Upon waking up, a woman reaches out to the digital thermometer on her bedside table. As she does every morning, at about the same time, she sticks it into her mouth and waits for the beeping signal to remove it. Today, her basal body temperature reads 36.83°C. After entering this data into a cycle tracking app, she gets up. Later on, in the afternoon, she will insert a finger in her vagina in order to assess the position of her cervix and the consistency of her cervical fluids. She will diligently report this information into the same app on her smartphone. Later during the night, she will remind her husband to wear a condom during sex: she is on the fifteenth day of her cycle and cannot yet be sure that she is at least two days past ovulation. A barrier method is necessary since a pregnancy would not be welcomed at this time.

This chapter explores a daily, embodied practice known as fertility awareness, which sits at the topical intersection of embodiment, health, religion, and the media with a comparative focus on North American anglophone and European francophone contexts. Practised in multiple ways and attributed a variety of meanings, fertility awareness refers to knowledge about the human female menstrual cycle used for reproductive purposes (achieving pregnancy) or contraceptive purposes (avoiding pregnancy), as well as cognitive purposes (understanding one’s menstrual cycle and its effects on one’s general health). Whichever its goal, fertility monitoring remains a foremost domestic, private, and even intimate practice: taking one’s basal body temperature is done in one’s bed, before getting up in the morning, and determining the position of one’s cervix or cervical mucus generally does not take place in front of others. While retaining a strongly embodied dimension, fertility awareness is one of the many practices relating to sexuality that has taken on digital dimensions. The collection of data remains very private, but now its sharing and interpretation may involve a community—though anonymously or pseudonymously—well beyond the woman or the couple.

Fertility awareness is not intuitive, accidental, or divinely revealed knowledge. Instead, it must be actively and continuously acquired. Whether or not this was prohibited, allowed, or even mandated by their respective cultural and religious traditions, women have since long tracked and recorded data about their menstrual cycles, interpreting them with whichever knowledge—accurate or not, scientific or traditional—was then available to them.
Contemporary fertility awareness methods, however, are based on scientific evidence that emerged with twentieth-century biomedicine (Jütte 2008: 204–205; Marks 2001: 44–45). The conscious and rigorous use of scientifically informed fertility awareness for contraceptive purposes translates into a variety of fertility awareness-based ‘methods,’ including Billings, Serena, Justisse, and Symptothermie. Most of these methods consist in gathering bodily data through self-observation, then recording and interpreting these data. Their main purpose is to confirm (or even predict) ovulation in order to identify the ‘fertile window’ in the menstrual cycle. In contrast with women and couples who use fertility awareness for the purpose of achieving pregnancy, those who wish to avoid pregnancy will consider the ‘fertile window’ as risky or unsafe, and will adapt their sexual practices so as to avoid fertilization. The safety rules of the various methods differ slightly, such as counting three rather than two evenings after the rise of basal body temperature in the morning. For heterosexual couples, a woman must thus be able to trust her male partner’s ability to either abstain from penetrative sex or to use barrier methods during the days identified as fertile. A man must trust that his female partner has correctly identified and disclosed the fertile window. Clear communication between partners is often cited as a key to a successful implementation in a practice where notions of risk and trust are at stake: practitioners must also be informed about the relative risks of failure (as a contraceptive method) and be able to assess them.

Contemporary fertility awareness-based methods should not be confused with older methods such as the Ogino-Knaus, calendar, or standard days methods, as these relied on observing one symptom only. Independently from their recent digitalization, focused on in this chapter, modern and more complex methods combine several observations and are thus more reliable: changes in texture and quantity of the cervical mucus secretions and daily basal body temperature are the most commonly observed. The position, openness, and firmness of the cervix is often used as an additional symptom to confirm the other two. Even before the digital turn, some of these methods already required specific computing devices combined with technology to detect hormones associated with fertility in urine or, sometimes, saliva, through strip tests.

The early twenty-first century has seen rapid and still on-going innovations in information and communication technologies. Notions such as ‘the quantified self,’ Big Data, or ‘the Internet of things’ are only a few of the most recent expressions of a trend that builds on earlier and ground-breaking technological advances such as ‘smart’ connected objects, miniaturized sensors, and smoother wireless connections to reconnect the embodied with the digital in the domains of health and wellness. The combining of fertility awareness with digital technologies of the quantified self in the twenty-first century is probably the most significant structural factor in the wider diffusion of and access to fertility awareness and methods of contraception based on it. Within this framework, this chapter pays a particular attention to how recent digitalizations of fertility awareness technically and socially add to already existing dynamics. Fertility awareness is discussed as a case study to examine how ‘the Internet as an infrastructure’ impacts the ways that women turn to digital technologies to achieve spiritual and religious goals connected to their reproductive choices and experiences.

**Fertility awareness as a practical spirituality in the digital age**

Fertility awareness is not religious or spiritual per se, in spite of a persistent association with specific religious groups or religious teachings. Rather, fertility awareness is open to interpretations. To this embodied and now digital and highly mediated practice, practitioners, advocates, teachers, and critics attribute a broad range of meanings, embedded in various social, economic, medical, moral, and technological dynamics. Groups and churches, especially the
Roman Catholic Church, which used to teach natural family planning within the framework of their specific religious ideals, have also gradually embraced the increasing digitalization. In addition to the most basic menstruation trackers, ‘religious apps’ now are also available: for instance, those that assist observant Jewish users in managing ‘family planning matters with respect to Jewish law’ (Campbell et al. 2014: 159), through keeping track of menstrual purity or finding a nearby mikvah (ritual bath). Moreover, pregnancy prayer apps already are on the market, often downloadable for free, and it is not difficult to imagine Christian versions of fertility femtech hitting the market, with daily biblical messages about traditional gender roles and sexuality added to what would otherwise be a regular fertility or pregnancy tracking software. This makes fertility awareness a relevant case study to examine the negotiation of religion and medicine in a digital age.

Websites, social media, and apps dedicated to fertility awareness practices and communities, digital and connected technologies, and devices such as thermometers, smartphones, sensors, and so-called wearable tech (such as trackers and armbands) now are part of the infrastructure of the dissemination and implementation of fertility awareness. This constitutes a ‘digital turn’ from in-person courses, printed books, and pen and paper charts to mainly online spaces that did not exist as such before the early twenty-first century. This digital turn has contributed to increasing the visibility in the public, online sphere of the pluralism and competition between different sets of discourses regarding women’s fertility and its management.

Competing understandings of the significance of women’s fertility stem in part from competing definitions of the concepts of ‘religion,’ ‘spirituality,’ and ‘secular,’ especially as they relate to the lives of women (Fedele and Knibbe 2013: 4–8, 2016; Zwissler 2008). Throughout this chapter, I use the contested terms ‘spiritual’ or ‘spirituality’ to refer to worldviews and practices of individuals, groups, or even structured movements that are not necessarily rooted in or associated with historically established institutions, such as the Roman Catholic Church, or broader religious traditions, such as Islam. Furthermore, I also build upon the notion of ‘practical spiritualities’ as defined by Coats and Emerich, who call attention to ‘the ways in which spirituality [is] physiological—fermented in the vessel of the flesh through everyday practices imbued with extraordinary meanings and transformed from raw material of life into a spiritual powerhouse of health for the worlds, truly a healing of the self to heal the world’ (Coats and Emerich 2016: 3). In addition to its dimension of ‘health,’ fertility awareness is indeed an ‘everyday practice’ that retains a spiritual dimension as well for some users: it takes the form of a personal quest for wellbeing and self-respect. Though such quests are increasingly disconnected from established religious institutions, some women (and their partners) understand their fertility choices to have spiritual effects in their own personal lives and, in some cases, even beyond.

Some (though not all) regular practitioners indeed ascribe spiritual meanings to fertility awareness. Today, the reasons for adopting fertility awareness and methods of contraception derived from it contrast with those of past historical contexts where few methods of managing fertility were available, convenient, legal, and religiously sanctioned. According to a study conducted in the United States of America, Van de Vusse et al. (2003), the main reasons for choosing a fertility awareness-based method of contraception, in order of preference, are respect for the body, religious or moral motivations, and fear of the side effects of classical contraception. In a more recent study conducted in France, users often reported key motivations as the following: developing self-knowledge of their bodies (cognitive purpose), personal development, and autonomy, not depending on medical professionals, reinforcing communication in the couple, spirituality (often as a personal decision resulting from an individual path of reflexion) or environmentalist concerns (Hyerle and Sulpis Chovelon 2017).
Lunar calendars and the old style ‘pen and paper’ charts are still in use, but recent developments in fertility awareness are closely tied to its digital turn. The trustworthiness of algorithms that do the work of interpreting user-provided data to let women know whether or not they are in their ‘safe’ or ‘risky’ days are questioned. Fertility awareness educators have criticized this reliance on built-in algorithms that are part of the apps, but inaccessible and baffling to regular users. Tracking while relying solely on the algorithm may lead to missing out on self-knowledge, a goal presented as essential to fertility awareness and sometimes also as key to an embodied spiritual practice, constructed as uniquely feminine. Does a shift from ‘needing doctors’ to ‘buying from start-ups’ bring any real empowerment? Some who are critical of this digitalization of fertility awareness see this as placing women in the position of demanding consumers rather than dependent patients.

**Biomedical criticism against fertility awareness and its digitalization**

A famous joke about fertility awareness goes: ‘What do you call a couple that practices natural family planning?’ ‘Parents!’ In a recent interview in *Atlantico Santé*, a popular, French health magazine, Odile Buisson, a gynaecologist, vehemently opposed the so-called natural methods. This joke was used as the title of the interview article, with a twist. ‘The couple’ became ‘a woman’ and the joke stressed the new digital dimensions of fertility awareness: ‘What do you call a woman who uses contraceptive apps?’ ‘A mother’ (Buisson 2018). Whether stereotype or not, the idea that women in most heterosexual couples are the ones primarily in ‘charge of their fertility’ is a common premise of many methods (Weschler 2015 [1995]). Fertility awareness-based methods of contraception all share in common that they are user-dependent and require regular implementation, preferably on an everyday basis; even with the digital turn, the woman herself must still learn how to identify her own bodily symptoms and she is responsible for collecting data. The onus of storing and interpreting such data, however, may be shifted to a digital entity, but, generally, not to their own partner, though some sharing of information may take place.

Like many of her colleagues in France, Buisson blames social media and the Internet for spreading false information about contraception. Gynaecologists and physicians who speak against fertility awareness-based methods of contraception also are critical of their digitalization: from their perspective, the problem does not lay in the basic principles of these methods, which have been proven correct for almost one century now, but, rather, in their implementation. Fertility awareness-based methods demand a conscious modification of sexual behaviour during some days and a reliable cooperation from the permanently fertile male partner. Digital apps cannot improve, enforce, or guarantee this.

In addition to its digitalization, another factor has contributed in a renewed interest for fertility awareness, especially in France. As early as 2013, several young women left partially disabled by pulmonary embolism sued the pharmaceutical firm Bayer. This ‘Pill scare,’ a series of health scandals with the third and fourth generations of contraceptive pills, has led to an increased distrust of ‘traditional’ hormonal contraception and in a surge of interest in alternatives (Debusquat 2019). Buisson sees a ‘religious’ aspect in the current defiance towards hormonal contraceptives and in this trending demand for alternative methods: ‘In a sense, there is a form of a religion of Nature that would come to replace classical religions’ (Buisson 2018)—or in other words, the replacement of religions such as Christianity with a less-institutionalized spirituality. This ‘religion of Nature,’ as Buisson calls it, includes not only fertility awareness but also other phenomena such as using washable diapers (rather than disposable ones), the increasing pressure placed on women to breastfeed, or the choice to...
not use an epidural during childbirth. Philosopher Elisabeth Badinter, for example, is a non-medical critic representing this strand of francophone feminism that casts suspicion against a ‘return to Nature’ or ‘naturalism’ as a form of religion (Badinter 2010). Including fertility awareness in this much larger criticism of women’s non-traditional spiritual practices, these critiques see such returns to or of ‘the natural’ as parallel with a return to or of religion. Especially in highly secularized contexts, like that of France where some consider ecofeminism to be ‘a worrisome strangeness’ (Burgart Goutal 2018), both returns (to nature and of religion) are perceived as backwards and as threats to women’s rights and equality (Pasche Guignard 2020: 176, 196). This blending of fertility awareness tout court with a ‘religion of Nature’ can lead to a contemptuous and definitive dismissal not only of the old style natural family planning but also of fertility awareness for contraceptive purposes.

From natural family planning to fertility awareness: marginal and minority then and now

Popular culture and mainstream media discourses still strongly associate fertility awareness-based methods of contraception with practices perceived as out-dated and as less efficient than other contraceptives, such as the pill or intrauterine devices. This contributes to the marginalization of alternative choices in fertility management and women’s health during pregnancy, childbirth, and postpartum. Homebirth and fertility awareness are examples of practices presented as alternatives to the mainstream options, such as hospital birth and hormonal contraceptives. In other words, medical practitioners rarely regard fertility awareness-based methods as a valid contraceptive option, especially in European francophone contexts (Pasche Guignard 2020: 188). Even in medical statistical studies, rigorous fertility awareness-based methods, such as the symptothermic methods, are still grouped together with other sexual practices with a contraceptive intention (such as withdrawal) and with so-called methods whose putative and actual failure rates are proven both in theoretical and in perfect use (for instance the ‘rhythm’ or ‘calendar’ method). For instance, a study of French women gave a 7.7 per cent failure rate for all fertility awareness methods during their first year of use (Moreau et al. 2007: 2424). Such rates are highly debated in the medical literature and they vary by country and are influenced by factors such as socio-economic status and level of education.

More than their failure rates, the perceived nature of fertility awareness as ‘religious’ is one of the factors that explains yet another paradox with it as well as a common misconception about it: in spite of the current interest for and high mediatization of fertility awareness, the number of consistent practitioners is low, ‘knowledge about fertility generally remains poor’ (Knight 2017: 5) in the wider population, and ‘knowledge of fertility awareness methods amongst health professionals is often incomplete’ (Black et al. 2010: 451). Studies upon which fertility awareness methods were first based, for instance early studies by Kusaku Ogino, Herman Knaus, and others (Knight 2017: 18), as well as later ones such as those by John Marshall or the special programmes of research in human reproduction at the World Health Organization (Knight 2017: 22–24) have no religious connotation per se. Even if some researchers might have been affiliated with religious groups, such as the Catholic doctors Jean and Evelyn Billings, their research is based on evidence collected and interpreted scientifically. Yet fertility awareness often remains strongly associated with forms of ‘natural family planning’ that might have been practiced, originally, for reasons clearly presented as religious.

There are, though, differences between natural family planning and most contemporary practices of fertility awareness, which prominent fertility awareness educators acknowledge. Natural family planning is still linked to conservative Christian religious perspectives.
on women’s sexuality, whereas fertility awareness is not. In her landmark ‘definitive guide to natural birth control, pregnancy achievement, and reproductive health,’ titled Taking Charge of Your Fertility, Toni Weschler notes that ‘because natural methods of birth control are often practiced by people morally opposed to artificial methods, [fertility awareness methods tend] to be falsely perceived as only being used by such individuals’ (Weschler 2015). She writes:

It’s true that many religious people have discovered the benefits of Fertility Awareness, though they may technically practice Natural Family Planning (NFP). The primary distinction between [fertility awareness methods] and NFP is that those who use NFP choose to abstain rather than use barrier methods of contraception during the woman’s fertile phase.

(Weschler 2015)

Couples who completely abstain do so because they consider that any type of interference, including through mechanical barrier methods (condoms, diaphragm), with the female or male body goes against their beliefs that any ‘artificial’ method, of any kind (chemical, hormonal, or mechanical) is unacceptable. In contrast, most contemporary advocates of fertility awareness-based methods today, while promoting one specific type of contraception, do not completely dismiss other contraceptive options nor question the rights of women to access them. They emphasize that, in the early twenty-first century, women no longer should have to ‘suffer for their contraception’ (Debusquat 2019).

Ilene Richman, an educator from The Fertility Awareness Center in the New York area explains on her website the differences between natural family planning and methods based on fertility awareness. Both natural family planning and fertility awareness indeed use ‘the same scientific principles,’ but they differ in terms of which categories of persons these teachings address, as fertility awareness methods can be taught to ‘anyone, regardless of relationship status or sexuality’ (Richman 2018) and not only to engaged or married heterosexual couples. Another key difference also noted by Richman is that natural family planning ‘calls for abstinence on fertile days, whereas [fertility awareness methods] users may choose to incorporate barrier methods or to enjoy forms of sexual expression that do not lead to pregnancy’ (Richman 2018).

Richman acknowledges the potential religious affiliation or spiritual background of fertility awareness educators. Referring to her own professional experience, she states that, in her view, these should not interfere with how educators interact with clients of different origins, religions, identities, and sexual orientations. Courses, she asserts, are no ground for proselytizing:

Please note that [fertility awareness methods] instructors themselves may have religious or spiritual belief systems of their own, but do not preference or promote these beliefs when teaching. A qualified Fertility Awareness Educator should be able to sensitively work with women from any background, ethnicity, or religion, and should respect the identity of her clients. I have worked with Amish couples speaking to me on outdoor phones, religious Jews who observe the practice of niddah, women who disclosed to me that they were having extramarital affairs, and lesbian women wanting to identify the right time to inseminate. I do my utmost to treat all my clients with respect, to be as culturally competent and curious as I can be, and, as we say in social work, to ‘start where the client is.’

(Richman 2018)
Thus, the main difference is not one of method, but one of context: a faith-based or religious one for natural family planning vs. a secular context for methods based on fertility awareness, by which Richman means a context that is not marked by a specific system of religious beliefs, but that welcomes practitioners irrespective of their religious or non-religious background.

Fertility awareness perceived as ‘religious’ and as ‘natural’: Catholic and Protestant perspectives

Behind the official discourses of several popes since the 1960s, there is a plurality of perspectives on contraception within the Catholic Church. The actual contraceptive practices of most Catholics do not exactly follow the traditional teachings as outlined in Paul VI’s encyclical *Humanae Vitae* of 1968. Today, the impact of such interdictions is quite minimal: a survey from 2011 conducted in the United States of America found that ‘only 2% of Catholic women rely on natural family planning; even among Catholic women who attend church once a month or more, only 2% rely on this method’ (Jones and Dreweke 2011: 5). While recently reaffirming the teachings of *Humanae Vitae*, Pope Francis also stressed responsible parenting and sexuality, stating that ‘good Catholics’ need not breed ‘like rabbits.’ In support of this view, he named natural family planning as the only acceptable method of contraception (Pinter et al. 2016: 487), but without mentioning any of the digitalization of such methods. The diversity of Catholic perspectives on contraception is not a question of faith, but of morals, not one of infallibility, but one that comes from considerations about ‘natural law’ (Hess and Allen 2008: 150–152). In spite of actual contraceptive practices and dissenting voices on this topic within the Church, natural family planning remains strongly associated with Catholicism.

Because natural family planning was first taught and disseminated in Catholic circles, the association with religion remains strong and religious ties or affiliations are quickly assumed (and verified) in some programmes, groups, or events. A flyer advertising an ‘in-depth training to [the] natural regulation of births’ (Centre Billings France 2018) offered by the Centre Billings France in 2019 is an example of this pervasive association. The flyer addresses married (or, perhaps, engaged) couples who not only wish to ‘increase [their] knowledge of the Billings method of natural births regulation,’ but also ‘advance in coherence between faith and responsibility’ and ‘testify around [them] of the beauty of Christian marriage’ (Centre Billings France 2018). In the highly secular French context, and even in the absence of any similar but secular educational context and contents, it is unlikely that couples unaffiliated with and uninterested in the Catholic Church would attend such a series of events. For instance, a lesbian couple wishing to learn more about their fertility in order to maximize their chance of conceiving through donor sperm insemination would likely not turn to a practice, even if it is science-based, that is embedded in discourses promoting a specifically Catholic, and thus heteronormative, vision of marriage and sexuality.

The flyer by the Centre Billings France also references environmentalism. Its heading reads: ‘a human ecology for a sustainable love’ (*une écologie humaine pour un amour durable*; Centre Billings France 2018). The mutability of the very concept of ‘nature’ in fertility methods is worth highlighting. Whereas it is central in the label ‘natural family planning,’ the adjective ‘natural’ is replaced by the other key term ‘awareness’ in ‘fertility awareness.’ Yet ‘Nature’ as a concept remains predominant and is ascribed a highly significant value. Not only feminist critics, such as Elisabeth Badinter, but also some religious studies scholars perceive environmentalist dimensions as ‘religious’ or ‘spiritual.’ For example, Bron Taylor distinguishes between ‘green religion’ and ‘dark green religion,’ both of which do have such dimensions, to different extents and articulated differently (Taylor 2010). For instance, the
French Billings training alludes to sustainability and reclaims the ‘natural’ and ‘environmental’ dimension of such methods in a program still clearly affiliated with the Catholic Church. Moreover, in many programmes teaching about fertility awareness, whether or not they are taught in religious frameworks, environmental metaphors are used when comparing the phases of the menstrual cycle with those of the moon or with the seasons of the year.

Another factor that contributes to this perception that natural family planning and, by extension, fertility awareness-based methods are ‘religious’ is that most certification programmes or teachers are connected to organizations that have explicit connections to religious institutions and, especially, the Catholic Church. The Centre Billings France is such an example. Generally, secular counterparts to such organizations are more difficult to find. In North American contexts, though, secular fertility awareness education services are slightly more developed (see Richman 2018) than in the francophone European countries surveyed for this chapter. Whereas various churches offer training certifications to fertility educators, there are very few secular equivalents, and little support exists for those who want to start a career as educators. The ‘extensive network of Catholic volunteers teaching [natural family planning] within their parishes simply has no match on the secular side’ (Gilbert 2013).

A plurality of discourses on contraception can also be found among Protestants, especially in North America. Ranging from opposition to any type of contraception to the most liberal acceptance of all types of contraceptives (and sexualities in general), such discourses reflect diversity and disagreements between denominations. As Amy DeRogatis has shown in her chapter by this title, the biblical command ‘to be fruitful and multiply’ has led to diverse Christian approaches to sexuality and fertility (DeRogatis 2015: 93–128). Differences of practice and opinion even exist within evangelical denominations in the same cultural context. For instance, among members of the Quiverfull Movement, which has a strong pronatalist and conservative stance, contraception is regarded as ‘one of Satan’s most effective weapons’ and the ‘rejection of any method of birth control is based on the belief that it interferes with God’s authority and constitutes a form of abortion’ (DeRogatis 2015: 116). Even beyond contraceptive practices themselves, many conservatives frown on a ‘contraceptive mentality’ (Klassen 2019: 23). Among other evangelicals, discourses are more varied and nuanced. Generally, ‘mainstream evangelicals . . . embraced family planning in the 1960s’ (DeRogatis 2015: 116). Other denominations may remain conservative on sexuality in general, and on premarital sex especially, but other mainline, Reformed Churches and those Protestants more influenced by liberal theologies have another recurring argument: their different vision of marriage and of the couple altogether emphasizes ‘companionship’ rather than ‘procreation’ alone. Thus, birth control is authorized, and not only for married couples, as it prevents unwanted pregnancies and, further, abortion.

**Fertility awareness, menstrual activists, and feminist spiritualities**

Fertility awareness and methods of contraception based on it fit well within the framework of ‘practical spiritualities’ (Coats and Emerich 2016). In addition to its health dimension, the everyday practice of fertility awareness retains, at least for some users, a spiritual dimension as well. It may take the form of a personal quest for wellbeing and self-respect, increasingly disconnected from established religious institutions, and yet not devoid of a sense of community. Strong environmentalist and feminist aspects often combine in fertility awareness. Focusing on discourses of menstrual activism that often merges with feminist spiritualities, this section thus calls attention to yet another perspective about women’s health and fertility and about their fraught relationship with Western biomedicine.
These discourses and practices come from (cisgender and mostly white) women whom Chris Bobel adequately labels ‘feminist—spiritualists—menstrual activists,’ defining the work of this diverse group as ‘reclaim[ing] menstruation as a healthy, spiritual, empowering, and even pleasurable experience for women’ (Bobel 2010: 66). Fertility awareness is only one component of the work of menstrual activists and part of a broad array of feminine and feminist spiritualities. Their discourses reverse traditional religious categories of pollution, as manifesting in allegedly filthy bodily fluids such as blood or cervical mucus, shifting the negative focus onto artificially created products. Central is the notion of respecting the bodies of women and the Earth, for instance through not flushing them with what is referred to as synthetic, artificial, chemical, or even toxic hormones that they often regard as damaging to women’s bodies and the environment.

Though discourses of feminist spiritualists and menstrual activists can be traced back to earlier emergences of women’s movements, in particular ecofeminist ones, online media and the rise of digital forms of fertility awareness, with large, online, and transnational communities of users and experts, have given a new visibility to such discourses and their associated practices (Pasche Guignard 2015: 110). This digitalization of fertility awareness has also brought some redistribution of authoritative knowledge regarding women’s health and fertility, shifting away from the official medical establishment and away from groups and churches teaching natural family planning embedded in their specific religious ideals.

In addition to those who still reclaim an explicitly feminist label, including ‘sex-positive’ and ‘body-positive’ feminists, other groups also ascribe spiritual dimensions to menstrual monitoring. Some even call women to adapt their activities according to their cycle, including their sexual practices, but also their professional ones. Examples (some of which were studied by Fedele and Knibbe 2016) include a range of spiritual ecofeminist movements, Goddess movements and various forms of ‘spiritual sexualities.’ These tend to stress women’s rights to their own pleasure and desire and ‘sacred femininity.’ Groups labelling their practices as Neo-Tantra, Conscious Sexuality, Sacred Sexuality, and other similar labels feature these characteristics. Menstruation, and, by extension the monitoring of one’s cycle, is a recurring topic in the discourses and practices of such groups. The lines get blurry between a purely secular, goal-oriented contraceptive health practice on the one hand, and, on the other hand, a personal and intimate practice to which some users or entire groups ascribe spiritual meanings or goals. Among them, ‘knowing oneself,’ ‘being more in tune with oneself,’ ‘reconnecting the soul, mind, and body,’ or ‘empowerment’ are frequently mentioned. In some cases, women creatively manipulate their menstrual blood, real or symbolic, for ritual purposes. Examples of mostly individual rituals include collecting it (often with a menstrual cup) and using it for painting or pouring it on the ground outdoors as an offering to the earth (Fedele 2012: 145–190 offers more examples, including collective practices).

For practitioners of various new religious movements and feminist spiritualities, abiding by the teachings of a church is not the key motivation for choosing fertility awareness-based methods of contraception. Rather, their goal is to be as coherent as possible with their own values. These often include respect for themselves or their partners and for the Earth or, more generally, the environment (Pasche Guignard 2020: 188). Moreover, these frameworks that refer frequently to ‘the sacred,’ ‘the divine,’ or spiritual ‘energies,’ and have a consistent focus on a holistic perspective on health, also tend to reject the over-medicalization of women’s bodies in fertility management, pregnancy, childbirth, menopause, and health in general (Fedele and Pasche Guignard 2018). Thus, while retaining the scientific basis on which fertility awareness-based methods of contraception were elaborated, some women see their practice of fertility awareness as a spiritually motivated resistance against the medicalization of women’s bodies,
health, fertility, and sexuality (both recreational and reproductive). As well, they consider fertility awareness as a form of personal, private, and embodied protest against the exclusive authoritative knowledge and institutional power gained by largely male-dominated Western biomedicine and profit-driven pharmaceutical companies. That is, they see fertility awareness as a kind of embodied knowledge that challenges infrastructures of both religion and medicine, and they turn to digital tools to enact their resistance.

**Structural factors: state regulations, medicine, and business in religious and political economies**

Both religious and political economies govern attitudes towards fertility management and shape laws that regulate what contraceptive practices are legal or illegal to sell or provide, to whom, and under which criteria. Though precise answers to questions about structural factors and regulations vary across national and cultural contexts, religion remains among the ‘numerous social forces at work today that enforce an implicit positive valuation of fertility’ (Moss and Baden 2015: 27). In several American and European contexts, religious discourses and the normative ethics associated with mostly conservative Christian movements and their political lobbies contribute to shape such public health policies. In the USA, especially, such questions are to be considered against the backdrop of the real or alleged influence of religious groups on various political debates, for example, programmes in sexual education that promote the ‘abstinence only’ model, the recent Hobby-Lobby case in the USA, and other debates about the contraceptive mandate (see Klassen 2019).

If specific interest groups, whether religious or secular, successfully pressure their government into promoting population control through fertility-regulating births in the first place, then it is relevant to ask if this government supports or offers any funding for promoting fertility awareness-based methods over or alongside other contraceptives. Countries providing international aid may implement different policies at home and abroad. For instance, rather than directing programmes to American citizens living in the USA, the vast majority of funding by the US government devoted ‘to the research and teaching of natural birth control methods . . . has gone through USAID, the agency charged with administering civilian aid to developing regions overseas, and the specific fertility awareness methods and programs it’s developed have been tailored to those populations’ (Gilbert 2013).

State regulation of medical and pharmaceutical practices is another key point to consider. A new market of body literacy combined with femtech has emerged, signalling another infrastructural difference. Many who teach natural family planning are unpaid volunteers, affiliated with churches. They benefit from the networks and infrastructures of these churches (e.g. using the parish hall for free). In contrast, most fertility awareness educators who are not tied to specific religious groups rarely receive funding or support from the state or a church. They cannot rely on the same organizational structures. Many independent fertility awareness educators are businesswomen rather than volunteers. This imbalance in availability of resources to encourage women to learn about fertility contributes to the spread of the false idea that only those with strong religious motivations continue to practice fertility awareness, because it is the only option left to them when all others are forbidden for religious reasons.

Compared to the marketing of hormonal and mechanical contraceptives, both to healthcare practitioners and to patient consumers directly, efforts in promoting fertility awareness remain marginal. The idea that fertility awareness will turn women away from hormonal contraceptives altogether obscures the economic stakes of major pharmaceutical firms that will continue to promote their drugs and are likely to oppose any restrictions on researching, approving,
marketing, and selling them. In today’s economic and political infrastructures, pharmaceutical companies have more power than religious institutions who oppose most forms of contraception, and they also outnumber fertility awareness advocates, who are rarely organized in institutions or lobbies.

The recent and on-going digitalization of fertility awareness will probably not drastically change this situation, but technological innovation may force the state to reshape some of its categories and licensing processes. For the first time in 2018, the American Food and Drug Administration approved a digital fertility app, Natural Cycle, to advertise and sell itself as a ‘method of contraception.’ In doing this, a new category called software applications for contraception was born. The same app was certified in the European Union in 2017, and was the topic of heated debates among specialists after one hospital in Sweden reported a high rate of unintended pregnancies after using the app.

Many books (printed and digital), websites or ‘knowledge databases’ integrated into specific apps lay out the fundamental principles of fertility awareness. Yet because its complexity can remain challenging, individual training sessions with an educator or coach might prove necessary for users to learn not just how to apply the method, but to gain a deeper understanding of how the menstrual cycle works and which factors may influence or disturb it. As with other digital forms of self-tracking, occasional advice or feedback can be requested from a users community or from a professional educator or volunteer teacher. For this reason, another relevant point to consider is that of training and certification: as of now, in most countries, the market, business, and practice of fertility awareness education is not regulated like that other paramedical professions such as registered massage therapists or dieticians. No official state agency delivers certificates to validate the training of fertility awareness educators. Anyone can label oneself as such and start teaching others. In some cases, religious organizations, rather than governmental ones, offer certified trainings for fertility awareness educators. Similarly, at the institutional level, it is relevant to ask who decides whether or not fertility awareness will be part of the curriculum in medical schools. Even in the most recent edition of Taking Charge of Your Fertility, Weschler (2015) writes about a ‘conspicuous absence’ of fertility awareness within medical schools.

**Big data, big brother: the intimate panopticon and patriarchy seen through feminist lenses**

In contrast to patriarchal Christian or biomedical systems, digital fertility awareness apps initially were considered as having a liberating and empowering potential for their users, affording them sexual freedom as well as autonomy from physicians and pharmacists. In light of recent developments, feminist and legal scholars now also question this idea. ‘Intimate surveillance,’ by way of the blurring of intimate health and sexual information on the Internet, has become a topic of concern (Levy 2015; Fotopoulou 2016; Lupton 2016; Wilkinson et al. 2015).

Companies that crowd-source data of millions of menstrual cycles learn something valuable about women or use deep machine learning to improve their algorithms. Innovation may result in improved products and ever more precise and reliable apps and devices, ready to be sold to these same consumers who, perhaps without their awareness and consent, participated in the making of the app. Women’s menstrual cycles are turned into economic data for marketing purposes. The automatic sharing of information is often so embedded in the devices or apps that it appears as an option by default rather than one that users should explicitly consent to. Moreover, fertility tracking apps certainly have the potential to actively contribute
to a digital panopticon, to a surveillance of women’s bodies and behaviours by an intimate partner or by the medical establishment, among others. Facts about one’s sexual practices once were shared as ‘les aveux de la chair’ (Foucault 2018; on confession about sex, see Foucault 1978: 61) in an explicitly religious context, that of the confessional, to one exclusively male figure, that of the priest (in Catholic contexts). Users of apps now share intimate details of their sexual lives (such as frequency of intercourse, use of condoms or not, etc.) knowingly and unknowingly with digital audiences, though without the sinful overtones that might have been present in historical Christian contexts. Some apps already allow intimate partners and medical professionals to access (and perhaps also copy, store, and share) intimate data such as menstrual cycle or records of sexual activity. For instance, the app Glow allows users to download a ‘mirror app’ to be installed on the phone of the partner of the woman tracking her cycles (Levy 2015: 684). Ovia, another app, was reported to have sold women’s data to their employers (Harwell 2019).

The latter aspect of this criticism points out to a totalitarian, dystopic future, à la Margaret Atwood’s The Handmaid’s Tale, in which women’s bodies are valued only for their reproductive capacities. The question then becomes whether digital fertility tracking apps place women in positions of agency and self-control or if they undermine the very purpose of (self-) knowledge, health, and embodied forms of empowerment. Some fertility awareness educators advocate distrust of apps and their secret interpretative algorithms. As a resistance against this digitalization, some even suggest a return to ‘pen and paper fertility’ systems of self-tracking (The Vagina Blog 2018). Other educators urge women to use cycle tracking apps only to store data, and to rely on their own acquired knowledge to interpret it.

**Concluding remarks**

This chapter has outlined how spiritual meanings and ethical concerns may still be present, or even central in fertility awareness as disseminated and practised, in various ways and for many reasons, in the digital age. The digitalization of fertility awareness has accelerated a shift of sharing sexual biodata about one’s cycle and sexual activity from the realm of the intimate, private, and confidential, to increasingly broad, public, online spheres, though often anonymously. In addition to health, religion, and medicine, technology and markets must also be considered for the purpose of having a more comprehensive understanding of how the Internet, online communities, apps, and electronic devices all play a role in the new digital forms of fertility monitoring.

In some contexts, fertility awareness-based methods are still associated with ineffective ‘methods of the old days,’ with anti-feminist backwardness, with natural family planning as practised for moral reasons in religious contexts, or with all of these. Suspicion is high especially in secularized francophone contexts where feminist discourses generally are cautious about any type of authoritative discourses, whether medical, religious, or spiritual, that call for limiting women’s choices and bodily autonomy. Discourses by spiritual (eco)feminists and menstrual activists, who insist on the concept of ‘Nature’ and on cycle monitoring as an empowering practice, also are targets of such criticism. Contemporary fertility awareness educators, however, now insist upon a distinction that the recent and on-going digitalization of these practices has accentuated that these methods can be taught to anyone, regardless of religion, gender, or sexual preferences. In spite of the large overlap of the practice of using similar methods, the motivations and restrictions are different to those found within religiously affiliated groups. Fertility awareness advocacy itself does not contribute to the tightening of access to other forms of contraception and to abortion pushed by religious groups.
Often standing against the influence of conservative religious groups, activists in the field of reproductive health and justice describe a future in which sexual health options will become increasingly limited. From a feminist perspective, there will indeed be a concern if the range of available contraceptive options becomes so restricted that fertility awareness-based methods end up being not one, but the only option left to avoid pregnancy. Presently, the still marginal promoting of contemporary and science-based fertility awareness-based methods does not give a signal that all other methods are ‘bad’ (because of their side effects) or even superfluous. Women (and couples) choose such methods because it works well for them personally, but such a choice does not send the message that this is a good enough option for all.

As new and enhanced forms of digital contraception and fertility tracking apps and devices hit the market, key actors with stakes in the management of human fertility, whether these identify as medical, religious, spiritual, or secular, will continue producing competing discourses. Though stemming from very different ideological backgrounds, some of these discourses—and even more so the actual practices of fertility management—might have some points of convergence. New forms of digitalized femtech have increased the plurality of discourses about women’s health, human fertility, and its management through spiritual and scientific practices in the twenty-first century. As this chapter has shown, their entanglements are more complex than it first appears.

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Works cited


