to take a closer theoretical look at contraception in itself. Instead, they have largely focused on the timing of childbirth ("tempo") and the total number of children that people have ("quantum"), thereby paying particular attention to the postponement of childbearing (Balbo et al., 2013). This research into fertility behavior, backed by a rich tradition of frameworks based on either economic (e.g., human capital theory, reduction of uncertainty) or cultural (e.g., second demographic transition) theoretical underpinnings, might nevertheless yield important insights into how contraceptive decision making is adapted to decisions in other life domains, such as a person's career or desires concerning childbearing, and to the broader context in which people reside. I

consider Chapter 10 a successful attempt to apply an economic fertility perspective based on the reconciliation of work and family life to advance understanding of couples' use of less-effective or more-effective contraceptives. It would be interesting to see future research exploring alternative opportunities of expanding fertility frameworks to contraception. For instance, what is the respective role of fertility intentions and actual fertility behavior in understanding variations in contraceptive use? Do unemployment trends translate into more-effective contraceptive use, given that they are also associated with lower numbers of children and more postponement? Or, does a person's social network affect contraceptive use in similar ways to those in which it affects fertility behavior?

This examination of the possibilities to apply fertility frameworks to contraception leads to the third implication. The observation that literature on contraception is largely distinct from literature on fertility does not stand alone; most social scientific studies that consider reproduction are developed around one particular reproductive event, such as pregnancy, infertility, assisted reproduction, etc. (Almeling, 2015). Hence, according to Almeling (2015, p. 433), there has been little attention paid to reproduction as a process that spans the life course, although "reproductive events cannot be isolated from one another. Conceptualizing reproduction as a process focuses attention not on the particularities of X or Y reproductive event, but instead on the commonalities and differences across events (…) contributing to a fuller understanding and theorization of reproduction as a multilayered biological and social process that occurs over time". There are many potential avenues for future research in this respect. When examining contraceptive efficacy, it would for instance be worthwhile to take into account people considering undergoing an abortion in the case of contraceptive failure, or their potential previous experiences with abortion. Another example would be to shed light on the decision to proceed to male versus female sterilization by looking at men's and women's opinions of reproductive ageing, and their knowledge that women enter the menopause at a specific point in time. In addition to my earlier suggestion that future research would benefit from the adoption of a life-course perspective to examine contraceptive decision making, attention should also be paid to how contraception links to other reproductive "events" within a person's reproductive life course.

The last implication relates to my results showing that contraceptive decision making across European countries is embedded in diverging reproductive climates, which underscores that researchers should reflect on how their findings can best be

contextualized. First, in cross-national comparative European studies, scholars should be aware of the particularly distinct histories in post-communist countries. The prominent "East-West" divide that I find in contraception confirms previous research (Frejka, 2008a; Lesthaeghe, 2000; Troitskaia et al., 2009) and seems to apply to other public health issues as well (e.g., higher rates of heavy smoking or drinking, worse self-assessed health, higher mortality levels) (Carlson, 1998; Olsen & Dahl, 2007). Though part of the worse situation in CEE is rooted in the collapse of the communist system in the 1990s, other health differences were already present well before this and can be linked to how Soviet governance and governance in other European countries fundamentally differed (see Chapter 5) (Figueras, McKee, & Lessof, 2004; Frejka, 2008b). As this "East-West" line seems to explain significant health differences across Europe better than other typologies (Monden & de Graaf, 2013), it is astonishing how little attention cross-national research devotes to it. Second, in this focus on diverging overarching histories, scholars must not lose sight of the between-country differences within each region. I find substantial variation in contraceptive use among countries within the same region, which points to the necessity of in-depth study of country-specific situations. CEE countries are at different stages of health reform (Berdzuli et al., 2009), and both CEE and NWE countries display important variations in reproductive health policies (IPPF European Network, 2015). Third, in addition to addressing and mapping cross-national variations, in Chapters 9 and 12, I look for macro-level explanations for these variations, and demonstrate how part-time employment, secularization, and gender equality add to the story. Future research would benefit from further scrutiny of possible pathways in order to examine how the contextual level impacts couples' contraceptive use. The operationalization of macro indicators relating to sexual and reproductive health and rights (SRHR) is challenging given its complex nature and the lack of systematically collected and standardized data (da Silva, 2011). A useful starting point here, is the Contraception Atlas, which was launched very recently and summarizes information on various aspects of contraceptive access for all European countries (European Parliamentary Forum on Population & Development, 2017).

13.4 Implications for policy makers and health care professionals

Implications for policy makers

Contraceptive prevalence and unmet need for contraception are used as indicators to measure progress toward the Millennium Development Goals – the declaration was initially signed in September 2000 – and are currently considered as an "unfinished agenda", also in many European countries (United Nations, 2008, 2015a; WHO Europe, 2017). Comprehensive policy strategies are of crucial importance with regard to access to information about contraception and to services that provide birth control methods (IPPF European Network, 2015). However, many policy measures in European countries are scattered and limited, and only a few countries invest consistently in the development, implementation, and evaluation of a national policy concerning these matters. Most work needs to be done in the CEE region, as national policies on SRHR are generally low on the agenda, but important loopholes also remain in WE policies (e.g., in France, SRHR policies and strategies are not reviewed and renewed systematically). Germany is put forward as an example to others, because of its specific focus on family planning, fertility control, and effective contraceptives in SRHR policy, the involvement of multiple stakeholders (e.g., health care professionals, educational authorities) in the development of policy strategies, and the effective monitoring and evaluation of the implemented policy measures.

A recurrent theme in policy is the observation that there is still plenty of room for governments to drive down the costs of birth control and related medical services, for instance by means of reimbursement arrangements (European Parliamentary Forum on Population & Development, 2017; IPPF European Network, 2015). Accordingly, it is suggested that socioeconomic differences in contraceptive use are fueled by financial barriers to contraception (Eeckhaut & Sweeney, 2016; Mosher & Jones, 2010). In the countries under investigation here, however, I find hardly any evidence for the association between income and contraceptive use (Chapter 9). Without wanting to undermine the necessity for cost-lowering initiatives, my results generally draw more attention to the direct value and implications of being higher educated or having a paid job (i.e., how education and employment relate to a range of social competences, such as knowledge or communication skills), than to the indirect value of education and employment (i.e., how these acquirements translate into a particular income level) (Sen, 1997). In addition to the relevance of this individual empowerment, gender equality also

proves to be intimately tied to contraceptive practice. In what follows, I consider three sets of implications for policy makers that may be derived from these research findings: the need to improve the distribution of correct information among all groups in society, to advance contraceptive convenience, and to target SRHR as a component of gender equality policy.

The first set of issues relates to the enduring differences in how the lower and higher educated make contraceptive choices – with the former more often not using contraception and using natural family planning. This calls for continuing special attention being paid to educational policy; sexuality education is not only crucial in helping people to make informed choices about contraception during their years of formal education (e.g., in order to prevent teenage pregnancy, transmission of STIs), but also provides foundations for sexual attitudes and behavior during adult life (IPPF European Network, 2015; WHO Regional Office for Europe and BZgA, 2010). Notwithstanding that sexuality education is mandatory by law in the majority of countries in the European Union, the between-country variation in content and quality is astonishing (Beaumont & Maguire, 2013). Nordic and Benelux countries have the highest quality of sexuality education, whereas programs in CEE countries suffer from major deficits or are simply nonexistent. The WHO (2010) recommends NWE countries to now aim at standards for sexuality education at the European level rather than at the county level – which is the case today – in order to fill this "East-West" gap. Moreover, it incites policy makers, and educational and health authorities to strive for a holistic approach to sexuality education that provides "unbiased, scientifically correct information on all aspects of sexuality and, at the same time, helps them [children and young people] to develop the skills to act upon this information" (WHO Regional Office for Europe and BZgA, 2010, p. 5). This entails a break with the traditional, unilaterally negative focus on the potential risks of sexuality, with its emphasis on problem solving (WHO Regional Office for Europe and BZgA, 2010). A sexuality education matrix that summarizes a broad range of sexuality issues, and what should be taught at specific ages, has been developed to provide policy makers and other authorities with more information on the comprehensive topic of sexuality and to assure guidance in the formulation of curricula. Moreover, policy makers can do better in terms of approaching sexuality education as a lifelong process, and thereby, paying specific attention to what are termed "vulnerable populations", such as those with a limited educational background (IPPF European Network, 2015; WHO Regional Office for Europe and BZgA, 2010). To date, only a few countries have implemented targeted sexuality

education measures for people at risk of social or economic exclusion. In Germany, for instance, this is achieved by a constellation of both governmental and non-governmental organizations and counseling centers that provide information on sexuality and contraception customized to the needs of different educational groups (Brock-schmidt & Hessling, 2015).

With regard to the distribution of information on contraception, it is also the case that (potential) contraceptive users should be protected from erroneous messages and "tall stories". The focus should be on contraceptive *choice* among the wide range of alternatives (see below), and on the awareness that each method entails its own benefits and pitfalls (Johnson et al., 2013). Some medical contraceptives have been linked to particular health risks, for example blood clotting or strokes due to contraceptive pills (Bajos, Rouzaud-Cornabas, et al., 2014; Furedi, 1999; Watkins, 2012) or increased infection rates due to IUDs (Kaneshiro & Aeby, 2010; Roepke & Schaff, 2014), but unambiguous evidence is still lacking. The media is, however adept at the sporadic publication of articles concerning these potential health risks, for instance related to use of the pill – "Woman blames her pill for her disability and attacks Bayer [a pharmaceutical company]" (La Libre, 2012), "Deadly risk of pill used by 1m women: Every GP in Britain told to warn about threat from popular contraceptive" (Manning & Adams, 2014) – or other consequences linked to the contraception type – "When I stopped using the pill, my libido reached unprecedented heights" (Kennis, 2016). Though there is no doubt that contraceptive users should be aware of any risk related to the method they use, questions can be raised about whether the information is correct and how it is distributed (Webb, 1996). Empirical evidence gathered in multiple countries after diverse pill scares in the media shows a substantial fall in use of the pill, paralleled by an increase in unwanted pregnancies and abortion rates; ironically, abortion also involves an elevated risk of venous thromboembolism (Bajos, Rouzaud-Cornabas, et al., 2014; Cohen, 1996; Osterkorn & Schramm, 1998; Webb, 1996). Hence, journalists – but also policy makers, who are sometimes keen to instantly react on these media debates (e.g., by halting reimbursement for risky contraceptives, as was the case in France in 2013 (Bajos, Rouzaud-Cornabas, et al., 2014)) – should be aware of the far-reaching consequences these messages might have (Osterkorn & Schramm, 1998). This is especially as it has been shown that the most vulnerable groups, who are already characterized by less-effective contraceptive practice in general, are particularly inclined to respond to this information by abandoning the pill in favor of natural family planning (Bajos, Rouzaud-Cornabas, et al., 2014).

The second set of implications relates to the necessity of enhancing contraceptive convenience. The greater use of natural family planning (which takes no preparation) and the lower uptake of female reversible methods (which require visits to a doctor for a prescription or for inserting the contraceptive device) by those with a lower level of education can be linked to their prioritization of a "quick fix" to prevent pregnancy. Goldman and Lakdawalla (2005) suggest that the lower educated are more likely to prefer health behavioral options that require a minimum of effort. Furthermore, in Chapter 10, I argue that being in paid employment might serve as an indication of time availability, given that households in which the female partner is employed and works more hours report a higher likelihood of "time-effective" contraceptive use (i.e., methods that do not require a prescription, such as condoms, or methods that are long-lasting, such as IUDs).

The voices criticizing the fact that access to medical contraception is artificially and unnecessarily difficult, and that it is no longer grounded in today's scientific reality and women's everyday life, have become louder in recent years (Barot, 2008). The argument is raised that some de-medicalization of birth control – by eliminating all immaterial medical interventions or requirements – would advance consistent and effective contraceptive use. Of course, certain contraceptives will always need medical intervention (e.g., IUDs), but this is not necessarily true for others. The (not legally binding) decision of the European Commission in 2015 to make emergency contraception available without a prescription was followed by most European countries (European Consortium for Emergency Contraception, 2015; European Parliamentary Forum on Population & Development, 2017), and can be considered a first step in increasing the convenience of obtaining this form of contraception (Barot, 2008). Advocates now argue for the next step: to make contraceptive pills and other forms of hormonal contraception, such as the vaginal ring, the patch and injectables – the use of which is perceived as low-risk in terms of adverse health consequences – more readily available by substituting the current prescription model for either pharmacy access (i.e., the prescription can be obtained directly from a pharmacist), behind-the-counter access (i.e., no prescription is necessary, but there are additional restrictions by gender, age, etc. which the pharmacy personnel should ensure are met), or over-the-counter access (i.e., no prescription is necessary, and there are no restrictions) (Barot, 2008; Rafie et al., 2016). This would, of course, involve some additional, focused education and training for pharmacists (Rafie, Haycock, Rafie, Yen, & Harper, 2012).

It should be noted that oral contraceptives are already available without prescription in the major proportion of countries worldwide, but that this is mainly restricted to low-income countries (Grindlay, Bums, & Grossman, 2013). This trend has only recently begun to emerge in high-income countries. Nowadays, there are several European countries in which women do not need a prescription to obtain hormonal contraceptives (e.g., Ukraine) or in which women can obtain the pill informally without prescription via pharmacies or other retail outlets (e.g., Armenia, Moldova, the Russian Federation) (European Parliamentary Forum on Population & Development, 2017; OCs OTC Working Group, 2017). However, there are many other European countries where hormonal contraception is only available on prescription. Some of these (e.g., Belgium) have already taken measures to reduce the number of doctor visits required to obtain a prescription; instead of prescriptions for three months of use, women can be given prescriptions for one year.

Studies carried out in U.S. contexts show that many women are supportive of obtaining hormonal contraceptives directly at the pharmacy and would make use of the option (Grossman et al., 2013; Landau, Tapias, & McGhee, 2006), and that a removal of prescription requirements leads to increased levels of contraceptive continuation (Potter et al., 2011). Moreover, scholars conclude that women can accurately screen themselves for contraindications to contraceptive pill use; comparisons between medical checklists completed by women and by their health care provider indicate more than 90 percent agreement (Grossman et al., 2008; Shotorbani, Miller, Blough, & Gardner, 2006). Nevertheless, mixed support for such an alternative arrangement is found among health care providers (Howard, Wall, & Strickland, 2013; Rafie et al., 2012; Rafie et al., 2016). One concern raised is that the elimination of the need for a visit to a doctor might jeopardize access to other preventive health services that are sometimes included at the same time (e.g., breast examination, pap smear tests, STI screening) (Barot, 2008; Rafie et al., 2016). Another concern, which is shared by other parties, is that removing prescription requirements might prompt an increase in the costs of hormonal contraceptives, which would impede easy access for disadvantaged groups in particular, given the trend for health insurance companies being less likely to cover nonprescription medication than prescription drugs (Barot, 2008; McIntosh, Wahlin, Grindlay, Batchelder, & Grossman, 2013).

I believe it worthwhile for policy makers to at least *explore* the possibilities to further enhance contraceptive convenience and to expand the increased access to emergency

contraception to other hormonal methods, however, of course, anticipating possible unintended consequences, paying specific attention to vulnerable groups, learning from experiences in other countries or regions (e.g., Oregon and California recently passed laws that allow pharmacists to prescribe hormonal methods), and investing in better sexuality education. Progestin-only pills are considered an excellent candidate for the first implementation of a model based on pharmacy access, behind-the-counter access, or over-the-counter access, given that they involve fewer health risks compared with combined oral contraceptives (McIntosh et al., 2013).

The third and final set of implications concerns the improvement of gender equality, in relation to SRHR. My research shows that couples who live in contexts characterized by increased female rights display more-effective contraceptive use. Here, increased rights is measured by part-time employment (NUTS 1; Chapter 9), which enables couples to reconcile work and family more easily, the gender gap in income and political participation (NUTS 1; Chapter 9), and the Gender Inequality Index (a composite of gender equality measures in reproductive health, empowerment, and economic participation; country level; Chapter 12).

Since 1957, when the Treaty of Rome introduced the principle of equal pay for men and women, gender equality has been a key principle in the European Union (European Commission, 2007). The focal points are, among other things, "equal treatment concerning access to work, training, promotions and working conditions, including equal pay and social security benefits, as well as guaranteed rights to parental leave". Efforts to promote women's position range from the advancement of their status in the economy and politics (e.g., by increasing their participation, including in decision-making positions, for instance by means of quota) to anti-discrimination laws (e.g., to reduce gender pay gaps or pension gaps) (European Commission, 2015; European Commission's Network to Promote Women in Decision-making in Politics and the Economy, 2011). In addition, the uneven gender burden in the home and the family has been problematized, which sparked government incentives to encourage men's involvement in housework (e.g., by allocating leave specifically for fathers; Hirschmann, 2015).

In this regard, the peculiar situation in CEE should be remembered: during the Soviet period, gender equality was implemented top-down, and women were encouraged to go out to work by offering well-developed and affordable childcare services, and generous social benefits for mothers and families (see Chapter 5) (David, 1999a; Oláh & Fratczak,

2004; Szelewa & Polakowski, 2008). Many aspects of this dual-earner system were wiped out after the fall of the system, which caused a return to the home sphere for many women (David & Skilogianis, 1999; Schmitt & Trappe, 2010). As in Western countries, efforts to increase gender equality thereafter were largely concentrated on women's re-engagement in paid work, on their participation in politics, and on a more equal distribution of care work (Pascall & Lewis, 2004).

Overall, advancements have been made: for the better in some domains (e.g., women's gains in education), but less so in others (e.g., women's remaining lower likelihood to be in paid employment, and their higher likelihood to work less hours, to have lower hourly wages, and to carry the heaviest burden in unpaid labor). Accordingly, there is still work to be done to reach genuine gender equality (European Commission, 2016; Hirschmann, 2015).

Moreover, the IPPF European Network (2015) encourages policy makers to expand their focus on female labor force participation and work-life balance in gender policies, to include SRHR. The close links between women's empowerment and contraceptive efficacy, which accords with part of my research results, call for explicit reference in gender equality policy to how access to effective contraceptives can help women to realize their personal and professional aspirations. To date, only a minority of EU countries integrate SRHR – included in which is access to contraception – as a component of gender equality policy. France is one of these exceptions, and includes reimbursement for contraception and abortion, and communication campaigns about informed contraceptive choice in their gender policies. In the overall emphasis on the enhancement of women's positions, however, men's vital role in gender equality and SRHR is often overlooked (Greene et al., 2006). By acknowledging men as significant partners, they can be called on to support women's reproductive health; examples are attention paid to women's *and* men's reproductive roles during sexuality education, or encouraging men to attend reproductive health services together with their partner (e.g., in contraceptive counselling (see below), or in teaching them equally well when their partner is pregnant) (Greene et al., 2006; WHO Regional Office for Europe and BZgA, 2010). By acknowledging men as potential contraceptive users, and thereby describing condoms as a worthy effective contraceptive, the question may also be raised as to why condoms – relied on by 11 percent of the contraceptive users in NWE, and by 35 percent in CEE (United Nations, 2015b) – are still not reimbursed (Bajos, Rouzaud-Cornabas, et al., 2014; Sonfeld, 2015).

Implications for health care professionals

The introduction and rising dominance of the medical contraceptive model since the 1960s engendered a shift from contraceptive control located within the couple (i.e., given the predominant reliance on cooperative methods such as natural family planning or condoms) to control imposed by the medical establishment (Wajcman, 1991); women contact either a gynecologist or a general practitioner with regard to obtaining information on contraceptive methods, getting a prescription for birth control pills, or inserting an IUD or another method (da Silva, 2011). As a consequence, health care professionals are important gatekeepers in women's access to contraception (David, 1999b; IPPF European Network, 2015). Accordingly, empirical evidence suggests that the majority of women relies on a method recommended by their health care provider (Bitzer et al., 2012; de Irala, Osorio, Carlos, & Lopez-del Burgo, 2011; Merckx, Donders, Grandjean, de Sande, & Weyers, 2011; Skouby, 2004).

This pinpoints the importance of implementing credible and qualitative guidelines on contraception for health care professionals – which are currently lacking or inconsistent in many European countries – and of tackling religious opposition (e.g., in Lithuania, Poland, and Romania) and reconsidering the right to object (e.g., in Poland, the "conscience clause" allows doctors to refuse prescribing or fitting contraceptives to protect their religious, moral, or ethical beliefs) (IPPF European Network, 2015). Today, contraceptive choices still too often echo the preferences of doctors – who tend to focus on a limited range of methods they consider best – rather than those of the woman or the couple (Ventola, 2014). Contrary to doctors prescriptions related to a medical diagnosis, prescribing contraceptives for fertility regulation is (usually) not a response to a disease, but should instead reflect the patient's lifestyle and expectations. Some prefer to take hormonal pills because these are considered reliable, effective, and easy to use, whereas others are wary of using hormones (Cheung & Free, 2005; Johnson et al., 2013; Picavet et al., 2011). Some are attracted by the "forgettable" nature of long-acting reversible methods, but others consider it unnatural that these contraceptives cause irregular menstrual bleeding, or might reduce or stop it altogether (Cheung & Free, 2005; Grimes, 2009). The use of standardized educational leaflets during contraceptive counselling is seen as an easily applicable tool to objectify information given to women (Merckx et al., 2011). In addition, the recent launch of the online "*anticonceptiewijzer*" ("contraception indicator") in Belgium provides a prime and concrete example of an initiative that aims to raise awareness on the multitude of contraceptive methods, and

offers some guidance in contraceptive decision making that may inform couples before visiting a doctor (SENSOA, 2017). A short online questionnaire is provided and questions are asked about the amount of time the respondent wants to devote to contraception (answer categories include "only when I have sex", "once", "every few years", "several times a year", "weekly or monthly", and "daily"), about menstruation (answer categories include "I want to control my menstruation myself", "I want to menstruate every month", and "I want to minimize the chances of unexpected bleeding"), about privacy (answer categories include "my partner should not know about the method", or "my parents should not know about the method), about health care providers (answer categories include "I do not want a contraceptive that needs to be inserted by a doctor", or "I do not want to go to the doctor for the contraceptive method I use"), about childbearing desires (answer categories include "I want to be able to become pregnant quickly whenever I stop using contraception"), and about hormones (answer categories include "I do not want to use any hormones"). Depending on the answer categories that are ticked, the website provides the respondent with the contraceptive method(s) that suits his/her preferences best, ranked according to effectiveness.

The omnipresence of contraceptive failure, method switching, or discontinuation of use due to method-related reasons further stresses how an adjustment of contraception choice to lifestyle can serve as a strategy to reduce the number of unintended pregnancies (Bajos, Leridon, Goulard, Oustry, & Job-Spira, 2003; Frost & Darroch, 2008; Grady et al., 2002; Guttmacher Institute, 2008; Moreau et al., 2006; Moreau et al., 2007; Vaughan et al., 2008). Hence, rather than blaming women's recklessness in the case of unintended pregnancy, doctors may question the inadequacy between the prescribed contraceptive methods and the patient's lifestyle (Ventola, 2014).

Furthermore, the results from my empirical chapters emphasize the importance of men's characteristics and couple dynamics in this contraceptive decision-making process. This shows the necessity of stepping away from medicine's predominant view of contraception as the competence of women only, rather than of couples (Ventola, 2014). Contraceptive consultations generally still revolve around the interaction between the female patient and the doctor, and usually do not include the male partner. As a consequence, contraception is perceived as a woman's choice, which translates into a predominant focus on female options for fertility regulation and not on men's, and neglects alternative types of involvement of the male partner. The integration of men in

contraceptive counselling – either in terms of their presence, or by also discussing their desires and preferences – might provide health care professionals with a more complete picture of what couples are prioritizing when choosing a contraceptive method, and can be taken as an opportunity to attune both partners' preferences. Moreover, the treatment of men as an integral part of contraceptive decision making has proved a fruitful strategy to encourage more-effective contraceptive behavior (Becker, 1996; Edwards, 1994; Greene & Biddlecom, 2000). In this regard, we should remember the SENSOA (2017) questionnaire. Though the organization aimed to reach both women and men, the questions are also mainly directed at female respondents (e.g., by asking about menstruation). A more explicit focus on men's potential roles in contraception should be considered a useful extension to the questionnaire.

In the end, contraception often remains the woman's choice. Many women prefer to be in charge when it comes to birth control and their partners let them be, and – in most cases – it is the woman who must visit the doctor anyway (Fennell, 2011). This should, however, not stop health care providers from encouraging their female patients to bring their partner along if they want to, given that many women seem hesitant to take this initiative themselves (Ventola, 2014).

13.5 Concluding remarks

It is said that sociologists take pride in making a problem out of the "taken-for-granted" notions in society (van Teijlingen, 2005). This dissertation is no different. That effective contraceptive practice is considered the default option in NWE countries and is quickly gaining ground in many CEE countries, should not distract our attention from the fact that many couples struggle in the search for a method that aligns with their preferences and lifestyle. I show how contraceptive behavior is shaped by a disparate collection of aspects. I extend the female socioeconomic gradient in contraception to men as well. I demonstrate that imbalances in partner characteristics and in the organization of a household are likely to result in a higher uptake of contraceptive alternatives for the commonly used female reversible methods, either because of heterogamy, or because of gendered power. I find that contraceptive behavior is embedded within the broader context of family policy, normative principles, and gender equality. Accordingly, I recommend that researchers further scrutinize men's involvement in the contraceptive domain, to cross-pollinate between disciplines and reproductive events, and to contextualize contraceptive decision making. I advise policy makers to invest in

comprehensive sexuality education, careful information distribution, and contraceptive convenience, and to integrate an SRHR component into gender equality policies. I suggest that health care providers offer and discuss the full range of contraceptive choices with their patients, and create opportunities for men to attend contraceptive and other reproductive counselling. However, most important of all, I believe, is the overarching recognition that more than half a century after its introduction, there is more to the pill than women's freedom alone.

REFERENCE LIST

Abbott, P., & Wallace, C. (1990). *An introduction to sociology: Feminist perspectives.* London and New York: Routledge.

Aboim, S. (2010). Gender cultures and the division of labour in contemporary Europe: A cross-national perspective. *Sociological Review, 58*(2), 171-196.

Acock, A. C. (2005). Working with missing values. *Journal of Marriage and Family, 67*(4), 1012-1028.

Adsera, A. (2006). Religion and changes in family-size norms in developed countries. *Review of Religious Research, 47*(3), 271-286.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior.* Englewood Cliffs: Prentice-Hall.

Albarracin, D., Johnson, B. T., Fishbein, M., & Muellerleile, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: A meta-analysis. *Psychological Bulletin, 127*(1), 142-161.

Allen, S. M., & Hawkins, A. J. (1999). Maternal gatekeeping: Mothers' beliefs and behaviors that inhibit greater father involvement in family work. *Journal of Marriage and the Family, 61*(1), 199-212.

Allison, P. D. (1999). Comparing logit and probit coefficients across groups. *Sociological Methods & Research, 28*(2), 186-208.

Allison, P. D. (2002). *Missing data.* California: Sage Publications.

Almeling, R. (2015). Reproduction. *Annual Review of Sociology, 41*, 423-442.

Alwin, D. F. (2007). *Margins of error. A study of reliability in survey measurement.* Hoboken: John Wiley & Sons.

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders: DSM-5.* Washington: American Psychiatric Association.

Amirkhanian, Y. A. (2012). Review of HIV vulnerability and condom use in Central and Eastern Europe. *Sexual Health, 9*(1), 34-43.

Anderson, J. E., Jamieson, D. J., Warner, L., Kissin, D. M., Nangia, A. K., & Macaluso, M. (2012). Contraceptive sterilization among married adults: National data on who chooses vasectomy and tubal sterilization. *Contraception, 85*(6), 552-557.

Annandale, E., & Clark, J. (1996). What is gender? Feminist theory and the sociology of human reproduction. *Sociology of Health & Illness, 18*(1), 17-44.

Baban, A. (1999). Romania. In H. P. David (Ed.), *From abortion to contraception. A resource to public policies and reproductive behavior in Central and Eastern Europe from 1917 to the present* (pp. 191-221). Westport and London: Greenwood Press.

Bachrach, P., & Baratz, M. S. (1963). Decisions and nondecisions: An analytical framework. *American Political Science Review, 57*(3), 632-642.

Bailey, M. J. (2006). More power to the pill: The impact of contraceptive freedom on women's life cycle labor supply. *Quarterly Journal of Economics, 121*(1), 289-320.

Bailey, M. J. (2010). "Momma's got the pill": How Anthony Comstock and Griswold v. Connecticut shaped US childbearing. *American Economic Review, 100*(1), 98-129.

Bajos, N., Le Guen, M., Bohet, A., Panjo, H., & Moreau, C. (2014). Effectiveness of family planning policies: The abortion paradox. *Plos One, 9*(3), 1-7.

Bajos, N., Leridon, H., Goulard, H., Oustry, P., & Job-Spira, N. (2003). Contraception: From accessibility to efficiency. *Human Reproduction, 18*(5), 994-999.

Bajos, N., Rouzaud-Cornabas, M., Panjo, H., Bohet, A., & Moreau, C. (2014). The French pill scare: Towards a new contraceptive model. *Population & Societies, 511*, 1-4.

Balbo, N., Billari, F. C., & Mills, M. (2013). Fertility in advanced societies: A review of research. *European Journal of Population, 29*(1), 1-38.

Barone, M. A., Johnson, C. H., Luick, M. A., Teutonico, D. L., & Magnani, R. J. (2004). Characteristics of men receiving vasectomies in the United States, 1998-1999. *Perspectives on Sexual and Reproductive Health, 36*(1), 27-33.

Barot, S. (2008). Making the case for a 'contraceptive convenience' agenda. *Guttmacher Policy Review, 11*(4), 11-16.

Batalova, J. A., & Cohen, P. N. (2002). Premarital cohabitation and housework: Couples in cross-national perspective. *Journal of Marriage and Family, 64*(3), 743-755.

Bauer, G., & Kneip, T. (2013). Fertility from a couple perspective: A test of competing decision rules on proceptive behaviour. *European Sociological Review, 29*(3), 535-548.

Bauer, G., & Kneip, T. (2014). Dyadic fertility decisions in a life course perspective. *Advances in Life Course Research, 21*, 87-100.

Bean, F. D., Williams, D. G., Opitz, W., & Burr, J. A. (1987). Sociodemographic and marital heterogamy: Influences on the decision for voluntary sterilization. *Journal of Marriage and the Family, 49*(2), 465-476.

Beaumont, K., & Maguire, M. (2013). *Policies for sexuality education in the European Union.* Brussels: European Union.

Becker, G., & Nachtigall, R. D. (1992). Eager for medicalization: The social production of infertility as a disease. *Sociology of Health & Illness, 14*(4), 456-471.

Becker, G. S. (1960). An economic analysis of fertility. In Universities-National Bureau (Ed.), *Demographic and economic change in developed countries* (pp. 209-240). Columbia: Columbia University Press.

Becker, G. S. (1991). *A treatise on the family. Enlarged edition.* Cambridge and London: Harvard University Press.

Becker, S. (1996). Couples and reproductive health: A review of couple studies. *Studies in Family Planning, 27*(6), 291-306.

Becker, S., & Costenbader, E. (2001). Husbands' and wives' reports of contraceptive use. *Studies in Family Planning, 32*(2), 111-129.

Begall, K., & Mills, M. (2011). The impact of subjective work control, job strain and work-family conflict on fertility intentions: A European comparison. *European Journal of Population, 27*(4), 433-456.

Bell, S. E. (1990). Sociological perspectives on the medicalization of menopause. *Annals of the New York Academy of Sciences, 592*, 173-178.

Bentley, R., & Kavanagh, A. M. (2008). Gender equity and women's contraception use. *Australian Journal of Social Issues, 43*(1), 65-80.

Berdzuli, N., Rossi, E., & Zlidar, V. (2009). *Improving family planning pre-service education: Experience from the Eastern Europe and Eurasia region.* Virginia: Europe and Eurasia Regional Family Planning Activity for the U.S. Agency for International Development.

Berk, S. F. (1985). *The gender factory. The apportionment of work in American households.* New York and London: Plenum Press.

Bernheimer, C. (1985). *In Dora's Case: Freud-Hysteria-Feminism.* New York: Colombia University Press.

Bertotti, A. M. (2013). Gendered divisions of fertility work: Socioeconomic predictors of female versus male sterilization. *Journal of Marriage and Family, 75*(1), 13-25.

Bianchi, S. M., Milkie, M. A., Sayer, L. C., & Robinson, J. P. (2000). Is anyone doing the housework? Trends in the gender division of household labor. *Social Forces, 79*(1), 191-228.

Bitzer, J., Gemzell-Danielsson, K., Roumen, F., Marintcheva-Petrova, M., van Bakel, B., & Oddens, B. J. (2012). The CHOICE study: Effect of counselling on the selection of combined hormonal contraceptive methods in 11 countries. *European Journal of Contraception and Reproductive Health Care, 17*(1), 65-78.

Blood, R. O., & Wolfe, D. M. (1960). *Husbands and wives: The dynamics of married living*. Glencoe: Free Press.

Blossfeld, H. P., & Huinink, J. (1991). Human capital investments or norms of role transition? How women's schooling and career affect the process of family formation. *American Journal of Sociology, 97*(1), 143-168.

Blumberg, R. L. (1984). A general theory of gender stratification. *Sociological Theory, 2*, 23-101.

Blumberg, R. L., & Coleman, M. T. (1989). A theoretical look at the gender balance of power in the American couple. *Journal of Family Issues, 10*(2), 225-250.

Bongaarts, J. (1978). A framework for analyzing proximate determinants of fertility. *Population and Development Review, 4*(1), 105-132.

Bongaarts, J. (2015). Modeling the fertility impact of the proximate determinants: Time for a tune-up. *Demographic Research, 33*(19), 535-559.

Bongaarts, J., & Potter, R. G. (1983). *Fertility, biology, and behavior. An analysis of the proximate determinants*. New York and London: Academic Press.

Bongaarts, J., & Westoff, C. F. (2000). The potential role of contraception in reducing abortion. *Studies in Family Planning, 31*(3), 193-202.

Braveman, P. A., Cubbin, C., Egerter, S., Chideya, S., Marchi, K. S., Metzler, M., & Posner, S. (2005). Socioeconomic status in health research. One size does not fit all. *Journal of the American Medical Association, 294*(22), 2879-2888.

Breen, R., & Jonsson, J. O. (2000). Analyzing educational careers: A multinomial transition model. *American Sociological Review, 65*(5), 754-772.

Brewster, K. L., & Rindfuss, R. R. (2000). Fertility and women's employment in industrialized nations. *Annual Review of Sociology, 26*, 271-296.

Brines, J. (1993). The exchange value of housework. *Rationality and Society, 5*(3), 302-340.

Brines, J. (1994). Economic dependency, gender, and the division of labor at home. *American Journal of Sociology, 100*(3), 652-688.

Broberg, G., & Roll-Hansen, N. (2005). *Eugenics and the welfare state. Sterilization policy in Denmark, Sweden, Norway, and Finland*. East Lansing: Michigan State University Press.

Brock-schmidt, L., & Hessling, A. (2015). Sexuality education in Germany: An effective intervention to support the sexual and reproductive health (SRH) of people across the lifespan. *EntreNous, 82*, 20-21.

Browne, W. J., Subramanian, S. V., Jones, K., & Goldstein, H. (2005). Variance partitioning in multilevel logistic models that exhibit overdispersion. *Journal of the Royal Statistical Society, 168*(Part 3), 599-613.

Brubaker, S. J., & Dillaway, H. E. (2009). Medicalization, natural childbirth and birthing experiences. *Sociology Compass, 3*(1), 31-48.

Brzozowska, Z. (2015). Female education and fertility under state socialism in Central and Eastern Europe. *Population, 70*(4), 731-769.

Buis, M. (2015). Logistic regression: Why we often can do what we think we can do. Working paper. Retrieved from http://www.maartenbuis.nl/wp/odds_ratio_2.3 .pdf

Bumpass, L. L., Thomson, E., & Godecker, A. L. (2000). Women, men, and contraceptive sterilization. *Fertility and Sterility, 73*(5), 937-946.

Campo-Engelstein, L. (2013). Gender norms and contraceptive trust. *Albany Law Journal of Science and Technology, 23*(3), 581-623.

Carlson, D. L., Miller, A. J., Sassler, S., & Hanson, S. (2016). The gendered division of housework and couples' sexual relationships: A reexamination. *Journal of Marriage and Family, 78*(4), 975-995.

Carlson, E., & Lamb, V. (2001). Changes in contraceptive use in Bulgaria, 1995-2000. *Studies in Family Planning, 32*(4), 329-338.

Carlson, E., & Omori, M. (1998). Fertility regulation in a declining state socialist economy: Bulgaria, 1976-1995. *International Family Planning Perspectives, 24*(4), 184-187.

Carlson, P. (1998). Self-perceived health in East and West Europe: Another European health divide. *Social Science & Medicine, 46*(10), 1355-1366.

CDC, & ORC Macro (2003). *Reproductive, maternal and child health in Eastern Europe and Eurasia: A comparative report.* Atlanta and Calverton: Division of Reproductive Health, and ORC Macro.

Center for Reproductive Rights (2017). The world's abortion laws map. Retrieved from http://worldabortionlaws.com/map/

Chafetz, J. S. (1990). *Gender equity. An integrated theory of stability and change.* Newbury Park: Sage Publications.

Chafetz, J. S. (1991). The gender division of labor and the reproduction of female disadvantage. Toward an integrated theory. In R. L. Blumberg (Ed.), *Gender, family and economy: The triple overlap* (pp. 74-94). Newbury Park: Sage Publications.

Chafetz, J. S. (1999). *Handbook of the sociology of gender.* New York, London, Dordrecht and Moscow: Kluwer Academic/Plenum Publishers.

Chafetz, J. S. (2001). Theoretical understandings of gender. A third of a century of feminist thought in sociology. In J. H. Turner (Ed.), *Handbook of sociological theory* (pp. 613-631). New York: Kluwer Academic/Plenum Publishers.

Cheung, E., & Free, C. (2005). Factors influencing young women's decision making regarding hormonal contraceptives: A qualitative study. *Contraception, 71*(6), 426-431.

Chokr, N. N. (1992). Feminist perspectives on reproductive technologies: The politics of motherhood. *Technology in Society, 14*(3), 317-333.

Christiaens, W., & Bracke, P. (2014). Work-family conflict, health services and medication use among dual- income couples in Europe. *Sociology of Health & Illness, 36*(3), 319-337.

Christiaens, W., Nieuwenhuijze, M. J., & de Vries, R. (2013). Trends in the medicalisation of childbirth in Flanders and the Netherlands. *Midwifery, 29*(1), E1-E8.

Clark, R. (2006). Three faces of women's power and their reproductive health: A cross-national study. *International Review of Modern Sociology, 32*(1), 35-52.

Clarke, P. (2008). When can group level clustering be ignored? Multilevel models versus single-level models with sparse data. *Journal of Epidemiology and Community Health, 62*(8), 752-758.

Cleland, J. (2009). Contraception in historical and global perspective. *Best Practice & Research in Clinical Obstetrics & Gynaecology, 23*(2), 165-176.

Cliquet, R., & Lodewijckx, E. (1986). The contraceptive transition in Flanders. *European Journal of Population, 2*(1), 71-84.

Coale, A. (1973). The demographic transition reconsidered. In IUSSP (Ed.), *International Population Conference Liège 1973* (Vol. 1, pp. 53-72). Liege: IUSSP.

Cockerham, W. C. (2005). Health lifestyle theory and the convergence of agency and structure. *Journal of Health and Social Behavior, 46*(1), 51-67.

Cohen, J. (1996). Introduction. In J. Cohen (Ed.), *Oral contraceptives and cardiovascular disease. An analysis of the recent discussions on the safety of the pill* (pp. 9-12). New York and London: The Parthenon Publishing Group.

Coleman, L. M., & Testa, A. (2008). Sexual health knowledge, attitudes and behaviours: Variations among a religiously diverse sample of young people in London, UK. *Ethnicity & Health, 13*(1), 55-72.

Collins, R., Chafetz, J. S., Blumberg, R. L., Coltrane, S., & Turner, J. H. (1993). Toward an integrated theory of gender stratification. *Sociological Perspectives, 36*(3), 185-216.

Coltrane, S. (2000). Research on household labor: Modeling and measuring the social embeddedness of routine family work. *Journal of Marriage and the Family, 62*(4), 1208-1233.

Comaroff, J. (1977). Conflicting paradigms of pregnancy: Managing ambiguity in antenatal encounters. In A. G. Davis & G. Horobin (Eds.), *Medical encounters: The experience of illness and treatment* (pp. 115-134). London: Croom Helm.

Conrad, P. (1992). Medicalization and social control. *Annual Review of Sociology, 18*, 209-232.

Cooke, L. P. (2004). The gendered division of labor and family outcomes in Germany. *Journal of Marriage and Family, 66*(5), 1246-1259.

Cooke, L. P. (2009). Gender equity and fertility in Italy and Spain. *Journal of Social Policy, 38*(1), 123-140.

Corijn, M., Liefbroer, A. C., & Gierveld, J. D. (1996). It takes two to tango, doesn't it? The influence of couple characteristics on the timing of the birth of the first child. *Journal of Marriage and the Family, 58*(1), 117-126.

Corrin, C. (1994). Women's politics in 'Europe' in the 1990s. *Women's Studies International Forum, 17*(2-3), 289-297.

Cromwell, R. E., & Olson, D. H. L. (1975). *Power in families*. New York and London: Wiley.

Cutler, D. M., & Lleras-Muney, A. (2006). Education and health: Evaluating theories and evidence. *NBER Working Paper Series, 12352*.

Cutler, D. M., & Lleras-Muney, A. (2010). Understanding differences in health behaviors by education. *Journal of Health Economics, 29*(1), 1-28.

da Silva, M. O. (2011). The reproductive health report. The state of sexual and reproductive health within the European Union. *The European Journal of Contraception and Reproductive Health Care, 16*(Suppl. 1), S1-S70

Dalla Zuanna, G., De Rose, A., & Racioppi, F. (2005). Low fertility and limited diffusion of modern contraception in Italy during the second half of the twentieth century. *Journal of Population Research, 22*(1), 21-48.

Darroch, J. E. (2008). Male fertility control - Where are the men? *Contraception, 78*(4), S7-S17.

David, H. P. (1999a). *From abortion to contraception. A resource to public policies and reproductive behavior in Central and Eastern Europe from 1917 to the present*. Westport and London: Greenwood Press.

David, H. P. (1999b). Overview. In H. P. David (Ed.), *From abortion to contraception. A resource to public policies and reproductive behavior in Central and Eastern Europe from 1917 to the present* (pp. 3-22). Westport and London: Greenwood Press.

David, H. P., & Skilogianis, J. (1999). The woman question. In H. P. David (Ed.), *From abortion to contraception. A resource to public policies and reproductive behavior in Central and Eastern Europe from 1917 to the present* (pp. 39-47). Westport and London: Greenwood Press.

Davis, S. N., & Greenstein, T. N. (2013). Why study housework? Cleaning as a window into power in couples. *Journal of Family Theory & Review, 5*(2), 63-71.

Davis, S. N., Greenstein, T. N., & Marks, J. P. G. (2007). Effects of union type on division of household labor: Do cohabiting men really perform more housework? *Journal of Family Issues, 28*(9), 1246-1272.

de Beauvoir, S. (1953 [1949]). *The second sex*. London: Jonathan Cape.

de Irala, J., Osorio, A., Carlos, S., & Lopez-del Burgo, C. (2011). Choice of birth control methods among European women and the role of partners and providers. *Contraception, 84*(6), 558-564.

De Luccie, M. F. (1995). Mothers as gatekeepers: A model of maternal mediators of father involvement. *Journal of Genetic Psychology, 156*(1), 115-131.

De Rose, A., Racioppi, F., & Zanatta, A. L. (2008). Italy: Delayed adaptation of social institutions to changes in family behaviour. *Demographic Research, 19*(19), 665-703.

Del Boca, D. (2002). The effect of child care and part-time opportunities on participation and fertility decisions in Italy. *Journal of Population Economics, 15*(3), 549-573.

Delgado, M., Meil, G., & Lopez, F. Z. (2008). Spain: Short on children and short on family policies. *Demographic Research, 19*(27), 1059-1104.

Dereuddre, R., Buffel, V., & Bracke, P. (2017). Power and the gendered division of contraceptive use in Western European couples. *Social Science Research, 64*, 263-276.

Dereuddre, R., Van de Putte, B., & Bracke, P. (2016). Ready, willing, and able: Contraceptive use patterns across Europe. *European Journal of Population, 32*(4), 543-573.

Dereuddre, R., Van de Velde, S., & Bracke, P. (2016). Gender inequality and the "East-West" divide in contraception: An analysis at the individual, the couple, and the country level. *Social Science & Medicine, 161*, 1-12.

Deschner, A., & Cohen, S. A. (2003). Contraceptive use is key to reducing abortion worldwide. *The Guttmacher Report on Public Policy, 6*(4), 7-10.

Devereux, C. (2014). Hysteria, feminism, and gender revisited: The case of the second wave. *English Studies in Canada, 40*(1), 19-45.

DHS (2004). The DHS wealth index. *DHS Comparative Reports, No. 6*.

DHS (2013). Standard recode manual for DHS 6. Retrieved from http://www.dhsprogram.com/pubs/pdf/DHSG4/Recode6_DHS_22March2013_DHSG4.pdf

DHS (2017). The DHS program. Demographic and Health Surveys. Retrieved from http://dhsprogram.com/data/

Diehl, C., Koenig, M., & Ruckdeschel, K. (2009). Religiosity and gender equality: Comparing natives and Muslim migrants in Germany. *Ethnic and Racial Studies, 32*(2), 278-301.

Dismore, L., Van Wersch, A., & Swainston, K. (2016). Social constructions of the male contraception pill: When are we going to break the vicious circle? *Journal of Health Psychology, 21*(5), 788-797.

Dominguez-Folgueras, M. (2013). Is cohabitation more egalitarian? The division of household labor in five European countries. *Journal of Family Issues, 34*(12), 1623-1646.

Dommermuth, L., Klobas, J., & Lappegård, T. (2011). Now or later? The theory of planned behavior and timing of fertility intentions. *Advances in Life Course Research, 16*(1), 42-53.

Dorbritz, J., & Fleischhacker, J. (1999). The former German Democratic Republic. In H. P. David (Ed.), *From abortion to contraception. A resource to public policies and reproductive behavior in Central and Eastern Europe from 1917 to the present* (pp. 121-143). Westport and London: Greenwood Press.

Dorman, E., & Bishai, D. (2012). Demand for male contraception. *Expert Review of Pharmacoeconomics & Outcomes Research, 12*(5), 605-613.

Drago, R., Black, D., & Wooden, M. (2004). Female breadwinner families: Their existence, persistence and sources. *Discussion Paper Series, IZA DP No. 1308*.

Easterlin, R. A. (1975). An economic framework for fertility analysis. *Studies in Family Planning, 6*(3), 54-63.

Edwards, S. R. (1994). The role of men in contraceptive decision-making: Current knowledge and future implications. *Family Planning Perspectives, 26*(2), 77-82.

Eeckhaut, M. C. W. (2012). *The consequences of heterogamy in contemporary society: A methodological, conceptual, and empirical study [Doctoral dissertation].* Ghent: Ghent University.

Eeckhaut, M. C. W. (2015). Marital status and female and male contraceptive sterilization in the United States. *Fertility and Sterility, 103*(6), 1509-1515.

Eeckhaut, M. C. W., Stanfors, M. A., & Van de Putte, B. (2014). Educational heterogamy and the division of paid labour in the family: A comparison of present-day Belgium and Sweden. *European Sociological Review, 30*(1), 64-75.

Eeckhaut, M. C. W., & Sweeney, M. M. (2016). The perplexing links between contraceptive sterilization and (dis)advantage in ten low-fertility countries. *Population Studies, 70*(1), 39-58.

Eeckhaut, M. C. W., Sweeney, M. M., & Gipson, J. D. (2014). Who is using long-acting reversible contraceptive methods? Findings from nine low-fertility countries. *Perspectives on Sexual and Reproductive Health, 46*(3), 149-155.

Eeckhaut, M. C. W., Van de Putte, B., Gerris, J. R. M., & Vermulst, A. A. (2013). Analysing the effect of educational differences between partners: A methodological/theoretical comparison. *European Sociological Review, 29*(1), 60-73.

Ehrenreich, B., & English, D. (1977). *Complaints and disorders: The sexual politics of sickness (2nd ed.).* New York: The Feminist Press.

Elder Jr., G. H., Johnson, M. K., & Crosnoe, R. (2003). The emergence and development of life course theory. In J. T. Mortimer & M. J. Shanahan (Eds.), *Handbook of the life course* (pp. 3-19). New York: Kluwer Academic Publishers.

Ellingsaeter, A. L., & Leira, A. (2006). *Politizing parenthood in Scandinavia. Gender relations in welfare states.* Bristol: The Policy Press.

EngenderHealth (2002). Law and policy. In EngenderHealth (Ed.), *Contraceptive sterilization: Global issues and trends* (pp. 87-106). New York: EngenderHealth.

Esping-Andersen, G. (2009). *The incomplete revolution: Adapting to women's new roles.* Cambridge: Polity Press.

Esping-Andersen, G., & Billari, F. C. (2015). Re-theorizing family demographics. *Population and Development Review, 41*(1), 1-31.

EU, GEPLAC, & Trends, G. E. (2004). Georgian economic trends. *Quarterly Review, No. 4.*

Euro-Peristat Project with SCPE and EUROCAT (2013). European perinatal health report. The health and care of pregnant women and babies in Europe in 2010. Retrieved from https://www.tno.nl/media/1975/european_perinatal_health_report_2010.pdf

Eurofound (2007). Part-time work in Europe. Retrieved from https://www.eurofound.europa.eu/observatories/eurwork/comparative-information/part-time-work-in-europe

EuroHIV (2002). *HIV/AIDS surveillance in Europe. End-year report 2001. No. 66*. Saint-Maurice: Institute de Veille Sanitaire.

EuroHIV (2007). *HIV/AIDS surveillance in Europe. End-year report 2006. No. 75*. Saint-Maurice: Institute de Veille Sanitaire.

European Centre for Disease Prevention and Control/WHO Regional Office for Europe (2016). *HIV/AIDS surveillance in Europe 2015*. Stockholm: European Centre for Disease Prevention and Control.

European Commission (2007). 50 years of EU gender equality law. Retrieved from http://europa.eu/rapid/press-release_MEMO-07-426_en.htm

European Commission (2015). *Strategic engagement for gender equality 2016-2019*. Luxembourg: Publications Office of the European Union.

European Commission. (2016). *Report on equality between women and men 2015*. Luxembourg: Publications Office of the European Union.

European Commission's Network to Promote Women in Decision-making in Politics and the Economy (2011). The quota-instrument: Different approaches across Europe. Working paper. Retrieved from http://ec.europa.eu/justice/gender-equality/files/quota-working_paper_en.pdf

European Consortium for Emergency Contraception (2015). Emergency contraception in Europe. Retrieved from http://www.ec-ec.org/emergency-contraception-in-europe/what-is-emergency-contraception/

European Institute for Gender Equality (2015). *Gender Equality Index 2015. Measuring gender equality in the European Union 2005-2012*. Italy: European Institute for Gender Equality.

European Parliamentary Forum on Population & Development (2017). Contraception atlas. Tracking access to modern contraception. Retrieved from http://www.contraceptioninfo.eu

European Roma Rights Centre (2016). *Sterilisation and its consequences for Romani women in the Czech Republic (1966-2016)*. Budapest: European Roma Rights Centre.

Eurostat (2015a). Employment by full-time/part-time, sex and NUTS 2 regions. Retrieved from http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfst_r_lfe2eftpt&lang=en

Eurostat (2015b). Involuntary part-time employment as percentage of the total part-time employment, by sex and age. Retrieved from http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsa_eppgai&lang=en

Eurostat (2015c). NUTS classification. The hierarchical categorisation of EU territories and regions. Retrieved from https://www.destatis.de/Europa/EN/Methods/Classifications/OverviewClassification_NUTS.html

Eurostat (2015d). Total fertility rate. Retrieved from http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsdde220

Fagan, C., & Rubery, J. (1996). The salience of the part-time divide in the European Union. *European Sociological Review, 12*(3), 227-250.

Family Planning Association (2010). Contraception: Past, present and future. Retrieved from http://www.fpa.org.uk/sites/default/files/contraception-past-present-and-future-factsheet-november-2010.pdf

Family Planning Association (2011). A history of family planning services. Retrieved from http://www.fpa.org.uk/sites/default/files/a-history-of-family_planning-services-october-2011.pdf

Federal State Statistic Service ROSSTAT (2012). Reproductive Health Survey Russia 2011. Executive summary. Retrieved from https://www.cdc.gov/reproductivehealth/global/publications/surveys/russia/russia-survey-2011-exec-sum.pdf

Fehring, R. J., & Ohlendorf, J. (2007). The influence of religiosity on contraceptive use and abortion in the United States. *Life and Learning, XVII*, 399-414.

Fennell, J. L. (2011). Men bring condoms, women take pills. Men's and women's roles in contraceptive decision making. *Gender & Society, 25*(4), 496-521.

Ferge, Z. (1997). Women and social transformation in Central-Eastern Europe. The 'old left' and the 'new right'. *Czech Sociological Review, 5*(2), 159-178.

Ferrarini, T., & Sjoberg, O. (2010). Social policy and health: Transition countries in a comparative perspective. *International Journal of Social Welfare, 19*, S60-S88.

Ferree, M. M. (1991). The gender division of labor in two-earner marriages. Dimensions of variability and change. *Journal of Family Issues, 12*(2), 158-180.

Ferrera, M. (1996). The southern model of welfare in social Europe. *Journal of European Social Policy, 6*(1), 17-37.

Festy, P., & Prioux, F. (2002). *An evaluation of the Fertility and Family Surveys project*. New York and Geneva: United Nations.

Feyrer, J., Sacerdote, B., & Stern, A. D. (2008). Will the stork return to Europe and Japan? Understanding fertility within developed nations. *Journal of Economic Perspectives, 22*(3), 3-22.

Figert, A. E. (2005). Premenstrual syndrome as scientific and cultural artifact. *Integrative Physiological and Behavioral Science, 40*(2), 102-113.

Figueras, J., McKee, M., & Lessof, S. (2004). Overview. In J. Figueras, M. McKee, J. Cain, & S. Lessof (Eds.), *Health systems in transition: Learning from experience* (pp. 13-31). WHO.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading: Addison-Wesley Publishing Company.

Fisher, K. (2000). Uncertain aims and tacit negotiation: Birth control practices in Britain, 1925-50. *Population and Development Review, 26*(2), 295-317.

Fokkema, T., Kveder, A., Hiekel, N., Emery, T., & Liefbroer, A. C. (2016). Generations and Gender Programme Wave 1 data collection: An overview and assessment of sampling and fieldwork methods, weighting procedures, and cross-sectional representativeness. *Demographic Research, 34*(18), 498-524.

Ford, K., Sohn, W., & Lepkowski, J. (2001). Characteristics of adolescents' sexual partners and their association with use of condoms and other contraceptive methods. *Family Planning Perspectives, 33*(3), 100-105, 132.

Forrest, J. D. (1993). Timing of reproductive life stages. *Obstetrics and Gynecology, 82*(1), 105-111.

Forrest, J. D., & Fordyce, R. R. (1993). Women's contraceptive attitudes and use in 1992. *Family Planning Perspectives, 25*(4), 175-179.

Forste, R., Tanfer, K., & Tedrow, L. (1995). Sterilization among currently married men in the United-States, 1991. *Family Planning Perspectives, 27*(3), 100-107, 122.

Foucault, M. (1978). *The history of sexuality. Volume I: An introduction*. New York: Pantheon Books.

Fraser, N. (1994). After the family wage: Gender equity and the welfare state. *Political Theory, 22*(4), 591-618.

Frees, E. W. (2004). *Longitudinal and panel data: Analysis and applications for the social sciences*. Cambridge: Cambridge University Press.

Frejka, T. (2008a). Birth regulation in Europe: Completing the contraceptive revolution. *Demographic Research, 19*(5), 73-84.

Frejka, T. (2008b). Determinants of family formation and childbearing during the societal transition in Central and Eastern Europe. *Demographic Research, 19*(7), 139-170.

Frejka, T., & Sobotka, T. (2008). Fertility in Europe: Diverse, delayed and below replacement. *Demographic Research, 19*(3), 15-45.

Frejka, T., Sobotka, T., Hoem, J. M., & Toulemon, L. (2008). Summary and general conclusions: Childbearing trends and policies in Europe. *Demographic Research, 19*(2), 5-13.

Frejka, T., & Westoff, C. F. (2008). Religion, religiousness and fertility in the US and in Europe. *European Journal of Population, 24*(1), 5-31.

Frohwirth, L., Blades, N., Moore, A. M., & Wurtz, H. (2016). The complexity of multiple contraceptive method use and the anxiety that informs it: Implications for theory and practice. *Archives of Sexual Behavior, 45*(8), 2123-2135.

Frost, J. J., & Darroch, J. E. (2008). Factors associated with contraceptive choice and inconsistent method use, United States, 2004. *Perspectives on Sexual and Reproductive Health, 40*(2), 94-104.

Furedi, A. (1999). The public health implications of the 1995 'pill scare'. *Human Reproduction Update, 5*(6), 621-626.

Fuwa, M. (2004). Macro-level gender inequality and the division of household labor in 22 countries. *American Sociological Review, 69*(6), 751-767.

Fuwa, M., & Cohen, P. N. (2007). Housework and social policy. *Social Science Research, 36*(2), 512-530.

Gabe, J., Bury, M., & Elston, M. A. (2004). *Key concepts in medical sociology*. London, Thousand Oaks, and New Dehli: Sage Publications.

Gakidou, E., & Vayena, E. (2007). Use of modern contraception by the poor is falling behind. *Plos Medicine, 4*(2), 381-389.

Gauthier, A. H. (2007). The impact of family policies on fertility in industrialized countries: A review of the literature. *Population Research and Policy Review, 26*(3), 323-346.

Geist, C., & Cohen, P. N. (2011). Headed toward equality? Housework change in comparative perspective. *Journal of Marriage and Family, 73*(4), 832-844.

GGP (2016). Welcome to the GGP. Retrieved from http://www.ggp-i.org

Glasier, A. F. (2010). Acceptability of contraception for men: A review. *Contraception, 82*(5), 453-456.

Glasier, A. F., Anakwe, R., Everington, D., Martin, C. W., van der Spuy, Z., Cheng, L., . . . Anderson, R. A. (2000). Would women trust their partners to use a male pill? *Human Reproduction, 15*(3), 646-649.

Goldman, D. P., & Lakdawalla, D. (2005). A theory of health disparities and medical technology. *Contributions to Economic Analysis & Policy, 4*(1), 1-30.

Goldscheider, C., & Mosher, W. D. (1991). Patterns of contraceptive use in the United-States: The importance of religious factors. *Studies in Family Planning, 22*(2), 102-115.

Goldscheider, F. (2000). Men, children and the future of the family in the third millennium. *Futures, 32*(6), 525-538.

Goldscheider, F., Bernhardt, E., & Lappegård, T. (2014). The second half of the gender revolution in Sweden: Will it strengthen the family? *Domestic Gender Equality and Modern Family Patterns Working Paper Series, EQUAL WP 07.*

Goldscheider, F., Olah, L. S., & Puur, A. (2010). Reconciling studies of men's gender attitudes and fertility: Response to Westoff and Higgins. *Demographic Research, 22*(8), 189-197.

Grady, W. R., Billy, J. O. G., & Klepinger, D. H. (2002). Contraceptive method switching in the United States. *Perspectives on Sexual and Reproductive Health, 34*(3), 135-145.

Grady, W. R., Klepinger, D. H., & Billy, J. O. G. (1993). The influence of community characteristics on the practice of effective contraception. *Family Planning Perspectives, 25*(1), 4-11.

Grady, W. R., Klepinger, D. H., Billy, J. O. G., & Cubbins, L. A. (2010). The role of relationship power in couple decisions About contraception in the US. *Journal of Biosocial Science, 42*(3), 307-323.

Grady, W. R., Klepinger, D. H., & Nelson-Wally, A. (1999). Contraceptive characteristics: The perceptions and priorities of men and women. *Family Planning Perspectives, 31*(4), 168-175.

Grady, W. R., Tanfer, K., Billy, J. O. G., & Lincoln-Hanson, J. (1996). Men's perceptions of their roles and responsibilities regarding sex, contraception and childrearing. *Family Planning Perspectives, 28*(5), 221-226.

Gray-Little, B., & Burks, N. (1983). Power and satisfaction in marriage: A review and critique. *Psychological Bulletin, 93*(3), 513-538.

Greene, M. E., & Biddlecom, A. E. (2000). Absent and problematic men: Demographic accounts of male reproductive roles. *Population and Development Review, 26*(1), 81-115.

Greene, M. E., Mehta, M., Pulerwitz, J., Wulf, D., Bankole, A., & Singh, S. (2006). Involving men in reproductive health: Contributions to development. Background paper to the report Public choices, private decisions: Sexual and reproductive health and the Millennium Development Goals. Retrieved from http://www.unmillenniumproject.org/documents/Greene_et_al-final.pdf

Greenstein, T. N. (2000). Economic dependence, gender, and the division of labor in the home: A replication and extension. *Journal of Marriage and the Family, 62*(2), 322-335.

Greil, A. L., & McQuillan, J. (2010). "Trying" times: Medicalization, intent, and ambiguity in the definition of infertility. *Medical Anthropology Quarterly, 24*(2), 137-156.

Gribaldo, A., Judd, M. D., & Kertzer, D. I. (2009). An imperfect contraceptive society: Fertility and contraception in Italy. *Population and Development Review, 35*(3), 551-584.

Grimes, D. A. (2009). Forgettable contraception. *Contraception, 80*(6), 497-499.

Grindlay, K., Bums, B., & Grossman, D. (2013). Prescription requirements and over-the-counter access to oral contraceptives: a global review. *Contraception, 88*(1), 91-96.

Grossman, D., Fernandez, L., Hopkins, K., Amastae, J., Garcia, S. G., & Potter, J. E. (2008). Accuracy of self-screening for contraindications to combined oral contraceptive use. *Obstetrics and Gynecology, 112*(3), 572-578.

Grossman, D., Grindlay, K., Li, R., Potter, J. E., Trussell, J., & Blanchard, K. (2013). Interest in over-the-counter access to oral contraceptives among women in the United States. *Contraception, 88*(4), 544-552.

Gupta, J. A. (2000). *New reproductive technologies, women's health and autonomy: Freedom or dependency?* Thousand Oaks: Sage Publications.

Gupta, S. (2007). Autonomy, dependence, or display? The relationship between married women's earnings and housework. *Journal of Marriage and Family, 69*(2), 399-417.

Gustafsson, S. (2005). Having kids later. Economic analyses for industrialized countries. *Review of Economics of the Household, 3*(1), 5-16.

Gustafsson, S., & Worku, S. (2005). Assortative mating by education and postponement of couple formation and first birth in Britain and Sweden. *Review of Economics of the Household, 3*(1), 91-113.

Guttmacher Institute (2008). Improving contraceptive use in the United States. *In Brief, No. 1,* 1-8.

Haimovich, S. (2009). Profile of long-acting reversible contraception users in Europe. *European Journal of Contraception and Reproductive Health Care, 14*(3), 187-195.

Hakim, C. (2002). Lifestyle preferences as determinants of women's differentiated labor market careers. *Work and Occupations, 29*(4), 428-459.

Hall, K. S. (2012). The health belief model can guide modern contraceptive behavior research and practice. *Journal of Midwifery & Womens Health, 57*(1), 74-81.

Hall, K. S., White, K. O., Reame, N., & Westhoff, C. (2010). Studying the use of oral contraception: A review of measurement approaches. *Journal of Womens Health, 19*(12), 2203-2210.

Halstead, V., De Santis, J., & Williams, J. (2016). Relationship power in the context of heterosexual intimate relationships. A conceptual development. *Advances in Nursing Science, 39*(2), E31-E43.

Harvey, S. M., Bird, S. T., & Branch, M. R. (2003). A new look at an old method: The diaphragm. *Perspectives on Sexual and Reproductive Health, 35*(6), 270-273.

Hausman, R., Tyson, L. D., & Zahidi, S. (2012). *The Global Gender Gap report.* Cologny/Geneva: World Economic Forum.

Heinemann, K., Saad, F., Wiesemes, M., White, S., & Heinemann, L. (2005). Attitudes toward male fertility control: results of a multinational survey on four continents. *Human Reproduction, 20*(2), 549-556.

Hemminki, E., Rasimus, A., & Forssas, E. (1997). Sterilization in Finland: From eugenics to contraception. *Social Science & Medicine, 45*(12), 1875-1884.

Hendrickx, J., Degraaf, N. D., Lammers, J., & Ultee, W. (1993). Models for status inconsistency and mobility: A comparison of the approaches by Hope and Sobel with the mainstream square additive model. *Quality & Quantity, 27*(4), 335-352.

Henshaw, S. K., Singh, S., & Haas, T. (1999). Recent trends in abortion rates worldwide. *International Family Planning Perspectives, 25*(1), 44-48.

Hirschmann, N. J. (2015). New frontiers: What should the next 'big thing' in gender equality policy be? Equality, freedom and the sexual division of labour. In F. Bettio & S. Sansonetti (Eds.), *Visions for gender equality* (pp. 12-15). Luxembourg: Publication Office of the European Union.

Hoem, J. M. (2008). The impact of public policies on European fertility. *Demographic Research, 19*(10), 249-259.

Hoffman, L. W., & Hoffman, M. L. (1973). The value of children to parents. In J. T. Fawcett (Ed.), *Psychological perspectives on population* (pp. 19-76). New York: Basic Books.

Hoffman, L. W., Thornton, A., & Manis, J. D. (1978). The value of children to parents in the United States. *Journal of Population, 1*(2), 91-131.

Houle, J. N. (2011). The psychological impact of intragenerational social class mobility. *Social Science Research, 40*(3), 757-772.

Howard, D. L., Wall, J., & Strickland, J. L. (2013). Physician attitudes toward over the counter availability for oral contraceptives. *Maternal and Child Health Journal, 17*(10), 1737-1743.

Hox, J. J. (2010). *Multilevel analysis. Techniques and applications (2nd ed.).* New York: Routledge.

Hubbard, R. (1990). *The politics of women's biology.* New Brunswick, New Jersey, and London: Rutgers University Press.

Huber, L. R. B., Hogue, C. J., Stein, A. D., Drews, C., Zieman, M., King, J., & Schayes, S. (2006). Contraceptive use and discontinuation: Findings from the contraceptive history, initiation, and choice study. *American Journal of Obstetrics and Gynecology, 194*(5), 1290-1295.

Hubert, M., Bajos, N., & Sandfort, T. (1998). *Sexual behavior and HIV/AIDS in Europe: Comparisons of national surveys.* London and New York: Routledge.

Human Fertility Database (2017). The Human Fertility database. Retrieved from http://www.humanfertility.org/cgi-bin/main.php

Iacovou, M., & Tavares, L. P. (2011). Yearning, learning, and conceding: Reasons men and women change their childbearing intentions. *Population and Development Review, 37*(1), 89-123.

Illich, I. (1976). *Medical nemesis. The expropriation of health.* New York: Pantheon Books.

Inhorn, M. C., Tjornhoj-Thomsen, T., Goldberg, H., & la Cour Mosegaard, M. (2009). *Reconceiving the second sex: Men, masculinity and reproduction.* New York and Oxford: Berghahn Books.

Institute of Statistics, Institute of Public Health, & ICF Macro (2010). *Albania Demographic and Health Survey 2008-09.* Tirana: Institute of Statistics, Institute of Public Health and ICF Macro.

International Labour Office (2000). *ABC of women workers rights and gender equality.* Geneva: International Labour Office.

IPPF European Network (2013). *Barometer of women's access to modern contraceptive choice in 10 EU countries.* Brussels: IPPF European Network.

IPPF European Network. (2015). *Barometer of women's access to modern contraceptive choice in 16 EU countries. Extended.* Brussels: IPPF European Network.

IPPF European Network, & UNFPA (2012). *Key factors influencing contraceptive use in Eastern Europe and Central Asia. Findings from a qualitative study in 7 countries and recommendations for improving access to modern contraception in the region*. Brussels: IPPF European Network and UNFPA.

Janevic, T., Sarah, P. W., Leyla, I., & Elizabeth, B. H. (2012). Individual and community level socioeconomic inequalities in contraceptive use in 10 Newly Independent States: a multilevel cross-sectional analysis. *International Journal for Equity in Health, 11*(69).

Jansen, M., & Liefbroer, A. C. (2006). Couples' attitudes, childbirth, and the division of labor. *Journal of Family Issues, 27*(11), 1487-1511.

Janta, B. (2014). Caring for children in Europe. How childcare, parental leave and flexible working arrangements interact in Europe. Retrieved from http://ec.europa.eu/social/BlobServlet?docId=15974&langId=en

Johnson-Hanks, J. (2002). On the modernity of traditional contraception: Time and the social context of fertility. *Population and Development Review, 28*(2), 229-249.

Johnson, S., Pion, C., & Jennings, V. (2013). Current methods and attitudes of women towards contraception in Europe and America. *Reproductive Health, 10*(7), 1-9.

Jones, J., Mosher, W. D., & Daniels, K. (2012). Current contraceptive use in the United States, 2006–2010, and changes in patterns of use since 1995. *National Health Statistics Reports, 60*, 1-25.

Jones, R. K. (2011). *Beyond birth control: The overlooked benefits of oral contraceptive pills*. New York: Guttmacher Institute.

Jusot, F., Or, Z., & Sirven, N. (2012). Variations in preventive care utilisation in Europe. *European Journal of Ageing, 9*(1), 15-25.

Kamo, Y. (2000). "He said, she said": Assessing discrepancies in husbands' and wives' reports on the division of household labor. *Social Science Research, 29*(4), 459-476.

Kaneshiro, B., & Aeby, T. (2010). Long-term safety, efficacy, and patient acceptability of the intrauterine Copper T-380A contraceptive device. *International Journal of Women's Health, 2*, 211-220.

Karlson, K. B. (2011). Multiple paths in educational transitions: A multinomial transition model with unobserved heterogeneity. *Research in Social Stratification and Mobility, 29*(3), 323-341.

Kaufman, G. (1998). Sterilisation of married couples: Husband versus wife sterilisation. *Journal of Biosocial Science, 30*(1), 1-14.

Kaufman, G., & Bernhardt, E. (2012). His and her job: What matters most for fertility plans and actual childbearing? *Family Relations, 61*(4), 686-697.

Kavanaugh, M. L., & Anderson, R. M. (2013). *Contraception and beyond: The health benefits of services provided at family planning centers.* New York: Guttmacher Institute.

Kennis, M. (2016). Vrouwen willen opnieuw vrij zijn: Weg met de pil! *HUMO, 3968/38,* 22-27.

Klijzing, E. (2000). Are there unmet family planning needs in Europe? *Family Planning Perspectives, 32*(2), 74-81, 88.

Kocourkova, J., & Fait, T. (2011). Changes in contraceptive practice and the transition of reproduction pattern in the Czech population. *European Journal of Contraception and Reproductive Health Care, 16*(3), 161-172.

Koffi, A. K., Adjiwanou, V. D., Becker, S., Olaolorun, F., & Tsui, A. O. (2012). Correlates of and couples' concordance in reports of recent sexual behavior and contraceptive use. *Studies in Family Planning, 43*(1), 33-42.

Kohler, H., Billari, F. C., & Ortega, J. A. (2006). Low fertility in Europe: Causes, implications and policy options. In F. R. Harris (Ed.), *The baby bust: Who will do the work? Who will pay the taxes?* (pp. 48-109). Lanham: Rowman & Littlefield Publishers.

Komter, A. (1989). Hidden power in marriage. *Gender & Society, 3*(2), 187-216.

Koytcheva, E., & Philipov, D. (2008). Bulgaria: Ethnic differentials in rapidly declining fertility. *Demographic Research, 19*(13), 361-401.

Kramer, M. R., Hogue, C. J. R., & Gaydos, L. M. D. (2007). Noncontracepting behavior in women at risk for unintended pregnancy: What's religion got to do with it? *Annals of Epidemiology, 17*(5), 327-334.

Kravdal, O. (1992). Forgone labor participation and earning due to childbearing among Norwegian women. *Demography, 29*(4), 545-563.

Kravdal, O. (1994). The importance of economic activity, economic potential and economic resources for the timing of first births in Norway. *Population Studies, 48*(2), 249-267.

Kusunoki, Y., & Upchurch, D. M. (2011). Contraceptive method choice among youth in the United States: The importance of relationship context. *Demography, 48*(4), 1451-1472.

La Libre (2012). Une femme impute son handicap à sa pilule et attaque Bayer. Retrieved from http://www.lalibre.be/dernieres-depeches/afp/une-femme-impute-son-handicap-a-sa-pilule-et-attaque-bayer-51b91fcfe4b0de6db9cc775a

Lachance-Grzela, M., & Bouchard, G. (2010). Why do women do the lion's share of housework? A decade of research. *Sex Roles, 63*(11-12), 767-780.

Landau, S. C., Tapias, M. P., & McGhee, B. T. (2006). Birth control within reach: A national survey on women's attitudes toward and interest in pharmacy access to hormonal contraception. *Contraception, 74*(6), 463-470.

Langdridge, D., Sheeran, P., & Connolly, K. (2005). Understanding the reasons for parenthood. *Journal of Reproductive and Infant Psychology, 23*(2), 121-133.

Lappegård, T., Neyer, G., & Vignoli, D. (2015). Three dimensions of the relationship between gender role attitudes and fertility intentions. *Stockholm Research Reports in Demography, 9*, 1-36.

Lavender, T., Hofmeyr, G. J., Neilson, J. P., Kingdon, C., & Gyte, G. M. L. (2012). Caesarean section for non-medical reasons at term. *Cochrane Database of Systematic Reviews, 3*, 1-16.

Le Goff, J., & Locatelli, I. (2005). *Contraception during the life course in Switzerland.* Paper presented at the Population Association of America Annual Meeting, Philadelphia, United States.

Le Guen, M., Ventola, C., Bohet, A., Moreau, C., & Bajos, N. (2015). Men's contraceptive practices in France: Evidence of male involvement in family planning. *Contraception, 92*(1), 46-54.

Leridon, H. (2006). Demographic effects of the introduction of steroid contraception in developed countries. *Human Reproduction Update, 12*(5), 603-616.

Lessard, L. N., Karasek, D., Ma, S., Darney, P., Deardorff, J., Lahiff, M., . . . Foster, D. G. (2012). Contraceptive features preferred by women at high risk of unintended pregnancy. *Perspectives on Sexual and Reproductive Health, 44*(3), 194-200.

Lesthaeghe, R. (2000). *Europe's demographic issues: Fertility, household formation and replacement migration.* Paper presented at the UN Expert Group Meeting on Policy Responses to Population Decline and Ageing, New York, United States.

Lesthaeghe, R., & Neels, K. (2002). From the first to the second demographic transition: An interpretation of the spatial continuity of demographic innovation in France, Belgium and Switzerland. *European Journal of Population, 18*(4), 325-360.

Lesthaeghe, R., & Surkyn, J. (2002). New forms of household formation in Central and Eastern Europe: Are they related to newly emerging value orientations? *IPD-WP 2002-2.*

Lesthaeghe, R., & van de Kaa, D. J. (1986). Twee demografische transities? In R. Lesthaeghe & D. J. van de Kaa (Eds.), *Bevolking: Groei en krimp* (pp. 9-24). Deventer: Van Loghum Slaterus.

Lesthaeghe, R., & Vanderhoeft, C. (2001). Ready, willing and able: A conceptualization of transitions to new behavioral forms. In J. B. Casterline (Ed.), *Diffusion processes and fertility transition: Selected processes* (pp. 240–264). Washington: National Academy Press.

Lewis, J., Campbell, M., & Huerta, C. (2008). Patterns of paid and unpaid work in Western Europe: Gender, commodification, preferences and the implications for policy. *Journal of European Social Policy, 18*(1), 21-37.

Liefbroer, A. C. (2005). The impact of perceived costs and rewards of childbearing on entry into parenthood: Evidence from a panel study. *European Journal of Population, 21*(4), 367-391.

Liefbroer, A. C., Klobas, J. E., Philipov, D., & Ajzen, I. (2015). Reproductive decision-making in a macro-micro perspective: A conceptual framework. In D. Philipov, A. C. Liefbroer, & J. E. Klobas (Eds.), *Reproductive decision-making in a macro-micro perspective* (pp. 1-15). Dordrecht, Heidelberg, New York and London: Springer.

Littlejohn, K. E. (2013). "It's those pills that are ruining me": Gender and the social meanings of hormonal contraceptive side effects. *Gender & Society, 27*(6), 843-863.

Liu, P. Y., Swerdloff, R. S., & Wang, C. (2010). Recent methodological advances in male hormonal contraception. *Contraception, 82*(5), 471-475.

Lodewijckx, E. (1989). Recent trends in contraceptive sterilization in Flanders. *Journal of Biosocial Science, 21*(1), 59-70.

Lodewijckx, E. (2002). Voluntary sterilization in Flanders. *Journal of Biosocial Science, 34*(1), 29-50.

Long, J. S. (1997). *Regression models for categorical and limited dependent variables.* Thousand Oaks, London and New Dehli: Sage Publications.

Long, J. S., & Freese, J. (2001). *Regression models for categorical dependent variables using Stata.* Texas: Stata Press.

Lorber, J., & Martin, P. Y. (1998). The socially constructed body. Insights from feminist theory. In P. Kivisto (Ed.), *Illuminating social life. Classical and contemporary theory revisited* (pp. 183-206). Thousand Oaks, London, and New Delhi: Pine Forge Press.

Lukes, S. (1974). *Power: A radical view.* London: MacMillan.

Lupton, D. (2003). *Medicine as culture. Illness, disease and the body in Western societies (2nd ed.).* London, Thousand Oaks and New Delhi: Sage Publications.

Ma, T. (2010). Attitudes toward female labor force participation in Eastern and Western Europe. *Journal of the Washington Institute of China Studies, 4*(4), 35-47.

Maas, C. J. M., & Hox, J. J. (2004). Robustness issues in multilevel regression analysis. *Statistica Neerlandica, 58*(2), 127-137.

Maas, C. J. M., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology, 1*(3), 86-92.

MacCorquodale, P. L. (1984). Gender roles and premarital contraception. *Journal of Marriage and the Family, 46*(1), 57-63.

Macintyre, S. (1980). Review article. The sociology of reproduction. *Sociology of Health & Illness, 2*(2), 215-222.

Macura, M. (2002). *Executive summary. The Generations and Gender Programme: A study of the dynamics of families and family relationships. Advancing knowledge for policy-making in low-fertility, ageing societies.* Geneva: UNECE.

Manetti, G. J., & Honig, S. C. (2010). Update on male hormonal contraception: Is the vasectomy in jeopardy? *International Journal of Impotence Research, 22*(3), 159-170.

Manlove, J., Ryan, S., & Franzetta, K. (2007). Contraceptive use patterns across teens' sexual relationships: The role of relationships, partners, and sexual histories. *Demography, 44*(3), 603-621.

Manlove, J., Welti, K., Barry, M., Peterson, K., Schelar, E., & Wildsmith, E. (2011). Relationship characteristics and contraceptive use among young adults. *Perspectives on Sexual and Reproductive Health, 43*(2), 119-128.

Manlove, J., Welti, K., Wildsmith, E., & Barry, M. (2014). Relationship types and contraceptive use within young adult dating relationships. *Perspectives on Sexual and Reproductive Health, 46*(1), 41-50.

Mannan, H. R., & Beaujot, R. (2006). Readiness, willingness and ability to use contraception in Bangladesh. *Asia-Pacific Population Journal, 21*(1), 45-64.

Manning, S., & Adams, S. (2014). Deadly risk of pill used by 1m women: Every GP in Britain told to warn about threat from popular contraceptive. Retrieved from http://www.dailymail.co.uk/news/article-2550216/Deadly-risk-pill-used-1m-women-Every-GP-Britain-told-warn-threat-popular-contraceptive.html

Manning, W. D., Flanigan, C. M., Giordano, P. C., & Longmore, M. A. (2009). Relationship dynamics and consistency of condom use among adolescents. *Perspectives on Sexual and Reproductive Health, 41*(3), 181-190.

Manning, W. D., Longmore, M. A., & Giordano, P. C. (2000). The relationship context of contraceptive use at first intercourse. *Family Planning Perspectives, 32*(3), 104-110.

Mannino, C. A., & Deutsch, F. M. (2007). Changing the division of household labor: A negotiated process between partners. *Sex Roles, 56*(5-6), 309-324.

Mansour, D., Inki, P., & Gemzell-Danielsson, K. (2010). Efficacy of contraceptive methods: A review of the literature. *European Journal of Contraception and Reproductive Health Care, 15*, S19-S31.

Marini, M. M., & Shelton, B. A. (1993). Measuring household work: Recent experience in the United States. *Social Science Research, 22*(4), 361-382.

Marston, C., & Cleland, J. (2003). Relationships between contraception and abortion: A review of the evidence. *International Family Planning Perspectives, 29*(1), 6-13.

Martinez, G. M., Chandra, A., Abma, J. C., Jones, J., & Mosher, W. D. (2006). Fertility, contraception, and fatherhood: Data on men and women from Cycle 6 (2002) of the National Survey of Family Growth. *Vital and Health Statistics, 23*(26), 1-142.

Matic, S., Lazarus, J. V., & Donoghoe, M. C. (2006). *HIV/AIDS in Europe. Moving from death sentence to chronic disease management*. Copenhagen: WHO.

McDonald, G. W. (1980). Family power: The assessment of a decade of theory and research, 1970-1979. *Journal of Marriage and the Family, 42*(4), 841-854.

McDonald, P. (2000a). Gender equity in theories of fertility transition. *Population and Development Review, 26*(3), 427-439.

McDonald, P. (2000b). Gender equity, social institutions and the future of fertility. *Journal of Population Research, 17*(1), 1-16.

McDonald, P. (2006). Low fertility and the state: The efficacy of policy. *Population and Development Review, 32*(3), 485-510.

McDonald, P. (2013). Societal foundations for explaining low fertility: Gender equity. *Demographic Research, 28*(34), 981-994.

McIntosh, J., Wahlin, B., Grindlay, K., Batchelder, M., & Grossman, D. (2013). Insurance and access implications of an over-the-counter switch for a progestin-only pill. *Perspectives on Sexual and Reproductive Health, 45*(3), 164-169.

McLaren, A. (1990). *A history of contraception: From antiquity to the present day*. Oxford and Massachusetts: Blackwell.

McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology, 27*, 415-444.

McQuillan, K. (2004). When does religion influence fertility? *Population and Development Review, 30*(1), 25-56.

Mercer, C. H., Copas, A. J., Sonnenberg, P., Johnson, A. M., McManus, S., Erens, B., & Cassell, J. A. (2009). Who has sex with whom? Characteristics of heterosexual

partnerships reported in a national probability survey and implications for STI risk. *International Journal of Epidemiology, 38*(1), 206-214.

Merckx, M., Donders, G. G., Grandjean, P., de Sande, T. V., & Weyers, S. (2011). Does structured counselling influence combined hormonal contraceptive choice? *European Journal of Contraception and Reproductive Health Care, 16*(6), 418-429.

Micale, M. S. (1989). Hysteria and its historiography. A review of past and present writings (II). *History of Science, 27*(78), 319-351.

Miller, W. B. (1994). Childbearing motivations, desires, and intentions: A theoretical framework. *Genetic, Social, and General Psychological Monographs, 120*(2), 223-258.

Miller, W. B., & Pasta, D. J. (1996). The relative influence of husbands and wives on the choice and use of oral contraception, a diaphragm, and condoms. *Journal of Applied Social Psychology, 26*(19), 1749-1774.

Miller, W. B., Rodgers, J. L., & Pasta, D. J. (2010). Fertility motivations of youth predict later fertility outcomes: A prospective analysis of national longitudinal survey of youth data. *Biodemography and Social Biology, 56*(1), 1-23.

Miller, W. B., Shain, R. N., & Pasta, D. J. (1991). Tubal sterilization or vasectomy: How do married couples make the choice? *Fertility and Sterility, 56*(2), 278-284.

Mills, M. (2010). Gender roles, gender (in)equality and fertility: An empirical test of five gender equity indices. *Canadian Studies in Population, 37*(3-4), 445-474.

Mills, M., & Blossfeld, H. P. (2005). Globalization, uncertainty and the early life course: A theoretical framework. In H. P. Blossfeld, E. Klijzing, M. Mills, & K. Kurz (Eds.), *Globalization, uncertainty and youth in society* (pp. 1-24). London and New York: Routledge Advances in Sociology.

Mills, M., Mencarini, L., Tanturri, M. L., & Begall, K. (2008). Gender equity and fertility intentions in Italy and the Netherlands. *Demographic Research, 18*(1), 1-26.

Mills, M., Präg, P., Tsang, F., Begall, K., Derbyshire, J., Kohle, L., . . . Hoorens, S. (2014). Use of childcare services in the EU Member States and progress towards the Barcelona targets. Retrieved from http://ec.europa.eu/justice/gender-equality/files/documents/140502_gender_equality_workforce_ssr1_en.pdf

Mirowsky, J. (1999). Analyzing associations between mental health and social circumstances. In C. S. Aneshensel & J. C. Phelan (Eds.), *Handbook of the Sociology of Mental Health* (pp. 105-123). New York: Kluwer Academic/Plenum Publishers.

Mirowsky, J., & Ross, C. E. (2003). *Education, social status and health*. New York: Aldine De Gruyter.

Mishra, V., & Smyth, R. (2010). Female labor force participation and total fertility rates in the OECD: New evidence from panel cointegration and Granger causality testing. *Journal of Economics and Business, 62*(1), 48-64.

Missinne, S., Daenekindt, S., & Bracke, P. (2015). The social gradient in preventive healthcare use: What can we learn from socially mobile individuals? *Sociology of Health & Illness, 37*(6), 823-838.

Missinne, S., Neels, K., & Bracke, P. (2014). Reconsidering inequalities in preventive health care: An application of cultural health capital theory and the life-course perspective to the take-up of mammography screening. *Sociology of Health & Illness, 36*(8), 1259-1275.

Mitchinson, W. (2013). *Body failure: Medical views of women, 1900-1950.* Toronto: University of Toronto Press.

Modena, F., & Sabatini, F. (2012). I would if I could: Precarious employment and childbearing intentions in Italy. *Review of Economics of the Household, 10*(1), 77-97.

Möhring, K. (2012). The fixed effect as an alternative to multilevel analysis for cross-national analyses. *GK SOCLIFE Working Paper Series, 16.*

Monden, C. W. S., & de Graaf, N. D. (2013). The importance of father's and own education for self-assessed health across Europe: An East-West divide? *Sociology of Health & Illness, 35*(7), 977-992.

Mood, C. (2010). Logistic regression: Why we cannot do what we think we can do, and what we can do about it. *European Sociological Review, 26*(1), 67-82.

Moore, S. E. H. (2010). Is the healthy body gendered? Toward a feminist critique of the new paradigm of health. *Body & Society, 16*(2), 95-118.

Moreau, C., Bouyer, J., Gilbert, F., & Bajos, N. (2006). Social, demographic and situational characteristics associated with inconsistent use of oral contraceptives: Evidence from France. *Perspectives on Sexual and Reproductive Health, 38*(4), 190-196.

Moreau, C., Cleland, K., & Trussell, J. (2007). Contraceptive discontinuation attributed to method dissatisfaction in the United States. *Contraception, 76*(4), 267-272.

Moreau, C., Trussell, J., & Bajos, N. (2013). Religiosity, religious affiliation, and patterns of sexual activity and contraceptive use in France. *European Journal of Contraception and Reproductive Health Care, 18*(3), 168-180.

Moscucci, O. (1990). *The science of woman: Gynaecology and gender in England, 1800-1929.* Cambridge: Cambridge University Press.

Mosher, W. D., & Jones, J. (2010). Use of contraception in the United States: 1982-2008. *Vital and Health Statistics, 23*(29), 1-54.

Muehlbacher, S., Hofmann, E., Kirchler, E., & Roland-Levy, C. (2009). Household decision-making: Changes of female and male partners' role? *Psychology and Economics, 2*, 1-19.

Muresan, C., Haragus, P. T., Haragus, M., & Schroder, C. (2008). Romania: Childbearing metamorphosis within a changing context. *Demographic Research, 19*(23), 855-905.

Murphy, M. (2012). *Seizing the means of reproduction. Entanglements of feminism, health, and technoscience*. Durham and London: Duke University Press.

National Center for Disease Control and Public Health (2012). Reproductive Health Survey Georgia 2010. Final report. Retrieved from http://www.ncdc.ge/AttachedFiles/reproductive_health_survey_georgia_2010_0ac9423c-44f8-47a6-afa4-118953ab52de.pdf

National Scientific and Applied Center for Preventive Medicine, & ORC Macro (2006). Moldova Demographic and Health Survey 2005. Retrieved from https://dhsprogram.com/pubs/pdf/FR178/FR178.pdf

National Statistical Service, Ministry of Health, & ORC Macro (2006). Armenia Demographic and Health Survey 2005. Retrieved from http://dhsprogram.com/pubs/pdf/Fr184/Fr184.pdf

Need, A., Ultee, W., Levels, M., & van Tienen, M. (2008). Meningen over abortus in West-Europa, 1981-2000. *Mens & Maatschappij, 83*(1), 5-22.

Neyer, G., & Andersson, G. (2008). Consequences of family policies on childbearing behavior: Effects or artifacts? *Population and Development Review, 34*(4), 699-724.

Neyer, G., & Bernardi, L. (2011). Feminist perspectives on motherhood and reproduction. *Historical Social Research-Historische Sozialforschung, 36*(2), 162-176.

Neyer, G., Lappegård, T., & Vignoli, D. (2013). Gender equality and fertility: Which equality matters? *European Journal of Population, 29*(3), 245-272.

Nieuwbeerta, P., & Wittebrood, K. (1995). Intergenerational transmission of political party preference in the Netherlands. *Social Science Research, 24*(3), 243-261.

Nock, S. L. (2005). Marriage as a public issue. *Future of Children, 15*(2), 13-32.

Oakley, A. (2016). The sociology of childbirth: an autobiographical journey through four decades of research. *Sociology of Health & Illness, 38*(5), 689-705.

OCs OTC Working Group (2017). Global oral contraception availability. Retrieved from http://ocsotc.org/wp-content/uploads/worldmap/worldmap.html

Oddens, B. J. (1996). *Determinants of contraceptive use. National population-based studies in various West European countries [Doctoral dissertation]*. Delft: Eburon.

Oddens, B. J., Vemer, H. M., Visser, A. P., & Ketting, E. (1993). Contraception in Germany: A review. *Advances in Contraception, 9*(2), 105-116.

Oddens, B. J., Visser, A. P., Vemer, H. M., & Everaerd, W. T. A. M. (1994). Contraceptive use and attitudes in reunified Germany. *European Journal of Obstetrics Gynecology and Reproductive Biology, 57*(3), 201-208.

Oddens, B. J., Visser, A. P., Vemer, H. M., Everaerd, W. T. A. M., & Lehert, P. (1994). Contraceptive use and attitudes in Great-Britain. *Contraception, 49*(1), 73-86.

OECD (2012). Greater educational equality has not translated into equality in the labour market. Retrieved from https://www.oecd.org/belgium/Closing%20the%20 Gender%20Gap%20-%20Belgium%20FINAL.pdf

OECD (2015). Incidence of involuntary part time workers. Retrieved from https:// stats.oecd.org/Index.aspx?DataSetCode=INVPT_I

Oláh, L. S., & Fratczak, E. (2004). Becoming a mother in Hungary and Poland during State Socialism. *Demographic Research, special collection 3*(9), 213-244.

Oláh, L. S. (2003). Gendering fertility: Second births in Sweden and Hungary. *Population Research and Policy Review, 22*(2), 171-200.

Olsen, K. M., & Dahl, S. A. (2007). Health differences between European countries. *Social Science & Medicine, 64*(8), 1665-1678.

Oppenheimer, V. K. (1994). Womens rising employment and the future of the family in industrial societies. *Population and Development Review, 20*(2), 293-342.

Oppenheimer, V. K., Kalmijn, M., & Lim, N. (1997). Men's career development and marriage timing during a period of rising inequality. *Demography, 34*(3), 311-330.

Osterkorn, D., & Schramm, W. (1998). Increase in abortions following the political 'pill scare': Reaction in Germany. *The European Journal of Contraception and Reproductive Health Care, 3*(1), 51-52.

Pampel, F. C., Krueger, P. M., & Denney, J. T. (2010). Socioeconomic disparities in health behaviors. *Annual Review of Sociology, 36*, 349-370.

Panayotova, E., & Brayfield, A. (1997). National context and gender ideology: Attitudes toward women's employment in Hungary and the United States. *Gender & Society, 11*(5), 627-655.

Parsons, T. (1957). The distribution of power in American society. *World Politics, 10*(1), 123-143.

Parsons, T. (1959). The social structure of the family. In R. N. Anshen (Ed.), *The family: Its function and destiny (Revised ed.)* (pp. 241-274). New York: Harper & Row Publishers.

Parsons, T. (1963). On the concept of political power. *Proceedings of the American Philosophical Society, 107*(3), 232-262.

Part, K., Ringmets, I., Laanpere, M., Rahu, M., & Karro, H. (2016). Contraceptive use among young women in Estonia: Association with contraceptive services. *European Journal of Contraception and Reproductive Health Care, 21*(2), 132-140.

Pascall, G., & Lewis, J. (2004). Emerging gender regimes and policies for gender equality in a wider Europe. *Journal of Social Policy, 33*(3), 373-394.

Pascall, G., & Manning, N. (2000). Gender and social policy: Comparing welfare states in Central and Eastern Europe and the former Soviet Union. *Journal of European Social Policy, 10*(3), 240-266.

Picavet, C., van der Leest, L., & Wijsen, C. (2011). *Contraceptive decision-making: Background and outcomes of contraceptive methods.* Utrecht: Rutgers.

Pickett, K. E., & Pearl, M. (2001). Multilevel analyses of neighbourhood socioeconomic context and health outcomes: A critical review. *Journal of Epidemiology and Community Health, 55*(2), 111-122.

Pollert, A. (2003). Women, work and equal opportunities in post-communist transition. *Work Employment and Society, 17*(2), 331-357.

Popov, A. A., & David, H. P. (1999). Russian Federation and USSR Successor States. In H. P. David (Ed.), *From abortion to contraception. A resource to public policies and reproductive behavior in Central and Eastern Europe from 1917 to the present* (pp. 223-277). Westport and London: Greenwood Press.

Potter, J. E., McKinnon, S., Hopkins, K., Amastae, J., Shedlin, M. G., Powers, D. A., & Grossman, D. (2011). Continuation of prescribed compared with over-the-counter oral contraceptives. *Obstetrics and Gynecology, 117*(3), 551-557.

Powers, D. A., Yoshioka, H., & Yun, M. S. (2011). mvdcmp: Multivariate decomposition for nonlinear response models. *Stata Journal, 11*(4), 556-576.

Prskawetz, A., Sobotka, T., Buber, I., Engelhardt, H., & Gisser, R. (2008). Austria: Persistent low fertility since the mid-1980s. *Demographic Research, 19*(12), 293-360.

Rafie, S., Haycock, M., Rafie, S., Yen, S., & Harper, C. C. (2012). Direct pharmacy access to hormonal contraception: California physician and advanced practice clinician views. *Contraception, 86*(6), 687-693.

Rafie, S., Kelly, S., Gray, E. K., Wong, M., Gibbs, S., & Harper, C. C. (2016). Provider opinions regarding expanding access to hormonal contraception in pharmacies. *Womens Health Issues, 26*(2), 153-160.

Read, J. H. (2012). Is power zero-sum or variable-sum? Old arguments and new beginnings. *Political Science Faculty Publications, Paper 4.*

Reimondos, A. (2013). *How accurate are proxy reports of partner's pregnancy wantedness? Evidence from Australian couples.* Paper presented at the International Population Conference, Busan, Korea.

RFSU (2013). Rubbers by numbers. Retrieved from http://www.rfsu.se/Bildbank/ Dokument/Fakta/Rubbers%20by%20numbers%202013.pdf?epslanguage=sv

RHS (2015). Reproductive Health Survey (RHS). Retrieved from http://ghdx. healthdata.org/series/reproductive-health-survey-rhs

Rindfuss, R. R., Brewster, K. L., & Kavee, A. L. (1996). Women, work, and children: Behavioral and attitudinal change in the United States. *Population and Development Review, 22*(3), 457-482.

Robinson, W. C. (1997). The economic theory of fertility over three decades. *Population Studies, 51*(1), 63-74.

Rodgers, J. L. (1999). The bootstrap, the Jackknife, and the randomization test: A sampling taxonomy. *Multivariate Behavioral Research, 34*(4), 441-456.

Roepke, C. L., & Schaff, E. A. (2014). Long tail strings: Impact of the Dalkon Shield 40 years later. *Open Journal of Obstetrics and Gynecology, 4*(16), 996-1005.

Rosenberg, M. J., & Waugh, M. S. (1998). Oral contraceptive discontinuation: A prospective evaluation of frequency and reasons. *American Journal of Obstetrics and Gynecology, 179*(3), 577-582.

Rosenberg, M. J., Waugh, M. S., & Meehan, T. E. (1995). Use and misuse of oral contraceptives: Risk indicators for poor pill taking and discontinuation. *Contraception, 51*(5), 283-288.

Rosenfield, S. (1992). The costs of sharing: Wives employment and husbands mental health. *Journal of Health and Social Behavior, 33*(3), 213-225.

Rossier, C., & Leridon, H. (2004). The pill and the condom, substitution or association? An analysis of the contraceptive histories of young women in France, 1978-2000. *Population, 59*(3-4), 449-478.

Rossier, C., & Pirus, C. (2007). Estimating the number of abortions in France, 1976-2002. *Population, 62*(1), 57-90.

Rostosky, S. S., Wilcox, B. L., Wright, M. L. C., & Randall, B. A. (2004). The impact of religiosity on adolescent sexual behavior: A review of the evidence. *Journal of Adolescent Research, 19*(6), 677-697.

Rubin, D. B. (1996). Multiple imputation after 18+ years. *Journal of the American Statistical Association, 91*(434), 473-489.

Safilios-Rothschild, C. (1970). The study of family power structure: A review 1960-1969. *Journal of Marriage and Family, 32*(4), 539-552.

Sandor, E. (2011). *Part-time work in Europe*. Luxembourg: European Foundation for the improvement of Living and Working Conditions.

Sandström, G. (2012). *Ready, willing and able. The divorce transition in Sweden 1915-1974 [Doctoral dissertation]*. Umea: Umea Universitet.

Santelli, J., Rochat, R., Hatfield-Timajchy, K., Gilbert, B. C., Curtis, K., Cabral, R., . . . Schieve, L. (2003). The measurement and meaning of unintended pregnancy. *Perspectives on Sexual and Reproductive Health, 35*(2), 94-101.

Santow, G. (1993). Coitus interruptus in the twentieth century. *Population and Development Review, 19*(4), 767-792.

Santow, G., & Bracker, M. D. (1999). Traditional families and fertility decline: Lessons from Australia's Southern Europeans. In R. Leete (Ed.), *Dynamics of values in fertility change* (pp. 51-77). Oxford: Oxford University Press.

Schafer, J. L. (1999). Multiple imputation: A primer. *Statistical Methods in Medical Research, 8*(1), 3-15.

Schenker, J. G., & Rabenou, V. (1993). Contraception: Traditional and religious attitudes. *European Journal of Obstetrics Gynecology and Reproductive Biology, 49*(1-2), 15-18.

Schmitt, C. (2012). A cross-national perspective on unemployment and first births. *European Journal of Population, 28*(3), 303-335.

Schmitt, C., & Trappe, H. (2010). Introduction to the special issue: Gender relations in Central and Eastern Europe - Change or continuity? *Zeitschrift Fur Familienforschung, 22*(3), 261-265.

Schnepf, S. V. (2006). Gender equality in the labour market: Attitudes to women's work. HWWI Research Paper, Hamburg Institute of International Economics.

Sedgh, G., Bearak, J., Singh, S., Bankole, A., Popinchalk, A., Ganatra, B., . . . Alkema, L. (2016). Abortion incidence between 1990 and 2014: Global, regional, and subregional levels and trends. *Lancet, 388*(10041), 258-267.

Sedgh, G., Henshaw, S. K., Singh, S., Bankole, A., & Drescher, J. (2007). Legal abortion worldwide: Incidence and recent trends. *International Family Planning Perspectives, 33*(3), 106-116.

Sedgh, G., Singh, S., & Hussain, R. (2014). Intended and unintended pregnancies worldwide in 2012 and recent trends. *Studies in Family Planning, 45*(3), 301-314.

Sen, A. (1997). Editorial: Human capital and human capability. *World Development, 25*(12), 1959-1961.

SENSOA (2017). Anticonceptie. Retrieved from http://www.seksualiteit.be/anticonceptie

Serbanescu, F., Goldberg, H., & Morris, L. (2004). *Reproductive health in transition countries in the European context.* Paper presented at the European Population Forum, Population Challenges and Policy Responses, Geneva, Switzerland.

Serbanescu, F., Imnadze, P., Bokhua, Z., Nutsubidze, N., Jackson, D. B., & Morris, L. (2005). Reproductive Health Survey Georgia, 2005. Final report. Retrieved from http://ghdx.healthdata.org/record/georgia-reproductive-health-survey-2005

Serbanescu, F., Morris, L., Stupp, P., & Stanescu, A. (1995). The impact of recent policy changes on fertility, abortion, and contraceptive use in Romania. *Studies in Family Planning, 26*(2), 76-87.

Serbanescu, F., & Seither, R. (2003). Contraceptive knowledge and use. In CDC & ORC Macro (Eds.), *Reproductive, maternal and child health in Eastern Europe and Eurasia: A comparative report* (pp. 51-72). Atlanta: Centers for Disease Control and Prevention.

Shearer, C. L., Hosterman, S. J., Gillen, M. M., & Lefkowitz, E. S. (2005). Are traditional gender role attitudes associated with risky sexual behavior and condom-related beliefs? *Sex Roles, 52*(5-6), 311-324.

Shelton, B. A., & John, D. (1996). The division of household labor. *Annual Review of Sociology, 22*, 299-322.

Shih, G., Turok, D. K., & Parker, W. J. (2011). Vasectomy: the other (better) form of sterilization. *Contraception, 83*(4), 310-315.

Shih, G., Zhang, Y., Bukowski, K., & Chen, A. (2014). Bringing men to the table: Sterilization can be for him or for her. *Clinical Obstetrics and Gynecology, 57*(4), 731-740.

Shotorbani, S., Miller, L., Blough, D. K., & Gardner, J. (2006). Agreement between women's and providers' assessment of hormonal contraceptive risk factors. *Contraception, 73*(5), 501-506.

Singh, S., & Darroch, J. E. (2012). *Adding it up: Costs and benefits of contraceptive services - Estimates for 2012.* New York: Guttmacher Institute and United Nations Population Fund.

Singh, S., Sedgh, G., & Hussain, R. (2010). Unintended pregnancy: Worldwide levels, trends, and outcomes. *Studies in Family Planning, 41*(4), 241-250.

Skouby, S. O. (2004). Contraceptive use and behavior in the 21st century: A comprehensive study across five European countries. *European Journal of Contraception and Reproductive Health Care, 9*(2), 57-68.

Sobel, M. E. (1981). Diagonal mobility models: A substantively motivated class of designs for the analysis of mobility effects. *American Sociological Review, 46*(6), 893-906.

Sobel, M. E. (1985). Social mobility and fertility revisited: Some new models for the analysis of the mobility effects hypothesis. *American Sociological Review, 50*(5), 699-712.

Sobotka, T. (2008). The diverse faces of the second demographic transition in Europe. *Demographic Research, 19*(8), 171-224.

Sobotka, T. (2015). Low fertility in Austria and the Czech Republic: Gradual policy adjustments. *Vienna Institute of Demography Working Papers, 2/2015*, 1-46.

Sobotka, T., & Adigüzel, F. (2003). Religiosity and spatial demographic differences in the Netherlands. *SOM Research Report 02F65, Univerity of Groningen.*

Sobotka, T., Stastna, A., Zeman, K., Hamplova, D., & Kantorova, V. (2008). Czech Republic: A rapid transformation of fertility and family behaviour after the collapse of state socialism. *Demographic Research, 19*(14), 403-454.

Social Watch (2012). Measuring inequity: The 2012 Gender Equity Index. Retrieved from http://www.socialwatch.org/node/14367

Sonfeld, A. (2007). Popularity disparity: Attitudes about the IUD in Europe and the United States. *Guttmacher Policy Review, 10*(4), 19-24.

Sonfeld, A. (2015). Rounding out the contraceptive coverage guarantee: Why 'male' contraceptive methods matter for everyone. *Guttmacher Policy Review, 18*(2), 34-39.

Spinelli, A., Talamanca, I. F., & Lauria, L. (2000). Patterns of contraceptive use in 5 European countries. *American Journal of Public Health, 90*(9), 1403-1408.

Sprecher, S. (2013). Predictors of condom use in first sexual intercourse: a consideration of individual, situational, relational, and cohort effects. *Journal of Applied Social Psychology, 43*, E71-E84.

Sprecher, S., Schmeeckle, M., & Felmlee, D. (2006). The principle of least interest. Inequality in emotional involvement in romantic relationships. *Journal of Family Issues, 27*(9), 1255-1280.

Srikanthan, A., & Reid, R. L. (2008). Religious and cultural influences on contraception. *Journal of Obstetrics and Gynaecology, 30*(2), 129-137.

Stankuniene, V., & Jasilioniene, A. (2008). Lithuania: Fertility decline and its determinants. *Demographic Research, 19*(20), 705-742.

Stanworth, M. (1987). *Reproductive technologies: Gender, motherhood and medicine.* Cambridge: Polity Press.

Stark, R. (1996). Religion as context: Hellfire and delinquency one more time. *Sociology of Religion, 57*(2), 163-173.

Starke, K., & Visser, A. P. (1994). Sexuality, sexual behavior and contraception in East-Germany. *Patient Education and Counseling, 23*(3), 217-226.

State Statistical Committee, & Macro International Inc. (2008). *Azerbaijan Demographic and Health Survey 2006.* Calverton: State Statistical Committee and Macro International Inc.

Stegmueller, D. (2013). How many countries for multilevel modeling? A comparison of frequentist and Bayesian approaches. *American Journal of Political Science, 57*(3), 748-761.

Stloukal, L. (1999). Understanding the "abortion culture" in Central and Eastern Europe. In H. P. David (Ed.), *From abortion to contraception. A resource to public policies and reproductive behavior in Central and Eastern Europe from 1917 to the present* (pp. 23-37). Westport and London: Greenwood Press.

Stoller, R. J. (1968). *Sex and gender. The development of masculinity and femininity.* London: Karnac Books.

Stolley, K. S. (1996). *Male versus female sterilization: A social power model [Doctoral dissertation].* Washington: The George Washington University.

Stuart, G. S., & Grimes, D. A. (2009). Social desirability bias in family planning studies: A neglected problem. *Contraception, 80*(2), 108-112.

Sudman, S., Bradburn, N. M., & Schwarz, N. (1996). *Thinking about answers: The application of cognitive processes to survey methodology.* San Francisco: Jossey-Bass.

Sundström, A., & Wängnerud, L. (2013). Women's political representation in the European regions: The impact from corruption and bad governance. *QoG Working Paper Series, 9.*

Sweeney, M. M., Castro-Martin, T., & Mills, M. (2015). The reproductive context of cohabitation in comparative perspective: Contraceptive use in the United States, Spain, and France. *Demographic Research, 32*(5), 147-182.

Sweeney, M. M., & Raley, R. K. (2014). Race, ethnicity, and the changing context of childbearing in the United States. *Annual Review of Sociology, 40*, 539-558.

Szelewa, D., & Polakowski, M. P. (2008). Who cares? Changing patterns of childcare in Central and Eastern Europe. *Journal of European Social Policy, 18*(2), 115-131.

Tang, N., & Cousins, T. (2005). Working time, gender and family: An East-West European comparison. *Gender Work and Organization, 12*(6), 527-550.

Taris, T. W. (2000). *A primer in longitudinal data analysis.* London, Thousand Oaks, and New Delhi: Sage Publications.

te Velde, E. R. (2005). Is women's emancipation still compatible with reproduction in this century? *International Congress Series, 1279*, 58-67.

Testa, M. R. (2012). Couple disagreement about short-term fertility desires in Austria: Effects on intentions and contraceptive behaviour. *Demographic Research, 26*(3), 63-97.

Thomson, E. (1997). Couple childbearing desires, intentions, and births. *Demography, 34*(3), 343-354.

Thomson, E., & Hoem, J. M. (1998). Couple childbearing plans and births in Sweden. *Demography, 35*(3), 315-322.

Thomson, E., McDonald, E., & Bumpass, L. L. (1990). Fertility desires and fertility: Hers, his, and theirs. *Demography, 27*(4), 579-588.

Titkow, A. (1999). Poland. In H. P. David (Ed.), *From abortion to contraception. A resource to public policies and reproductive behavior in Central and Eastern Europe from 1917 to the present* (pp. 165-190). Westport and London: Greenwood Press.

Tolsma, J., de Graaf, N. D., & Quillian, L. (2009). Does intergenerational social mobility affect antagonistic attitudes towards ethnic minorities? *British Journal of Sociology, 60*(2), 257-277.

Torr, B. M., & Short, S. E. (2004). Second births and the second shift: A research note on gender equity and fertility. *Population and Development Review, 30*(1), 109-130.

Toulemon, L., Pailhe, A., & Rossier, C. (2008). France: High and stable fertility. *Demographic Research, 19*(16), 503-555.

Toulemon, L., & Testa, M. R. (2005). Fertility intentions and actual fertility: A complex relationship. *Population & Societies, 415*, 1-4.

Troitskaia, I., Avdeev, A., Badurashvili, I., Kapanadze, E., & Tretjakova, V. (2009). Étude comparative des pratiques contraceptives: France, Géorgie, Lithuanie et Russie. *Revue d'études comparatives Est-Ouest, 40*(3-4), 241-272.

Trussell, J. (2011). Contraceptive failure in the United States. *Contraception, 83*(5), 397-404.

Tschann, J. M., Adler, N. E., Millstein, S. G., Gurvey, J. E., & Ellen, J. M. (2002). Relative power between sexual partners and condom use among adolescents. *Journal of Adolescent Health, 31*(1), 17-25.

Ukrainian Center for Social Reforms, State Statistical Committee, Ministry of Health, & Macro International Inc. (2008). Ukraine Demographic and Health Survey 2007. Retrieved from https://dhsprogram.com/pubs/pdf/FR210/FR210.pdf

UNDP (2010). Human development report 2010. The real wealth of nations: Pathways to human development. Retrieved from http://hdr.undp.org/sites/default/files/reports/270/hdr_2010_en_complete_reprint.pdf

UNDP (2013). Human development report. The rise of the South: Human progress in a diverse world. Retrieved from http://hdr.undp.org/sites/default/files/reports/14/hdr2013_en_complete.pdf

UNDP (2015). Human development report 2015. Work for human development. Retrieved from http://hdr.undp.org/sites/default/files/2015_human_development_report_1.pdf

UNECE (2000a). *Family and Fertility Surveys. Survey design*. Geneva: UNECE Population Activities Unit.

UNECE (2000b). FFS standard tables. Country specific documents and tables. Retrieved from http://www.unece.org/pau/ffs/ffstab.html

UNECE (2005). *Generations and Gender Programme. Survey instruments*. New York and Geneva: United Nations.

United Nations (1995). *Report of the International Conference on Population and Development. Cairo, 5-13 September 1994*. New York: United Nations.

United Nations (1999). World abortion policies 1999. Retrieved from http://www.un.org/esa/population/publications/abt/tabtreu.htm

United Nations (2002). Abortion policies. A global review. Retrieved from http://www.un.org/esa/population/publications/abortion/profiles.htm

United Nations (2007). *World abortion policies 2007*. New York: United Nations, Department of Economic and Social Affairs, Population Division.

United Nations (2008). Official list of Millennium Development Goals indicators. Retrieved from https://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm

United Nations (2012). *World contraceptive use 2012. Survey-based observations: Unmet need for family planning [Dataset]*. New York: United Nations, Department of Economic and Social Affairs, Population Division.

United Nations (2013). *World Contraceptive Patterns 2013*. New York: United Nations, Department of Economic and Social Affairs, Population Division.

United Nations (2014). *Abortion policies and reproductive health around the world*. New York: United Nations, Department of Economic and Social Affairs, Population Division.

United Nations (2015a). Transforming our world: The 2030 agenda for sustainable development. Retrieved from https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf

United Nations (2015b). *Trends in contraceptive use worldwide 2015*. New York: United Nations, Department of Economic and Social Affairs, Population Division

United Nations (2016). *World Contraceptive Use 2016 [Dataset]*. New York: United Nations, Department of Economic and Social Affairs, Population Division.

Ussher, J. M., Perz, J., & Parton, C. (2015). Sex and the menopausal woman: A critical review and analysis. *Feminism & Psychology, 25*(4), 449-468.

Van Bavel, J. (2010). Choice of study discipline and the postponement of motherhood in Europe: The impact of expected earnings, gender composition, and family attitudes. *Demography, 47*(2), 439-458.

Van Bavel, J., & Reher, D. S. (2013). The baby boom and its causes: What we know and what we need to know. *Population and Development Review, 39*(2), 257-288.

van de Kaa, D. J. (1997). Options and sequences: Europe's demographic patterns. *Journal of the Australian Population Association, 14*(1), 1-29.

van de Kaa, D. J. (2011). On the societal impact of modern contraception. In G. Beets, J. Schippers, & E. R. te Velde (Eds.), *The future of motherhood in Western societies. Late fertility and its consequences* (pp. 49-60). Dordrecht, Heidelberg, London and New York: Springer.

Van de Velde, S., Bambra, C., Van der Bracht, K., Eikemo, T. A., & Bracke, P. (2014). Keeping it in the family: The self-rated health of lone mothers in different European welfare regimes. *Sociology of Health & Illness, 36*(8), 1220-1242.

Van de Velde, S., Huijts, T., Bracke, P., & Bambra, C. (2013). Macro-level gender equality and depression in men and women in Europe. *Sociology of Health & Illness, 35*(5), 682-698.

Van Rossem, R. (2010). *Multivariate analyse voor de sociale wetenschappen. Logistische regressie (2nd ed).* Gent: Academia Press.

van Teijlingen, E. (2005). A critical analysis of the medical model as used in the study of pregnancy and childbirth. *Sociological Research Online, 10*(2). Retrieved from http://www.socresonline.org.uk/10/2/teijlingen.html

Vassilev, D. (1999). Bulgaria. In H. P. David (Ed.), *From abortion to contraception. A resource to public policies and reproductive behavior in Central and Eastern Europe from 1917 to the present* (pp. 69-89). Westport and London: Greenwood Press.

Vaughan, B., Trussell, J., Kost, K., Singh, S., & Jones, R. (2008). Discontinuation and resumption of contraceptive use: Results from the 2002 National Survey of Family Growth. *Contraception, 78*(4), 271-283.

Ventola, C. (2014). Prescrire un contraceptif: Le rôle de l'institution médicale dans la construction de catégories sexuées. *Genre, Sexualité & Société, 12.* Retrieved from https://gss.revues.org/3215

Vikat, A., Speder, Z., Beets, G., Billari, F. C., Buhler, C., Desesquelles, A., . . . Solaz, A. (2007). Generations and Gender Survey (GGS): Towards a better understanding of relationships and processes in the life course. *Demographic Research, 17*(14), 389-439.

Vitali, A., & Arpino, B. (2016). Who brings home the bacon? The influence of context on partners' contributions to the household income. *Demographic Research, 35*(41), 1213-1244.

Vitali, A., & Testa, M. R. (2016). *Partners' relative incomes and fertility intentions.* Paper presented at the European Population Conference, Mainz, Germany.

Wajcman, J. (1991). *Feminism confronts technology.* Pennsylvania: The Pennsylvania University Press.

Waller, W. (1937). The rating and dating complex. *American Sociological Review, 2*(5), 727-734.

Wallimann, I., Tatsis, N. C., & Zito, G. V. (1977). On Max Weber's definition of power. *Australia and New Zealand Journal of Sociology, 13*(3), 231-235.

Walsch, J. (1997). *Contraceptive choices: Supporting effective use of methods.* London: Family Planning Association.

Wang, G. Z. (2004). Reproductive health in the context of economic and democratic development. *Comparative Sociology, 3*(2), 135-162.

Wang, G. Z. (2007). Testing the impact of gender equality on reproductive health: An analysis of developing countries. *Social Science Journal, 44*(3), 507-524.

Wang, G. Z., & Pillai, V. K. (2001). Women's reproductive health: A gender-sensitive human rights approach. *Acta Sociologica, 44*(3), 231-242.

Watkins, E. S. (2012). How the pill became a lifestyle drug: The pharmaceutical industry and birth control in the United States since 1960. *American Journal of Public Health, 102*(8), 1462-1472.

Webb, A. M. C. (1996). Impact of publicity on oral contraceptive acceptance and use. In J. Cohen (Ed.), *Oral contraceptives and cardiovascular disease. An analysis of the recent discussions on the safety of the pill* (pp. 13-18). New York and London: The Parthenon Publishing Group.

West, C., & Zimmerman, D. H. (1987). Doing gender. *Gender & Society, 1*(2), 125-151.

Westoff, C. F. (2005). Recent trends in abortion and contraception in 12 countries. *DHS Analytical Studies, No. 8.*

Westoff, C. F., & Ryder, N. B. (1977). *The contraceptive revolution.* Princeton: Princeton University Press.

WHO Europe (2017). Contraception. Retrieved from http://www.euro.who.int/en/health-topics/Life-stages/sexual-and-reproductive-health/activities/contraception

WHO Regional Office for Europe and BZgA (2010). *Standards for sexuality education in Europe. A framework for policy makers, educational and health authorities and specialists.* Cologne: Federal Centre for Health Education, BZgA.

Willer, R., Rogalin, C. L., Conlon, B., & Wojnowicz, M. T. (2013). Overdoing gender: A test of the masculine overcompensation thesis. *American Journal of Sociology, 118*(4), 980-1022.

World Bank (2016a). Adolescent fertility rate (births per 1,000 women ages 15-19). Retrieved from http://data.worldbank.org/indicator/SP.ADO.TFRT

World Bank (2016b). Fertility rate, total (births per woman). Retrieved from http://data.worldbank.org/indicator/SP.DYN.TFRT.IN

World Bank (2016c). Gini index. Retrieved from http://data.worldbank.org/indicator/SI.POV.GINI

World Bank (2016d). Mortality rate, neonatal (per 1,000 live births). Retrieved from http://data.worldbank.org/indicator/SH.DYN.NMRT

WHO (2015). WHO Statement on Caesarean Section Rates. Retrieved from http://apps.who.int/iris/bitstream/10665/161442/1/WHO_RHR_15.02_eng.pdf?ua=1

WHO (2016). European health for all (HFA-DB). Retrieved from http://data.euro.who.int/hfadb/

Wrong, D. H. (1988). *Power. Its forms, bases, and uses*. Oxford: Blackwell.

Wynnyczuk, V., & Uzel, R. (1999). Czech Republic and Slovak Republic. In H. P. David (Ed.), *From abortion to contraception. A resource to public policies and reproductive behavior in Central and Eastern Europe from 1917 to the present* (pp. 91-119). Westport and London: Greenwood Press.

Xu, Y., Bentley, R. J., & Kavanagh, A. M. (2011). Gender equity and contraceptive use in China: An ecological analysis. *Women & Health, 51*(8), 739-758.

Zampas, C., & Lamackova, A. (2011). Forced and coerced sterilization of women in Europe. *International Journal of Gynecology & Obstetrics, 114*(2), 163-166.

Zola, I. K. (1972). Medicine as an institution of social control. *Sociological Review, 20*(4), 487-504.

APPENDIX

Appendix 7.A Country-specific deviations from the GGS model questionnaire

	Alternative categorization	Additional contraceptive options	Removed contraceptive options
Austria	-	Patch, vaginal ring, other male methods, other female methods	-
Belgium	(1) Withdrawal, rhythm method (2) Condom (3) Pills, injectables, morning-after pill, IUD, implants (4) Sterilization of man or woman (5) Other methods	-	Diaphragm, foam/cream/jelly/suppository, Persona
France	-	Other methods	-
Germany	-	-	-
Norway	-	Patch, vaginal ring, mini pill	Sterilization[a]
Bulgaria	-	-	-
Czech Republic	-	-	-
Estonia	Pills, implants and hormonal IUD combined as "hormonal methods"	-	Diaphragm, injectables, Persona
Georgia	-	-	-
Lithuania	-	-	-
Poland	-	Patch	-
Romania	-	-	-
Russian Federation	-	Syringe/douche	Persona

Notes. [a] According to the Norwegian GGS survey, sterilization was added as a contraceptive option, but no information on sterilization is available in the dataset

Sources. Country-specific questionnaires (retrieved from GGP, 2016)

Appendix 8.A Data collection and age range per country and per survey

Country	Years between both data collections	FFS		GGS	
		Data collection	Age range	Data collection	Age range
Austria	12-14	1995-1996	20-45	2008-2009	18-45
Belgium	16-19	1991-1992	21-40	2008-2010	18-79
Bulgaria	6-8	1997-1998	18-40	2004-2005	18-79
Czech Republic	8	1997	15-44	2005	18-79
Estonia [a]	10-11 (women); 6-8 (men)	1994 (women); 1997-1998 (men)	20-69	2004-2005	21-79
France	11	1994	20-49	2005	18-79
Germany	13	1992	20-39	2005	18-79
Lithuania	11-12	1994-1995	18-49	2006	18-79
Norway	18-20	1988-1989	20-43	2007-2008	18-79
Poland	19-20	1991	18-49	2010-2011	18-79

Sources. UNECE (2000a); GGP (2016)

Table 8.B Logistic regression analysis for the association between family and socioeconomic characteristics, and the use of cooperative methods, including sterilized respondents[a]

| | Bulgaria | | | | Poland | | | | Lithuania | | | | Germany | | | | Austria | | | |
| | 1990s[b] | | 2000s | | 1990s | | 2000s[b] | | 1990s | | 2000s | | 1990s | | 2000s | | 1990s | | 2000s | |
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.579	*	3.226	***	0.768		0.992		0.436	**	1.764	***	0.171	***	0.409	***	0.172	***	0.386	***
Family characteristics																				
Married (ref. = not married)	0.876		0.978		0.804		1.174		1.299		0.854		0.622	***	0.838		0.771		1.237	
Number of children (ref. = no children)																				
One child	0.850		0.413	***	1.616	**	0.763		1.268		0.627	*	0.741	*	0.911		0.821		0.976	
Two children	1.157		0.498	**	2.123	***	0.771		1.376		0.663		0.814		1.022		0.956		0.737	
Three or more children	0.813		0.408	**	1.740	***	0.889		1.798	*	0.809		0.681		1.565		0.629		0.533	*
Desire for children (ref. = no desire)	0.910		0.845		0.977		0.876		1.051		0.780		0.935		0.517	***	0.768		0.573	***
Socioeconomic characteristics																				
High educated (ref. = low educated)	1.393	*	0.995		1.607	***	1.241	*	1.503	***	1.112		1.486	**	1.828	**	1.033		1.832	***
Employed (ref. = not employed)	0.930		1.066		0.979		1.052		1.075		1.006		1.096		1.032		1.349		0.688	**

Note. [a] All models are controlled for respondents' age; [b] The country-period only includes female respondents due to data limitations; [c] The Norwegian FFS subsample does not contain any respondents who are not employed. * p < .05, ** p < .01, *** p < .001

Table 8.B continued

| | Czech Republic | | | | Estonia | | | | Norway | | | | Belgium | | | | France | | | |
| | 1990s | | 2000s | | 1990s | | 2000s[b] | | 1990s[c] | | 2000s | | 1990s | | 2000s | | 1990s | | 2000s | |
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.625		0.360	***	1.069		0.852		0.238	***	0.197	***	0.105	***	0.297	***	0.214	***	0.381	***
Married (ref. = not married)	0.785		1.166		0.832		0.787		1.426	*	1.769	***	0.988		0.978		0.985		0.493	***
One child	0.990		0.981		0.863		0.563		0.901		0.906		0.744		0.963		0.765		0.824	
Two children	0.846		0.778		0.969		0.715		1.121		0.508	**	0.922		0.775		0.890		0.853	
Three or more children	0.805		0.814		1.032		0.763		1.586	*	0.653	*	1.068		0.754		0.993		0.412	**
Desire for children (ref. = no desire)	1.010		0.770		0.900		1.039		0.851		1.160		0.813		0.699		0.810		0.750	
High educated (ref. = low educated)	1.740	*	1.189		1.348	*	1.313		1.400	*	1.503	**	1.267		1.732	**	1.692	***	1.071	
Employed (ref. = not employed)	0.581	**	0.877		0.858		0.805		-		1.046		0.843		0.774		0.677	**	0.789	

Table 8.C Logistic regression analysis for the association between family and socioeconomic characteristics, and the use of medical methods, including sterilized respondents[a]

	Bulgaria 1990s[b]		Bulgaria 2000s		Poland 1990s		Poland 2000s		Lithuania 1990s		Lithuania 2000s		Germany 1990s		Germany 2000s		Austria 1990s		Austria 2000s	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.110	***	0.240	***	0.142	***	0.731	*	0.148	***	0.686	*	2.268	***	20.467	***	2.430	***	3.955	***
Family characteristics																				
Married (ref. = not married)	0.728		1.228		0.380	***	0.805		0.572		1.070		0.766	***	0.869		0.776	*	0.597	***
Number of children (ref. = no children)																				
One child	1.852		0.819		2.397	**	0.677	*	2.597	**	0.862		1.204	*	1.002		1.078		0.606	**
Two children	1.531		0.597	*	1.891	**	0.875		2.822	**	0.873		1.493	***	1.019		1.222		0.972	
Three or more children	0.267		0.366	**	1.599		0.621	*	1.932		0.645		1.014		0.557		0.751		1.253	
Desire for children (ref. = no desire)	1.454		1.404	*	1.952	***	1.459	**	1.505	**	1.228		1.456	***	1.212		1.650	***	2.424	***
Socioeconomic characteristics																				
High educated (ref. = low educated)	1.672	**	1.493	**	2.516	***	1.470	***	1.104		1.204		1.243	**	0.494	***	0.856		0.738	*
Employed (ref. = not employed)	1.151		1.274	*	0.841		1.175		1.085		1.521	**	0.809	**	1.017		0.726	**	1.299	*

Notes. [a] All models are controlled for respondents' age; [b] The country-period only includes female respondents due to data limitations; [c] The Norwegian FFS subsample does not contain any respondents who are not employed. * p < .05, ** p < .01, *** p < .001

Table 8.C.continued

	Czech Republic 1990s		Czech Republic 2000s		Estonia 1990s		Estonia 2000s[b]		Norway[c] 1990s		Norway 2000s		Belgium 1990s		Belgium 2000s		France 1990s		France 2000s	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.809		4.324	***	0.196	***	0.726		1.516	**	3.020	***	3.711	***	5.289	***	3.648	***	5.119	***
Married (ref. = not married)	0.879		1.121		1.110		0.964		0.736	*	0.771	*	0.536	***	0.816		0.692	**	1.492	**
One child	0.848		0.796		2.697	***	3.250	***	1.075		0.570	***	1.655	***	0.557	*	1.302		0.697	
Two children	1.418		0.968		3.885	***	2.253	*	1.340		0.993		2.265	***	1.004		2.058	***	0.947	
Three or more children	1.270		0.854		4.356	***	2.295		1.035		1.029		1.866	***	0.831		1.685	*	1.066	
Desire for children (ref. = no desire)	1.582	**	1.079		1.031		1.972	*	2.270	***	1.504	**	2.287	***	1.110		2.255	***	1.689	**
High educated (ref. = low educated)	1.289		1.038		1.348	*	1.067		0.872		0.964		0.824		1.015		1.048		1.101	
Employed (ref. = not employed)	1.834	***	1.726	***	1.801	***	1.975	**	-		1.142		1.221		1.191		1.380	**	1.512	**

Table 8.D Logistic regression analysis for the association between family and socioeconomic characteristics, and the use of cooperative methods, excluding men and women who rely on both cooperative and medical methods[a]

	Bulgaria 1990s[b] OR	sign	2000s OR	sign	Poland 1990s OR	sign	2000s OR	sign	Lithuania 1990s OR	sign	2000s OR	sign	Germany 1990s OR	sign	2000s OR	sign	Austria 1990s OR	sign	2000s OR	sign
Intercept	0.578	*	3.076	***	0.684	*	0.714	*	0.326	***	1.192		0.102	***	0.043	***	0.128	***	0.189	***
Family characteristics																				
Married (ref. = not married)	0.878		1.002		0.818		1.204		1.670		0.991		0.681	**	0.885		0.780		1.383	*
Number of children (ref. = no children)																				
One child	0.851		0.414	***	1.666	**	0.871		1.259		0.663		0.832		1.323		0.886		1.190	
Two children	1.166		0.491	**	2.109	***	0.852		1.408		0.683		0.906		1.322		1.094		0.846	
Three or more children	0.816		0.401	**	1.728	**	0.988		1.788	*	0.798		0.891		2.553	*	0.676		0.783	
Desire for children (ref. = no desire)	0.904		0.898		0.972		0.847		1.012		0.741	*	0.883		0.809		0.715		0.669	**
Socioeconomic characteristics																				
High educated (ref. = low educated)	1.402	*	0.936		1.558	**	1.189		1.501	***	1.112		1.577	**	2.155	**	1.084		1.890	***
Employed (ref. = not employed)	0.924		1.016		0.986		1.039		1.037		0.921		1.016		1.239		1.412		0.730	*

Notes. [a] All models are controlled for respondents' age; [b] The country-period only includes female respondents due to data limitations; [c] The Norwegian FFS subsample does not contain any respondents who are not employed. * p < .05, ** p < .01, *** p < .001

Table 8.D continued

	Czech Republic 1990s OR	sign	2000s OR	sign	Estonia 1990s OR	sign	2000s[b] OR	sign	Norway 1990s[c] OR	sign	2000s OR	sign	Belgium 1990s OR	sign	2000s OR	sign	France 1990s OR	sign	2000s OR	sign
0.617		0.201	***	1.066		0.627		0.238	***	0.136	***	0.107	***	0.087	***	0.114	***	0.135	***		
0.787		1.039		0.806		0.930		1.426	*	1.729	**	1.005		1.292		1.121		0.545	**		
1.045		1.062		0.829		0.433	*	0.901		0.922		0.741		1.759		0.880		1.146			
0.856		0.838		0.904		0.795		1.121		0.495	**	0.968		1.168		1.027		1.053			
0.775		0.855		0.977		0.983		1.586	*	0.652		1.174		1.477		1.147		0.440	*		
0.995		0.961		0.923		0.975		0.851		1.255		0.857		0.719		0.777		0.753			
1.635	*	1.216		1.200		1.523		1.400	*	1.555	**	1.215		1.598	*	1.669	**	1.194		
0.536	***	0.766		0.816		0.779		-		0.990		0.806		1.053		0.787		0.717			

Table 8.E Logistic regression analysis for the association between family and socioeconomic characteristics, and the use of medical methods, excluding men and women who rely on both cooperative and medical methods[a]

	Bulgaria				Poland				Lithuania				Germany				Austria			
	1990s[b]		2000s		1990s		2000s		1990s		2000s		1990s		2000s		1990s		2000s	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.110	***	0.150	***	0.085	***	0.495	***	0.079	***	0.351	***	2.053	***	15.569	***	2.242	***	3.317	***
Family characteristics																				
Married (ref. = not married)	0.722		1.240		0.334	***	0.796		0.753		1.208		0.799	**	0.858		0.785		0.592	***
Number of children (ref. = no children)																				
One child	1.838		1.294		3.092	***	0.800		3.276	**	1.078		1.266	**	1.185		1.130		0.680	*
Two children	1.492		0.911		1.877	*	1.005		3.724	***	1.063		1.563	***	1.082		1.273		1.063	
Three or more children	0.264		0.580		1.554		0.681		2.280	*	0.715		1.061		0.468	*	0.743		0.985	
Desire for children (ref. = no desire)	1.489	*	1.499	**	2.315	***	1.466	**	1.466	**	1.168		1.457	***	1.117		1.619	***	1.955	***
Socioeconomic characteristics																				
High educated (ref. = low educated)	1.644	**	1.469	**	2.599	***	1.405	**	1.073		1.259		1.224	*	0.477	***	0.848		0.739	*
Employed (ref. = not employed)	1.175		1.337	*	0.813		1.172		1.018		1.506	**	0.796	***	0.958		0.737	*	1.336	*

Notes. [a] All models are controlled for respondents' age; [b] The country-period only includes female respondents due to data limitations; [c] The Norwegian FFS subsample does not contain any respondents who are not employed. * p < .05, ** p < .01, *** p < .001

Table 8.E continued.

	Czech Republic				Estonia				Norway				Belgium				France			
	1990s		2000s		1990s		2000s[b]		1990s[c]		2000s		1990s		2000s		1990s		2000s	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.789		3.567	***	0.174	***	0.580	***	1.516	**	2.804	***	3.611	***	4.147	***	3.240	***	4.108	***
Married (ref. = not married)	0.893		1.186		1.108		1.022		0.736	*	0.760	*	0.527	***	0.808		0.708	**	1.559	**
One child	0.866		0.920		2.760	***	3.200	***	1.075		0.566	***	1.658	***	0.680	***	1.342	*	0.754	
Two children	1.440		1.205		3.965	***	2.388	*	1.340		0.994		2.164	***	1.165		2.123	***	1.012	
Three or more children	1.259		0.903		4.454	***	2.537	*	1.035		1.033		1.693	**	0.928		1.745	*	1.137	
Desire for children (ref. = no desire)	1.596	**	0.958		1.056		1.972	*	2.270	***	1.524	**	2.168	***	0.957		2.248	***	1.673	**
High educated (ref. = low educated)	1.196		1.043		1.222		1.123		0.872		0.960		0.858		1.048		1.025		1.115	
Employed (ref. = not employed)	1.794	***	1.853	***	1.783	***	2.000	**	-		1.127		1.285	*	1.284		1.433	**	1.532	**

Table 8.F1 Logistic regression analysis for the association between family and socioeconomic characteristics, and the use of co-operative methods, additionally controlling for gender of the respondent[a]

| | Bulgaria | | | | Poland | | | | Lithuania | | | | Germany | | | | Austria | | | |
| | 1990s[b] | | 2000s | | 1990s | | 2000s[b] | | 1990s | | 2000s | | 1990s | | 2000s | | 1990s | | 2000s | |
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.522	*	3.423	***	0.817		0.937		0.527	*	1.683	*	0.308	***	0.318	***	0.224	***	0.414	***
Family characteristics																				
Married (ref. = not married)	0.878		1.012		0.814		1.172		1.298		0.867		0.625	***	0.857		0.776		1.256	
Number of children (ref. = no children)																				
One child	0.851		0.391	***	1.638	**	0.772		1.315		0.655	*	0.795		1.018		0.862		0.983	
Two children	1.166		0.464	**	2.147	***	0.785		1.436		0.697		0.892		1.236		0.997		0.773	
Three or more children	0.816		0.371	***	1.760	***	0.906		1.895	*	0.840		0.740		2.283	**	0.634		0.714	
Desire for children (ref. = no desire)	1.107		1.109		1.012		1.138		0.939		1.211		1.003		1.623	**	1.246		1.345	*
Socioeconomic characteristics																				
High educated (ref. = low educated)	1.402	*	1.019		1.614	***	1.257	*	1.508	***	1.152		1.549	***	1.861	**	0.990		1.856	***
Employed (ref. = not employed)	0.924		1.011		0.934		1.015		1.049		0.924		0.893		0.962		1.123		0.600	***

Notes. [a] All models are controlled for respondents' age and gender; [b] The country-period only includes female respondents due to data limitations; [c] The Norwegian FFS subsample does not contain any respondents who are not employed. * p < .05, ** p < .01, *** p < .001

Table 8.F continued.

| | Czech Republic | | | | Estonia | | | | Norway | | | | Belgium | | | | France | | | |
| | 1990s | | 2000s | | 1990s | | 2000s[b] | | 1990s[c] | | 2000s | | 1990s | | 2000s | | 1990s | | 2000s | |
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
	0.717		0.354	***	1.230		0.886		0.211	***	0.279	***	0.100	***	0.311	***	0.227	***	0.346	***
	0.779		1.135		0.830		0.787		1.427	*	1.776	***	1.021		1.010		0.967		0.498	***
	0.998		0.915		0.881		0.563		0.902		0.931		0.740		1.008		0.806		0.826	
	0.858		0.706		0.980		0.715		1.127		0.529	**	0.970		0.843		0.934		0.853	
	0.810		0.782		1.050		0.763		1.595	*	0.689	*	1.171		0.871		1.059		0.428	*
	0.981		1.142		1.056		0.962		1.175		0.840		1.170		1.253		1.192		1.289	
	1.728	*	1.167		1.389	*	1.313		1.402	**	1.590	***	1.198		1.761	**	1.735	***	1.094	
	0.560	**	0.794		0.810		0.805		-		0.968		0.779		0.737		0.630	**	0.759	

Table 8.G Logistic regression analysis for the association between family and socioeconomic characteristics, and the use of medical methods, additionally controlling for gender of the respondent[a]

	Bulgaria 1990s[b]		Bulgaria 2000s		Poland 1990s		Poland 2000s		Lithuania 1990s		Lithuania 2000s		Germany 1990s		Germany 2000s		Austria 1990s		Austria 2000s	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.164	**	0.262	***	0.223	***	0.957		0.216	***	0.848		0.996		20.140	***	1.426		5.352	***
Family characteristics																				
Married (ref. = not married)	0.722		1.181		0.370	***	0.806		0.573		1.055		0.712	***	0.855		0.754	*	0.577	***
Number of children (ref. = no children)																				
One child	1.838		0.869		2.326	**	0.666	*	2.577	**	0.877		1.090		1.031		0.981		0.610	**
Two children	1.492		0.646		1.847	**	0.853		2.797	**	0.891		1.359	**	0.975		1.136		0.951	
Three or more children	0.264		0.407	**	1.559		0.605	*	1.912		0.660		0.892		0.447	*	0.718		0.888	
Desire for children (ref. = no desire)	0.672	*	0.776		0.525	***	0.689	**	0.666	**	0.842		0.743	***	0.987		0.647	**	0.547	***
Socioeconomic characteristics																				
High educated (ref. = low educated)	1.644	**	1.480	**	2.499	***	1.444	***	1.103		1.223		1.214	*	0.498	**	0.916		0.741	*
Employed (ref. = not employed)	1.175		1.385	**	0.943		1.233		1.090		1.483	**	1.240	**	0.983		1.023		1.454	**

Notes. [a] All models are controlled for respondents' age and gender; [b] The country-period only includes female respondents due to data limitations; [c] The Norwegian FHS subsample does not contain any respondents who are not employed. * p < .05, ** p < .01, *** p < .001

Table 8.G continued.

	Czech Republic 1990s		Czech Republic 2000s		Estonia 1990s		Estonia 2000s[b]		Norway 1990s[c]		Norway 2000s		Belgium 1990s		Belgium 2000s		France 1990s		France 2000s	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.839		3.682	***	0.210	***	1.431		3.985	***	3.767	***	6.351	***	4.361	***	8.580	***	6.589	***
Married (ref. = not married)	0.900		1.196		1.106		0.964		0.737	*	0.772	*	0.505	***	0.782		0.688	**	1.473	*
One child	0.834		0.874		2.692	***	3.250	***	1.083		0.553	***	1.671	***	0.586	*	1.320	*	0.691	
Two children	1.371		1.099		3.898	***	2.253	*	1.370		0.952		2.167	***	1.013		2.091	***	0.941	
Three or more children	1.261		0.882		4.343	***	2.295		1.059		0.980		1.706	**	0.781		1.723	*	1.017	
Desire for children (ref. = no desire)	0.652	**	1.083		0.962		0.507	*	0.440	***	0.684	**	0.458	***	1.056		0.443	***	0.621	**
High educated (ref. = low educated)	1.323		1.073		1.335	*	1.067		0.878		0.921		0.883		1.066		1.056		1.066	
Employed (ref. = not employed)	2.070	***	1.935	***	1.783	***	1.975	**	-		1.233		1.384	**	1.248		1.365	**	1.623	**

Appendix 8.H Detailed decomposition analysis of the change in cooperative method use (1990s–2000s)[a]

	Bulgaria				Poland				Lithuania				Germany				Austria			
	Endowments		Effects		Endowments		Effects		Endowments		Effects		Endowments		Effects		Endowments		Effects	
	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign
Family characteristics																				
Marital status																				
Married	0.014		1.402		-0.285		4.505		0.492		-4.655		-0.037		1.251		-0.390		2.449	*
Not married	0.014		-0.062		-0.285		-0.322		0.492		0.182		-0.037		-0.784		-0.390		-1.467	*
Number of children																				
No children	0.404	*	0.758	*	0.025		2.263	***	1.177		1.019		0.237		-1.782		0.452		0.095	
One child	0.461		-1.468		-0.350		-0.537		0.235		-1.246		0.194		-0.690		-0.105		0.626	
Two children	-0.050		-3.742		0.062		-4.694	***	0.295		-1.844		-0.126		-0.425		0.138		-1.453	
Three or more children	-0.185		-0.220		-0.121		-0.403		-0.051		-0.633		0.557		0.657	**	0.112		0.138	
Desire for children																				
No	-0.054		-0.266		0.673		-1.055		0.365		-1.599		-0.565		-1.371	*	0.892	**	-0.495	
Yes	-0.054		0.137		0.673		0.343		0.365		1.588		-0.565		1.575	*	0.892	**	0.386	
Socioeconomic characteristics																				
Education																				
Low educated	0.020		3.098		0.564	*	2.989		-0.023		2.605		0.383		-1.046		-0.094	***	-3.590	**
High educated	0.020		-1.207		0.564	*	-0.308		-0.023		-0.995		0.383		0.190		-0.094	***	0.899	**
Employment status																				
Employed	-0.004		0.862		-0.105		0.770		-0.010		-0.601		-0.052		0.048		0.206	**	-4.162	**
Not employed	-0.004		-0.483		-0.105		-0.145		-0.010		0.132		-0.052		-0.021		0.206	**	1.127	**

Note. [a] All models are controlled for respondents' age. All coefficients are multiplied by 100 for ease of interpretation; [b] The Norwegian FFS subsample does not contain any respondents who are not employed. * p < .05, ** p < .01, *** p < .001

Appendix 8.H continued.

	Czech Republic				Estonia				Norway[b]				Belgium				France			
	Endowments		Effects		Endowments		Effects		Endowments		Effects		Endowments		Effects		Endowments		Effects	
	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign
	-0.280		3.558		0.381		-0.387		-1.006	**	1.095		-0.015		0.010		-0.220	*	-2.356	*
	-0.280		-0.434		0.381		0.188		-1.006	**	-0.463		-0.015		-0.004		-0.220	*	3.659	*
	0.635		0.186		0.558		0.670		0.511	*	1.353	*	-0.033		0.549		0.134	*	1.255	
	-0.145		-0.075		-0.050		-0.961		-0.331		1.648	*	-0.048		0.741		-0.114		1.383	
	0.154		-1.204		0.034		-0.319		0.150	**	-2.036	*	-0.053		-0.352		0.078		0.716	
	0.060		0.149		-0.030		-0.178		-0.046		-0.889	*	-0.056		-0.279		-0.014	*	-1.577	*
	0.054		-0.924		-0.001		0.683		0.131		0.849		0.095		-0.178		-0.077		-0.184	
	0.054		0.844		-0.001		-0.726		0.131		-1.406		0.095		0.214		-0.077		0.302	
	0.075		4.095	***	0.425		0.289		0.494	**	-0.395		1.312	**	-1.387		0.063	*	3.278	*
	0.075		-0.460	***	0.425		-0.066		0.494	**	0.121		1.312	**	0.132		0.063	*	-0.806	*
	0.090		2.992	***	0.183		-0.484		-		-		0.149		-0.218		-0.034		0.965	
	0.090		-1.120	***	0.183		0.158		-		-		0.149		0.039		-0.034		-0.397	

Appendix 8.I Detailed decomposition analysis of the change in medical method use (1990s-2000s)[a]

	Bulgaria Endowments coef	sign	Bulgaria Effects coef	sign	Poland Endowments coef	sign	Poland Effects coef	sign	Lithuania Endowments coef	sign	Lithuania Effects coef	sign	Germany Endowments coef	sign	Germany Effects coef	sign	Austria Endowments coef	sign	Austria Effects coef	sign
Family characteristics																				
Marital status																				
Married	-0.274		3.563		0.281		5.114	*	-0.174		6.327		-0.013		0.601		1.136	***	-1.987	
Not married	-0.274		-0.158		0.281		-0.365	*	-0.174		-0.248		-0.013		-0.376		1.136	***	1.190	
Number of children																				
No children	0.181		0.204		0.028		1.588	***	0.743		1.377	**	-0.126		1.929		0.395		0.818	
One child	-0.345	*	-2.492	*	-0.329		-1.127	**	-0.038		-2.026		-0.070		0.865		0.302	**	-2.176	**
Two children	-0.028		-4.118	*	-0.054		-0.172		-0.098		-3.203	*	0.104		-0.359		-0.175		-0.535	
Three or more children	-0.268	**	0.592		0.453		-0.733		0.231		-0.582		-0.274	**	-0.540	*	-0.037		0.908	*
Desire for children																				
No	0.098	*	-0.543		-1.395	*	-1.607		-0.275		-1.315		0.009		-1.368		-1.953	***	1.045	
Yes	0.098	*	0.279		-1.395	*	5.224		-0.275		1.305		0.009		1.571		-1.953	***	-0.816	
Socioeconomic characteristics																				
Education																				
Low educated	-0.317	**	0.338		0.733	***	3.562	**	-0.042		-0.728		-0.186	**	6.283	***	0.055	*	1.010	
High educated	-0.317	**	-0.132		0.733	***	-0.367	**	-0.042		0.278		-0.186	**	-1.142	***	0.055	*	-0.253	
Employment status																				
Employed	-0.033	*	0.667		-0.243		2.056		-0.395	**	2.942		0.012		0.875		-0.174	*	4.875	**
Not employed	-0.033	*	-0.374		-0.243		-0.388		-0.395	**	-0.645		0.012		-0.385		-0.174	*	-1.320	**

Notes. [a] All models are controlled for respondents' age. All coefficients are multiplied by 100 for ease of interpretation; [b] The Norwegian FFS subsample does not contain any respondents who are not employed. * p < .05, ** p < .01, *** p < .001

Appendix 8.1 continued

	Czech Republic				Estonia				Norway[b]				Belgium				France			
	Endowments		Effects		Endowments		Effects		Endowments		Effects		Endowments		Effects		Endowments		Effects	
	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign	coef	sign
	-0.473		3.125	*	0.069		-1.056		0.821	*	0.392		0.502		2.674		0.178	*	2.516	***
	-0.473		-0.381	*	0.069		0.514		0.821	*	-0.166		0.502		-1.151		0.178	*	-3.907	***
	0.132		0.326		-1.560	**	0.741	*	0.433	***	1.260		-0.030		4.958	**	0.046		2.521	*
	0.173		1.092		0.100	**	2.861		1.259		-2.508	**	0.260	*	-1.736	*	0.395	*	-0.732	
	-0.120		-1.113		-0.107		-2.607		-0.092		-0.570		0.099		-0.510		0.039		-1.316	
	0.069		-0.724		-0.178		-1.724		0.099		0.674		-0.017		-0.185		0.005		-0.009	
	0.027		-3.086	*	-0.029	*	3.559		0.651	**	-1.772	*	0.021		-3.629	***	0.209	**	-1.011	
	0.027		2.819	*	-0.029	*	-3.783		0.651	**	2.934	*	0.021		4.380	***	0.209	**	1.658	
	0.036		1.817		0.119		2.044		-0.077		-0.906		0.250		-2.151		0.160		-0.376	
	0.036		-0.204		0.119		-0.466		-0.077		0.279		0.250		0.205		0.160		0.093	
	-0.324		0.209		-0.672	**	0.807		-		-		-0.114		-0.491		0.086	**	0.547	
	-0.324		-0.078		-0.672	**	-0.264		-		-		-0.114		0.088		0.086	**	-0.225	

Appendix 9.A Sources from which the regional data information was taken

Variable	Country	Source
% Part-time workers	Austria, Belgium, France, Germany, Bulgaria, Czech Republic, Lithuania, Poland, Romania	Eurostat
	Georgia, Russian Federation	Aggregated data GGS, total weighted samples
% Religious	All countries	Aggregated data GGS, total weighted samples
Ratio of female to male income	All countries	Aggregated data GGS, total weighted samples
% Women in regional politics	Austria	Bundeskanzleramt Österreich, Bundesministerin für Frauen und Öffentlichen Dienst (2010). *Frauenbericht 2010. Bericht betreffend die Situation von Frauen in Österreich im Zeitraum von 1998 bis 2008*. Wien: Bundeskanzleramt Österreich.
	Belgium	Instituut voor de Gelijkheid van Mannen en Vrouwen (2006). *De deelname van mannen en vrouwen aan de Belgische politiek*. Brussel: Instituut voor de Gelijkheid van Mannen en Vrouwen.
	France	Website Ministère de l'Intérieur
	Germany	Bundesministerium für Familie, Senioren, Frauen und Jugend (2005). *Gender-Datenreport. Datenreport zur Gleichstellung von Frauen und Männern in der Bundesrepublik Deutschland*. München: Waltraud Corneliben.
	Bulgaria	Sofia News Agency
	Czech Republic	Database Inter-Parliamentary Union
	Georgia	Women's Political Resource Centre (2006). *Local government elections of 2006*. Tbilisi: WPRC.
	Lithuania	Database Inter-Parliamentary Union
	Poland	The Institute of Public Affairs (2011). *Kandydatki w wyborach samorządowych w 2010*. Warsaw: The Institute of Public Affairs.
	Romania	Macarie, Felicia Cornelia, Neamtu, Bogdana, and Creta, Simona Claudia (2011). Male dominated political parties in Romania. A model of organizational culture, *Managerial Challenges of the Contemporary Society* 2.
	Russian Federation	United Nations Development Programme (2007). *National Human Development Report Russian Federation 2006/2007. Russia's regions: Goals, challenges, achievements*. Moscow: UNDP.

Appendix 11.A Descriptive statistics per country[a]

| | Mean (SD) / Percentage | | | |
	Austria	Belgium	France	Germany
N	1482	1284	1618	1614
Contraceptive method				
Male reversible	16.5	7.1	5.3	8.1
Female reversible	48.9	54.3	73.5	53.2
Male permanent	9.0	13.4	0.8	5.5
Female permanent	10.0	13.5	8.3	13.2
No method	15.7	11.8	12.1	20.1
Man's education				
Low	7.3	23.9	22.9	5.4
Middle	70.2	39.6	52.3	59.3
High	22.5	36.5	24.8	35.3
Woman's education				
Low	15.9	18.9	24.7	10.2
Middle	69.4	36.4	45.9	68.3
High	14.8	44.7	29.4	21.6
Relative education	-0.16 (0.61)	0.13 (0.72)	0.03 (0.71)	-0.19 (0.60)
Division of housework	-0.88 (0.68)	-0.71 (0.75)	-0.84 (0.73)	-0.58 (0.44)
Decision-making	0.18 (0.33)	0.18 (0.36)	0.31 (0.41)	0.12 (0.22)
Man's age	41.11 (6.08)	43.46 (6.80)	43.69 (6.93)	43.64 (6.40)
Woman's age	38.13 (5.04)	40.81 (5.67)	40.68 (5.42)	40.74 (5.35)
Marital status				
Married	83.8	82.0	81.0	91.4
Cohabiting	16.2	18.0	19.0	8.6
Number of children				
0	7.0	6.5	3.4	8.3
1	18.4	17.3	13.4	25.0
2	51.8	49.1	49.8	46.8
≥ 3	22.9	27.0	33.4	20.0

Notes. [a] For relative education, division of housework and decision-making, a negative score indicates higher male power whereas a positive score indicates higher female power.

Appendix 11.B Descriptive statistics: Comparison between couples with no desire for children (N = 4924) and couples irrespective of childbearing desire (N = 7995) [a]

	Sample no desire for children	Sample irrespective of desire for children	
	Mean (SD) / Percentage	Mean (SD) / Percentage	χ^2 / F
Contraceptive method			40.93***
Male reversible	11.2	11.5	
Female reversible	70.5	65.6	
No method	18.4	22.9	
Man's education			11.31**
Low	14.0	12.8	
Middle	56.2	54.6	
High	29.9	32.6	
Woman's education			29.79***
Low	16.7	15.2	
Middle	55.6	52.6	
High	27.7	32.2	
Relative education	-0.05 (0.67)	-0.03 (0.68)	3.15
Division of housework	-0.76 (0.66)	-0.70 (0.67)	23.56***
Decision-making	0.19 (0.34)	0.18 (0.35)	4.557*
Man's age	42.63 (6.71)	39.93 (7.44)	431.82***
Woman's age	39.68 (5.53)	37.07 (6.41)	562.10***
Marital status			126.35***
Married	83.3	74.9	
Cohabiting	16.7	25.1	
Number of children			337.42***
0	6.5	15.6	
1	19.8	24.7	
2	49.7	41.0	
≥ 3	24.0	18.6	

Notes. [a] For relative education, division of housework and decision-making, a negative score indicates higher male power whereas a positive score indicates higher female power.

Appendix 11.C Parameter estimates for the multinomial logistic diagonal reference model with control variables, relative education, division of housework and decision-making power, irrespective of childbearing desire (N = 7995) [a]

	Male reversible	Female reversible (ref.)	No method
Salience parameter		0.453	
Odds ratios for the homogamous couples with educational level i (probability between brackets)			
m_{11} (Ref.)	0.235 (9.5%)	1 (40.2%)	1.252 (50.3%)
m_{22}	0.249 (13.7%)	1 (55.2%)	0.562 (31.1%)***
m_{33}	0.528 (25.4%)***	1 (48.1%)	0.552 (26.6%)***
Odds ratios for the control variables			
Age man	0.982*		1.027***
Age woman	1.040***		1.059***
Married (Ref.)			
Cohabiting	0.963		0.647***
0 children (Ref.)			
1 child	1.351*		0.702***
2 children	1,263		0.442***
≥3 children	1,242		0.531***
Desire for children	1.426***		3.407***
Odds ratios for the power measures			
Relative education	1,015		0.949
Division of housework	1.239**		1,081
Decision-making	0.836		0.832

Notes. [a] μ_{11} = both partners are low educated (ref.), μ_{22} = both partners are middle educated, μ_{33} = both partners are high educated. For age, these specifications resulted in the best model fit. For relative education, division of housework and decision-making, a score below 1 indicates higher male power than averagely whereas a score above 1 indicates higher female power than averagely. Models controlled for country dummies. For low educated couples (μ_{11}), the probability of being in the category of male reversible contraception is calculated as [0.235/(0.235+1+1.252)] x 100. ***p<.001; **p<.01; *p<.05

Appendix 12.A Prevalence of contraceptive method per country and according to women's childbearing intention

	N	Women who intend to have children (N = 8427)					Women who do not intend to have children (N = 23,205)						
		No	Trad. male	Trad. female	Mod. rev. male	Mod. rev. female	No	Trad. male	Trad. female	Mod. rev. male	Mod. rev. female	Mod. perm. male	Mod. perm. female
		%	%	%	%	%	%	%	%	%	%	%	%
Total NWE	**5927**	**13.7**	**0.7**	**1.1**	**13.2**	**71.3**	**15.4**	**0.4**	**1.5**	**8.3**	**61.9**	**3.9**	**8.6**
Austria [a]	1777	13.0	0.7	1.7	18.8	65.9	13.7	0.2	1.5	12.7	49.3	9.6	13.0
France	1584	8.1	0.5	0.9	8.3	82.2	10.2	1.0	0.4	5.1	74.6	1.1	7.6
Germany	1293	17.8	0.9	0.5	5.5	75.3	17.7	0.3	4.1	6.3	52.5	5.3	13.8
Norway	1273	25.6	0.8	0.0	12.8	60.8	19.6	0.1	0.1	9.5	70.8	_[b]	_[b]
Total CEE	**25.705**	**27.5**	**21.3**	**4.6**	**18.3**	**28.2**	**24.0**	**33.2**	**5.3**	**8.6**	**24.9**	**0.1**	**3.9**
Albania	3749	28.0	65.8	0.1	3.6	2.4	16.1	73.9	0.0	1.7	4.6	0.0	3.7
Armenia	2493	40.6	33.1	2.5	12.7	11.1	21.6	47.5	4.1	9.5	16.6	0.0	0.6
Azerbaijan	3629	47.7	36.2	2.4	2.2	11.5	32.6	46.7	3.9	2.2	14.4	0.0	0.3
Bulgaria	2082	24.0	25.1	1.9	28.8	20.3	28.0	32.9	2.3	12.7	21.0	0.1	3.0
Czech Republic	1025	12.0	5.7	0.9	14.8	66.6	21.2	7.8	0.4	13.4	46.6	0.1	10.4
Estonia [a]	852	22.4	1.6	1.6	20.4	54.0	20.8	2.2	6.8	11.1	59.0	0.0	0.2
Georgia	1195	33.5	1.4	22.9	11.5	30.7	46.4	1.5	12.6	5.7	22.2	0.2	11.4
Lithuania	981	24.1	7.4	7.4	22.8	38.3	34.2	8.9	7.2	10.1	33.9	0.7	5.1
Moldova	3233	17.6	22.7	4.2	17.0	38.4	9.9	27.3	4.6	6.0	44.7	0.0	7.5
Poland	1844	35.8	4.9	5.8	28.6	24.9	43.3	6.2	7.0	21.8	21.7	_[b]	_[b]
Romania	1265	16.3	3.1	14.0	21.4	45.1	27.4	4.9	19.1	12.1	28.1	0.1	8.3
Russian Federation	906	12.3	5.3	10.3	19.9	52.2	15.7	6.4	10.7	13.9	42.6	0.2	10.4
Ukraine	2451	26.8	13.7	3.3	31.1	25.2	15.7	17.5	8.1	18.4	38.8	0.0	1.4

Notes. [a] Two countries applied an alternative age range as compared to the other countries. In Austria, only women between 18 and 45 were selected for the questionnaire and in Estonia, the minimum age of the respondents was 21; [b] The data from Norway and Poland does not contain information on sterilization.

Appendix 12.B The association between individual-level, couple-level, and country-level gender inequality, and contraceptive use and division for women with a childbearing desire, inclusive cross-category use (N$_{women}$ = 9332; N$_{countries}$ = 17)[a]

	Contraceptive use (ref. = modern reversible method only)												Contraceptive division (ref. = female method only)											
	No method				Traditional method only				Traditional method in combination with modern reversible				No method				Male method only				Male method in combination with female method			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	0.572	***	0.617	***	0.421	***	0.445	***	0.289	***	0.291	***	0.690	**	0.736	*	0.852		0.874		0.495	***	0.502	***
Education																								
Low	1.644	***			1.400	**			1.043				1.532	***			1.185				1.109			
Middle	1.165	***			1.178	***			1.046				1.104	**			1.006				0.945			
High (ref.)																								
Studying	0.520	***			0.758	*			0.876				0.444	***			0.741	***			0.979			
Occupational status																								
Employed (ref.)																								
Not employed	1.354	***			1.180	***			1.090				1.441	***			1.244	***			1.066			
Relative education																								
Equally educated (ref.)																								
Woman higher educated			1.036				1.001				0.967				0.996				0.910	*			0.909	
Man higher educated			1.097				1.123	*			1.248	**			1.048				1.012				1.037	
Studying partner			0.599	***			0.800	*			0.938				0.551	***			0.803	**			1.015	
Relative occupational status																								
Both (not) employed (ref.)																								
Woman employed, man not employed			0.968				1.192				0.957				0.927				1.010				0.892	
Man employed, woman not employed			1.300	***			1.176	***			1.059				1.366	***			1.208	***			1.005	
GII	1.033	**	1.035	**	1.071	***	1.072	***	1.028		1.029		1.035	**	1.037	**	1.045	**	1.046	**	1.014		1.014	

Notes. [a] All models controlled for age, age squared, partner status, parity, urbanity, and Gini. ***p<.001, **p<.01, *p<.05

Appendix 12.C The association between individual-level, couple-level, and country-level gender inequality, and contraceptive use and division for women with no childbearing desire, inclusive cross-category use ($N_{women} = 24{,}734$; $N_{countries} = 17$)[a]

	Contraceptive use (ref. = modern reversible method only)								Contraceptive division (ref. = female method only)					
	No method		Traditional method only		Traditional method in combination with modern reversible		Modern permanent method only		No method		Male method only		Male method in combination with female method	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	0.731 **	0.790 *	0.581 **	0.618 **	0.264 ***	0.252 ***	0.310 ***	0.330 ***	0.715 **	0.758 *	0.803	0.831	0.426 ***	0.405 ***
Education														
Low	1.494 ***		1.168 **		0.886		1.298 **		1.430 ***		1.087		0.893	
Middle	1.168 ***		1.121 ***		0.927		1.157 **		1.126 **		1.045		0.878	
High (ref.)														
Studying	0.750 *		0.763		0.989		1.158		0.735 ***		0.968 ***		1.281	
Occupational status														
Employed (ref.)														
Not employed	1.205 ***		1.117 ***		1.004		1.138 **		1.190 ***		1.101 ***		1.027	
Relative education														
Equally educated (ref.)														
Woman higher educated		0.997		0.993		1.007		1.027		0.986		0.964 *		1.022
Man higher educated		1.023		0.956		0.926		1.052		1.024		0.974		0.908
Studying partner		0.907		0.803 *		0.996		1.139		0.938 ***		0.973 **		1.121
Relative occupational status														
Both (not) employed (ref.)														
Woman employed, man not empl.		1.114 *		1.069		1.003		1.168 *		1.079		0.998		1.003
Man employed, woman not empl.		1.193 ***		1.092 ***		1.009		1.132 **		1.188 ***		1.092 ***		1.027
GII	1.025 **	1.027	1.079 ***	1.080 ***	1.035 ***	1.035 *	1.014	1.014	1.021 **	1.022 **	1.038 **	1.038 **	1.017	1.017

Notes. [a] All models controlled for age, age squared, partner status, parity, urbanity, and Gini. ***p<.001, **p<.01, *p<.05

Appendix 12.D Descriptive statistics for the main individual-level, couple-level, and country-level independent variables per country for women with a childbearing desire (N = 8427)

	Individual socioeconomic position						Relative education			Relative socioeconomic position				GII
	Education				Occupational status							Relative occupational status		
	Low	Middle	High	Studying	Employed	Not employed	Equally educated	Woman higher educated	Man higher educated	Studying partner	Both (not) employed	Woman employed, man not employed	Man employed, woman not employed	Mean
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Total NWE	**2.8**	**42.5**	**38.4**	**16.3**	**61.0**	**39.0**	**59.8**	**17.1**	**9.9**	**13.2**	**64.3**	**6.2**	**29.4**	**25.9**
Austria [a]	0.6	50.5	36.0	13.0	63.0	37.0	62.7	16.2	10.3	10.8	64.9	5.6	29.5	30.0
France	7.6	32.6	40.9	18.9	62.8	37.2	54.1	20.8	11.5	13.6	67.2	6.0	26.8	26.0
Germany	1.4	52.1	29.7	16.9	51.1	48.9	65.3	9.1	11.0	14.6	60.3	7.8	32.0	24.0
Norway	0.4	30.4	48.4	20.8	58.8	41.2	58.0	18.8	4.4	18.8	59.6	7.6	32.8	23.4
Total CEE	**7.7**	**52.6**	**35.2**	**4.4**	**45.6**	**54.4**	**70.7**	**14.4**	**10.7**	**4.2**	**49.6**	**2.9**	**47.5**	**45.4**
Albania	56.8	27.2	15.9	0.1	25.8	74.2	68.1	13.0	18.7	0.3	25.9	0.1	73.9	54.5
Armenia	0.4	73.7	25.9	0.0	18.4	81.6	77.8	8.1	10.2	3.9	30.6	0.9	68.5	57.0
Azerbaijan	1.9	82.0	16.1	0.0	15.0	85.0	79.8	7.1	13.2	0.0	18.9	0.6	80.5	55.3
Bulgaria	6.9	55.2	28.8	9.1	50.4	49.6	70.1	14.1	7.2	8.5	56.0	8.0	36.0	39.9
Czech Republic	0.0	55.7	16.3	28.0	40.7	59.3	72.6	6.0	6.6	14.8	56.3	2.1	41.6	33.0
Estonia [a]	0.8	36.4	53.2	9.6	65.2	34.8	53.6	14.0	22.4	10.0	66.8	2.8	30.4	40.9
Georgia	0.0	42.7	52.3	5.0	23.9	76.1	67.4	17.9	8.7	6.0	43.1	3.2	53.7	59.7
Lithuania	0.5	38.1	47.5	14.0	55.6	44.4	62.4	19.0	8.9	9.6	60.2	3.3	36.5	35.9
Moldova	0.8	66.4	32.8	0.0	54.6	45.4	77.9	13.5	8.7	0.0	58.1	4.0	37.9	42.9
Poland	4.9	55.6	36.1	3.4	54.9	45.1	67.0	22.4	7.9	2.7	55.7	3.8	40.5	32.5
Romania	1.9	67.3	22.2	8.6	62.3	37.7	73.5	11.3	8.6	6.6	63.8	3.9	32.3	47.8
Russian Federation	0.0	26.2	72.1	1.7	58.8	41.2	58.8	28.2	10.6	2.3	55.8	7.6	36.5	44.2
Ukraine	0.3	38.2	59.3	2.3	66.8	33.2	70.7	14.2	9.2	5.9	66.4	1.5	32.1	46.3

Notes. [a] Two countries applied an alternative age range as compared to the other countries. In Austria, only women between 18 and 45 were selected for the questionnaire and in Estonia, the minimum age of the respondents was 21.

Appendix 12.E Descriptive statistics for the main individual-level, couple-level, and country-level independent variables per country for women with no childbearing desire (N = 23,205)

	Individual socioeconomic position						Relative socioeconomic position							GII
	Education				Occupational status		Relative education				Relative occupational status			
	Low	Middle	High	Studying	Employed	Not employed	Equally educated	Woman higher educated	Man higher educated	Studying partner	Both (not) employed	Woman employed, man not employed	Man employed, woman not employed	Mean
	%	%	%	%	%	%	%	%	%	%	%	%	%	
Total NWE	**5.6**	**56.6**	**36.1**	**1.7**	**75.9**	**24.1**	**66.5**	**16.9**	**14.9**	**1.6**	**74.8**	**3.8**	**21.4**	**25.9**
Austria [a]	0.5	69.8	28.8	0.8	75.3	24.7	70.2	12.3	16.6	0.8	74.8	2.4	22.8	30.0
France	21.4	43.4	32.8	2.4	75.3	24.7	59.4	22.4	16.7	1.5	73.6	4.9	21.4	26.0
Germany	0.5	67.4	31.3	0.8	67.0	33.0	71.0	9.2	18.6	1.1	67.8	3.6	28.6	24.0
Norway	0.1	46.0	51.1	2.7	86.3	13.7	65.5	23.9	7.5	3.1	83.4	4.0	12.6	23.4
Total CEE	**10.0**	**64.8**	**25.0**	**0.3**	**51.6**	**48.4**	**76.4**	**11.1**	**11.6**	**0.9**	**52.5**	**4.3**	**43.1**	**45.4**
Albania	52.6	38.9	8.5	0.0	37.7	62.3	68.6	11.1	20.3	0.0	37.7	0.0	62.3	54.5
Armenia	0.6	81.4	17.7	0.3	31.7	68.3	81.2	6.4	9.3	3.2	36.1	2.0	61.9	57.0
Azerbaijan	2.5	88.1	9.4	0.0	20.7	79.3	82.5	4.3	13.2	0.0	24.4	1.1	74.5	55.3
Bulgaria	5.8	72.1	22.1	0.1	67.4	32.6	82.2	11.8	5.9	0.1	68.2	12.1	19.7	39.9
Czech Republic	0.0	85.7	14.0	0.3	73.3	26.7	84.7	6.3	8.8	0.1	75.2	2.9	21.9	33.0
Estonia [a]	0.2	40.9	58.8	0.2	78.6	21.4	62.1	19.4	18.3	0.2	76.4	4.8	18.8	40.9
Georgia	0.9	44.8	54.2	0.0	37.9	62.1	68.4	16.0	15.7	0.0	46.0	7.8	46.3	59.7
Lithuania	0.0	41.1	58.6	0.3	79.6	20.4	64.1	24.5	11.1	0.3	75.5	7.3	17.2	35.9
Moldova	0.9	81.0	18.2	0.0	65.0	35.0	85.2	8.3	6.5	0.0	64.7	5.4	30.0	42.9
Poland	6.7	66.7	26.5	0.1	63.6	36.4	72.0	20.0	7.9	0.1	61.5	9.2	29.3	32.5
Romania	2.7	84.2	13.0	0.1	65.6	34.4	85.1	5.1	9.6	0.2	63.6	8.6	27.8	47.8
Russian Federation	0.2	27.4	72.4	0.0	76.9	23.1	65.1	22.3	12.6	0.0	69.9	9.1	21.0	44.2
Ukraine	0.1	40.5	57.0	2.3	78.2	21.8	67.9	17.5	8.3	6.4	77.9	1.5	20.6	46.3

Notes. [a] Two countries applied an alternative age range as compared to the other countries. In Austria, only women between 18 and 45 were selected for the questionnaire and in Estonia, the minimum age of the respondents was 21.

Appendix 12.F Percentages and percentage differences in contraceptive method by European region

	Women who intend to have children (N = 8427)				Women who do not intend to have children (N = 23,205)			
	NWE	CEE	difference	sign.[a]	NWE	CEE	difference	sign.[a]
No method	13.7	27.5	13.8	***	15.4	24.0	8.7	***
Traditional male method	0.7	21.3	20.6	***	0.4	33.2	32.8	***
Traditional female method	1.1	4.6	3.6	***	1.5	5.3	3.8	***
Modern reversible male method	13.2	18.3	5.1	***	8.3	8.6	0.3	
Modern reversible female method	71.3	28.2	43.1	***	61.9	24.9	37.0	***
Modern permanent male method	-	-	-	-	3.9	0.1	3.8	***
Modern permanent female method	-	-	-	-	8.6	3.9	4.7	***

Notes. [a] z-score calculated by dividing the percentage difference by the standard error of the percentage difference. ***p<.001, **p<.01, *p<.05

Appendix 12.G Logistic multilevel analyses for the association between individual-level, couple-level, and country-level gender inequality, and contraceptive use, by contraceptive division (ref. = female method)

	Women who intend to have children								Women who do not intend to have children											
	Traditional method (N_women = 1735; N_countries = 17) Male method [a]				Modern reversible method (N_women = 4628; N_countries = 17) Male method [a]				Traditional method (N_women = 7447; N_countries = 17) Male method [a]				Modern reversible method (N_women = 9271; N_countries = 17) Male method [a]				Modern permanent method (N_women = 1261; N_countries = 15) Male method [a]			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign	OR	sign
Intercept	1.661		1.843	*	0.635	**	0.622	**	1.310		1.572		0.565	***	0.523	***	0.242	***	0.206	***
Education																				
Low	1.642				0.872				2.344	***			0.988				0.992			
Middle	1.513	***			0.876	**			1.428	***			0.870	***			0.848			
High (ref.)																				
Studying	0.989				0.649	***			1.265				0.872				1.449			
Occupational status																				
Employed (ref.)																				
Not employed	0.950				1.267	***			1.081				1.123	**			0.838			
Relative education																				
Equally educated (ref.)																				
Woman higher educated			0.912				0.914				0.880				1.025				1.155	
Man higher educated			1.101				0.935				0.946				1.054				1.113	
Studying partner			0.978				0.788	**			0.884				1.109				1.620	
Relative occupational status																				
Both (not) employed (ref.)																				
Woman employed, man not employed			1.284				0.954				1.104				0.975				1.129	
Man employed, woman not employed			1.058				1.216	***			1.167	**			1.091	*			0.875	
GII	1.022		1.027		1.024	*	1.025	*	1.047		1.048		1.013		1.013		0.928	**	0.928	**

Notes. [a] All models controlled for age, age squared, partner status, parity, urbanity, and Gini. ***p<.001, **p<.01, *p<.05

ENGLISH SUMMARY

Since its introduction in the 1960s, the birth control pill has been hailed by many as a symbol of women's freedom and equality. It has been credited with significant steps forward in the advancement of women's rights and agency, given that it enabled them to plan family formation more accurately and to achieve their personal and professional goals more easily. Hence, it is remarkable to note that more than half a century later, effective contraceptive use is far from trouble-free in many advanced economies. Paradoxically, a significant proportion of sexually-active women who are not seeking pregnancy practice contraception inconsistently, switch from highly-effective to less-effective methods, or abandon contraceptive use altogether in countries were effective birth control is considered the default option.

The traditional line of thinking considers contraception as a choice located in the individual – most often the woman – and shaped by the effectiveness of the method. Accordingly, many scholars start off from the underlying assumption of a linear transition toward a "perfect contraceptive society", in which less-effective methods logically give way to more-effective methods, and in which people choosing for less-effective contraception are perceived as irrational, uninformed or uncommitted to contraception. Substantial insights have been gained into how effective contraceptive use is closely tied to individuals' socioeconomic advantage or fertility intentions, but many questions remain unanswered. Why are the higher educated more likely to switch from more-effective pills to less-effective condoms, compared with the lower educated? What explains the persistently high levels of natural family planning in many Central and Eastern European countries, despite the increasing availability of highly-effective contraceptives for multiple decades?

Recent developments have redefined contraceptive behavior as a social practice rather than as an individual choice. On the one hand, scholars emphasize the dyadic nature of contraceptive decision making. Contraception is often employed in the context of a relationship and empirical evidence confirms that both partners have at least some say about the contraceptive method used. On the other hand, it is increasingly acknowledged that individual and couple decisions are influenced by the sociocultural context in which they are made. This dissertation is based on and adds to these research lines in order to contextualize contraception and to advance understanding of the "contraceptive paradox" in European societies. The objective is threefold: by including men in the

analyses, I acknowledge that contraception is not only a woman's issue; by adopting a couple perspective, I consider contraception a couple's rather than an individual's responsibility; by paying attention to the broader reproductive context in which people reside, I recognize that decisions are not negotiated in a vacuum.

To this end, the empirical part of the thesis is subdivided into two main parts. In the first, more descriptive step, I aim to extend knowledge on the current position of European contraceptive use. Previous research has most often been carried out in the United States, and studies in Europe are usually limited to single countries or a small group of countries, which results in limited knowledge of how contraception use varies among different regional contexts across the continent. In the second, more explanatory step, I examine how contraceptive behavior in couples can be explained by a combination of men's and women's individual characteristics, couple dynamics, and the macro context. Mostly data from the Generations and Gender Survey (wave 1, collected between 2004 and 2011) is used, given that this is among the most recently available, nationally-representative, and comparable data for contraceptive use in Europe, and information is included on the characteristics of the respondent, his/her partner, and the household. Before proceeding to the main results, it is important to note that all my findings apply to a select subsample only: those who are identified in need of contraception (i.e., men and women in a heterosexual relationship, who ever had sexual intercourse, who are fertile – however, in some of the empirical studies including those who are sterilized – who are not (trying to get) pregnant, and who had no desire for children at the time of the survey).

Four sets of results are noteworthy. First, the remarkable "East-West" gap in contraceptive use is confirmed, with Northern and Western European residents being more likely to report using highly-effective contraceptives, among which are the pill, long-acting reversible methods (e.g., intra-uterine devices), and sterilization, and Central and Eastern European residents being characterized by relatively higher use of natural family planning and condoms. At the same time, there is substantial variation in contraceptive use *within* both regions. Second, contraceptive choices are undeniably guided by individuals' socioeconomic position and appraisal of the costs related to contraceptive failure. In some cases, however, contraceptive efficacy is only of secondary importance, leading higher-educated men and women for instance to settle for less-effective methods such as condoms. Third, imbalances in partnerships impact contraceptive decision making in complex ways. Partners who are dissimilar in their

occupational status are more likely to practice less-effective contraceptive behavior than partners who are similar in this regard. When looking at the division of housework and decision making, partner asymmetry has a gendered impact: men's higher marital power (i.e., doing fewer chores, making more decisions) relates to the uptake of commonly used female reversible methods (e.g., the pill), whereas women's higher power is associated with a higher likelihood of practicing contraceptive alternatives (e.g., the condom). Fourth, evidence is found that the implementation of part-time employment, and higher levels of contextual gender equality and secularization relate to more-effective, female contraceptive behavior.

I believe the most important "take-home-message" from this dissertation is that effective contraceptive behavior is not to be taken for granted. Although it is considered the standard in many European countries, a great many couples struggle in the search for a method of contraception that aligns with their preferences and lifestyles. Policy makers and health care professionals remain important stakeholders in guarding and warranting, among other things, the distribution of correct information on the full range of contraceptive options among all groups in society (e.g., by providing comprehensive sexuality education), the enhancement of contraceptive convenience in order to lower barriers to effective use (e.g., instead of prescribing three months of use of the pill, women can get prescriptions for one year), the encouragement for men to engage in the reproductive domain (e.g., health care professionals might also ask about men's preferences when a new method is chosen), and the integration of sexual and reproductive health and rights as a component of gender equality policy. After all, there is more to the pill than women's freedom alone.

NEDERLANDSTALIGE SAMENVATTING

De anticonceptiepil werd in de jaren 60 onthaald als een symbool voor vrijheid en gelijkheid van de vrouw. Het stelde vrouwen immers in staat om beter te plannen wanneer ze aan gezinsuitbreiding wilden beginnen, en bijgevolg ook om hun persoonlijke en professionele doelstellingen te bereiken. Dit maakt het opmerkelijk dat effectief anticonceptiegebruik vandaag de dag echter toch niet vanzelfsprekend blijkt in veel ontwikkelde landen. Paradoxaal genoeg gebruikt een aanzienlijke groep van de vrouwen die seksueel actief is en geen kinderen wil op dat moment, anticonceptie niet consistent, wisselt ze effectieve methoden in voor minder effectieve, of gebruikt ze eenvoudigweg geen anticonceptie terwijl het gebruik van effectieve anticonceptiva wel als norm wordt beschouwd.

De klassieke insteek in onderzoek is een focus op anticonceptie als individuele keuze – meestal van de vrouw – die grotendeels bepaald wordt door de effectiviteit van de methode. Veel onderzoekers vertrekken van het idee dat we rechtlijnig op weg zijn naar een "perfecte anticonceptiesamenleving", waarbij minder effectieve methoden vervangen worden door effectieve en waarin mensen die kiezen voor minder effectieve anticonceptie gezien worden als irrationeel, ongeïnformeerd en niet toegewijd. Dit onderzoek leverde waardevolle inzichten op omtrent hoe anticonceptie verband houdt met iemands betere sociaaleconomische positie en iemands kinderwens, maar toch blijven er nog veel vragen onbeantwoord. Waarom zijn de hoger opgeleiden meer geneigd om de pil in te ruilen voor het minder effectieve condoom dan de lager opgeleiden? Hoe kunnen de aanhoudend hoge percentages van natuurlijk anticonceptiegebruik in veel Centraal- en Oost-Europese landen, ondanks de toename in toegankelijkheid van meer effectieve methoden in de laatste decennia, verklaard worden?

Meer recente ontwikkelingen in onderzoek herdefinieerden anticonceptiegebruik als een sociaal gegeven in plaats van een individuele keuze. Enerzijds benadrukken onderzoekers de dyadische aard van anticonceptiebeslissingen. Anticonceptie wordt vaak gebruikt in de context van een relatie en empirisch bewijs bevestigt dat beide partners in meer of mindere mate een stem hebben in welke methode er wordt gebruikt. Anderzijds wordt erkend dat een beslissingsproces beïnvloed wordt door de sociaalculturele context waarin het plaatsvindt. Mijn doctoraat bouwt verder op deze onderzoekslijnen; door anticonceptie te contextualiseren, doelde ik op een beter begrip

van de "anticonceptieparadox" in Europa. Drie specifieke doelstellingen werden voorop gesteld: door mannen te integreren in de analyses, erken ik dat anticonceptie niet enkel een vrouwenzaak is; door een koppelperspectief toe te passen, beschouw ik anticonceptie als de verantwoordelijkheid van een koppel en niet van een individu; door aandacht te schenken aan de bredere reproductieve context waarin mensen wonen, benadruk ik dat beslissingen niet genomen worden in een vacuüm.

Met deze doelstellingen in het achterhoofd, werd het empirische onderdeel van de thesis opgedeeld in twee grote delen. Een eerste, meer beschrijvend deel focust zich op de huidige stand van zaken van anticonceptie in Europa. Eerder onderzoek werd voornamelijk uitgevoerd in de Verenigde Staten en studies in Europa zijn meestal gefocust op één land of op een kleine selectie van landen, wat resulteert in een beperkte kennis omtrent hoe anticonceptiegedrag varieert in verschillende Europese regio's. In een tweede, meer verklarend deel onderzoek ik hoe anticonceptiegebruik van koppels verklaard kan worden door een combinatie van individuele kenmerken van de mannelijke en de vrouwelijke partner, koppeldynamieken, en de macro-context. Ik doe voornamelijk beroep op de data van de *Generations and Gender Survey* (golf 1, verzameld tussen 2004 en 2011) voor het empirische onderzoek, omdat dit de meest recente, representatieve en vergelijkbare data zijn voor anticonceptie in Europa, en omdat er informatie beschikbaar is omtrent karakteristieken van de respondent, zijn/haar partner, en het huishouden. Bij de bespreking van de bevindingen hieronder is het belangrijk om in het achterhoofd te houden dat alle resultaten gevonden werden bij een selecte steekproef van respondenten: zij die anticonceptie nodig hebben (d.i. mannen en vrouwen die een heteroseksuele relatie hebben, die ooit seks hadden, die vruchtbaar zijn – respondenten die gesteriliseerd zijn worden wel opgenomen in enkele van de empirische hoofdstukken – die niet zwanger zijn/proberen zwanger te worden, en die geen kinderwens hebben op het moment van de survey).

De belangrijkste bevindingen kunnen opgedeeld worden in vier sets. Ten eerste wordt de opmerkelijke "Oost-West"-kloof in anticonceptiegebruik bevestigd, waarbij respondenten uit Noord- en West-Europa meer geneigd zijn om effectieve methoden (bv. de pil, langdurige omkeerbare anticonceptie zoals het spiraaltje, en sterilisatie) te rapporteren en respondenten uit Centraal- en Oost-Europa eerder gekenmerkt worden door een relatief hoog gebruik van natuurlijke methoden en condooms. Tegelijk is er echter ook substantiële variatie in anticonceptiegebruik *binnen* beide regio's. Ten tweede worden anticonceptiekeuzes gevormd door iemands sociaaleconomische positie en

diens beoordeling van de kost van het falen van anticonceptie. Soms blijkt de effectiviteit van een methode echter van secundair belang en stellen bijvoorbeeld hoger opgeleide mannen en vrouwen zich eerder tevreden met minder effectieve methoden, zoals condooms. Ten derde beïnvloeden onevenwichten in relaties anticonceptie op verschillende manieren. Partners die verschillen in jobstatus zijn meer geneigd om minder effectieve anticonceptie te gebruiken dan partners die in dat opzicht op elkaar gelijken. Als we kijken naar de verdeling van huishoudelijke taken en het nemen van beslissingen, zien we dat asymmetrie in partnerrelaties een "gegenderde" impact heeft: koppels waarin de man meer macht heeft (d.i. minder helpen in het huishouden, meer beslissingen nemen) rapporteren vaker het gebruik van wijdverspreide vrouwelijke anticonceptiva (bv. de pil) terwijl koppels waarin de vrouw meer macht heeft eerder gebruik zullen maken van alternatieve methoden (bv. het condoom). Ten vierde vond ik bewijs dat het implementeren van de mogelijkheid tot deeltijds werk, en een hogere mate van gendergelijkheid en secularisering geassocieerd zijn met het gebruik van effectieve, vrouwelijke anticonceptiemethoden.

Alles samen genomen, ben ik ervan overtuigd dat de belangrijkste boodschap van mijn doctoraat is dat we effectief anticonceptiegebruik niet als vanzelfsprekend kunnen beschouwen. Hoewel het gezien wordt als *standard practice* in de meeste Europese landen, zijn er veel koppels die moeilijk hun weg vinden naar een geschikte anticonceptiemethode die strookt met hun wensen en levensstijl. Beleidsmakers en zorgverleners blijven belangrijke sleutelpersonen in het bewaken en garanderen van, onder andere, het verspreiden van correcte en volledige informatie over alle beschikbare anticonceptiemethoden in alle groepen in de samenleving (bv. door middel van brede seksuele opvoeding), het verbeteren van gebruiksgemak zodat de barrières voor effectief gebruik verlagen (bv. door voorschriften voor de pil niet te beperken tot gebruik voor drie maanden maar tot een jaar), het aanmoedigen van mannen om hun verantwoordelijkheid op te nemen wanneer het gaat over het reproductieve domein (bv. zorgverleners die ook naar hun voorkeuren polsen als er een methode moet gekozen worden), en het integreren van seksuele en reproductieve gezondheid en rechten als een component van beleid rond gendergelijkheid. Tenslotte blijkt er meer aan de hand te zijn als het gaat over de pil, dan enkel hoe het een invloed heeft op de vrijheid van de vrouw.