Maternal Age in the Regulation of Reproductive Medicine – A Comparative Study

Andrea Büchler* and Karène Parizer*

*University of Zurich, Collegium Helveticum ETH/UZH

ABSTRACT

The phenomenon of delayed childbearing in general, and of the increasing age of women using assisted reproduction techniques (ART) in particular, occurs in all Western countries. This article addresses the question of a maximum legal age for accessing ART. We argue that the question of setting a maternal age limit is related to the cultural context and is influenced by social representations of motherhood. The dominant discourses around the question of the necessity of an age limit are inevitably infused with social expectations. First, the arguments in favour of and against setting a maternal age limit will be analysed, such as reproductive autonomy, equality, the well-being of the child and her parents, the best interests of women, and the State’s responsibility. Secondly, the principal models adopted in Western countries will be explored. Three models of normative frameworks can be identified: in the first, an explicit maternal age limit of eligibility has been set by law. In the second, such a limit has not been set explicitly, but ‘soft’ legal conditions, guidelines, and financial coverage restrictions have been introduced. In the third, no maternal age conditions have been stipulated at all. Thirdly, the possible grounds or explanations underlying these frameworks will be discussed. To this extent, arguments such as reproductive autonomy, nature, and the child’s welfare will be analysed, as well as some political factors as pro-natalist policy and the issue of financial coverage.

I. INTRODUCTION

More couples are reaching the end of the woman’s reproductive years without having attained their desired family size (ESHRE, 2010). The phenomenon of delayed childbearing in general, and of the increasing age of women using assisted reproduction techniques (ART) in particular, occurs in all Western countries. A woman’s fertility begins to decline throughout her thirties, the decrease becoming more significant by 35 years of age and accelerating after age 40 (Leridon, 2004). It is estimated that 16.6 per cent of 40-year old women, 54.6 per cent of 45-year olds and 91.9 per cent of 50-year olds are definitely sterile (Leridon, 2008). Despite the efforts of health professionals to improve awareness of the natural age-related decline in female fertility, the ticking of the ‘biological clock’ is often misperceived by women (MacDougall et al., 2013). This misperception might be caused firstly by some spectacular news about older women getting pregnant, making women think that they still ‘have time’, and...
that ART can overcome any infertility problem before menopause (Bromer et al., 2008). Secondly, this misperception might also be due to contraception. Contraception enabled women to defer pregnancy until they felt ready to become mothers. Once they were ready, some women discovered they had fertility problems. It can be presumed that in the past, when contraception was much less efficient, many unwanted pregnancies resulted in births of healthy children to young parents, thus invalidating plans to delay childbearing. The age-related fertility problem may be aggravated by the fact that the male partner might also suffer from age-related diminished fertility.

Despite the current belief that ‘the 40s are the new 20s’, time cannot be put on hold. The physiological fertility age does not follow the increase in life expectancy and seems no longer in tune with the contemporary lifestyle of women in Western countries. Female age-related infertility due to poor oocyte quality can be remedied through an oocyte donation or by the freezing of oocytes at a younger age (so called social egg freezing). The first option, ie using the oocytes of a younger woman, might be an efficient solution, although it is a significant medical procedure for both women. Furthermore, this option has raised a debate in the context of oocyte shortage. This is the question of whether women who suffer from a pathological oocyte deficiency should be given priority over women with an age-related deficiency. In other words, women who wish to have a child at an older age are considered to be ‘responsible’ for their situation as this kind of infertility is foreseeable.

The second option, the possibility of cryoconservation of one’s own oocytes might be an option to avoid oocyte donation (ESHRE, 2012), as in recent years oocyte vitrification protocols have achieved similar results to those obtained with fresh oocytes (Rienzi et al., 2012). It seems that a significant proportion of young women would consider safeguarding their reproductive potential or are at least open to the idea of social oocyte freezing (Stoop et al., 2011). This procedure can be considered an act of preventive medicine, as it avoids the burden of ineffective fertility treatment at older ages (Shkedi-Rafid and Hashiloni-Dolev, 2011). Access to it is currently offered by big multinational enterprises such as Apple and Facebook, and defended by some medical professionals (Wyndham et al., 2012). Nevertheless, the use of oocyte cryoconservation for elective fertility preservation is controversial in many countries. The greatest risk in this kind of use is that women would intentionally enter the vicious circle of infertility. As soon as this option became available, many women would want (or rather resent the pressure from their employers) to use it. After freezing their oocytes, women would not feel so much pressure to become pregnant. The probability that they would choose to delay childbearing would increase, shifting it to an age when it becomes more difficult. This would encourage them to seek medical assistance. Instead of organizing the labour market in a way that would allow women to have a career and to assume their maternal tasks, the relationship between the private and professional spheres could become more challenging (Anderman-Shachar, 2014). However, all of the evidence to date suggests that women freeze their oocytes for personal reasons rather than professional ones, mostly because they do not (yet) have a suitable partner (Baldwin et al., 2015; Waldby, 2015).

Both these options, oocyte donation and oocyte social cryoconservation, are related to the gender-specific nature of the ART regime. Not only do women carry the child, but also, unlike the situation for men, the options of gamete donation and
gamete self-use require an extraction which is dependent on sophisticated medical assistance. The question of setting an age limit for women to access ART also involves an important social dimension and issues concerning motherhood. In other words, such a limit is not purely medical, as it would reflect how society views the maternal role. Pregnancy at an advanced age might be seen as violating the social norms surrounding motherhood, by which a good mother is construed as young, beautiful, energetic, and selfless (Petropanagos, 2015). Moral considerations are often smuggled into the medical facts of advanced maternal age, thus serving to perpetuate biased conceptions of motherhood.

This article addresses only the question of a maximum legal age for accessing ART. Setting a minimum age seems to be neither necessary nor common. Only a few countries set such limits. As a consequence, access to ART is tacitly authorized in Western countries upon the age of majority, aligning these procreation methods to the possibility of marriage. However, in pathological cases, in which a minor’s fertility perspectives might be endangered, gametes may possibly be extracted at an earlier age.

The maternal age limit has to be distinguished from that of the oocyte donor; the latter limit is set according to the success rates of an ART procedure (the younger the oocyte donor is, the better quality her gametes are). Indeed, older recipients of oocytes from younger donors do not have a poorer pregnancy outcome compared to younger recipients from younger donors. The age of the recipient does not adversely affect the success of oocyte donation up to the time a woman reaches her late 40s (Sauer et al., 1992; Patrizio et al., 2009). The reduction in success rates begins approximately at the age of 48 and becomes pronounced over 50 (Toner et al., 2002). However, although choosing a donor aged younger than 35 increases the chance of pregnancy and live delivery for older recipients (Wang et al., 2012), it does not avoid complications due to advanced-age pregnancies, such as diabetes etc.

Whereas regular IVF only works up to a certain age, as a woman’s own oocytes are needed, the situation in the case of oocyte donation or social oocyte freezing is different, as using younger egg cells can lead to a pregnancy even at a more advanced age. There are different ways of addressing the question of age in ART. In some countries, no age limit is set; in others, it is set by law, through guidelines, or, indirectly, through public funding restrictions. As we will see, only a few countries have set an age limit for eligibility for ART treatments, and among these countries, some have chosen to set it only in the context of oocyte donation or of social egg freezing. This article aims to analyse the arguments in favour of and against setting a maternal age limit (A); to present the principal models adopted in Western countries (B); and to discuss the possible grounds or explanations underlying these frameworks (C). We argue that the question of setting a maternal age limit is related to the cultural context and is influenced by social representations of motherhood.

II. A MATERNAL AGE LIMIT: A CONTROVERSIAL ISSUE
Before presenting specific arguments pointed out in the literature in favour of or against setting an age limit, we would like to evoke the general classical principles of bioethics, namely respect for autonomy, justice, beneficence and non-maleficence (Beauchamp and Childress, 2013). The principle of non-maleficence requires not
intentionally causing harm or injury to the patient, either through acts of commission or omission. Providing a proper standard of care that avoids or minimizes the risk of harm is supported not only by our commonly held moral convictions, but also the laws of society. This principle articulates a fundamental commitment on the part of health care professionals to protect their patients from harm.

More concretely, according to medical evidence, late pregnancies and childbirth present problems both for women and fetuses. For women, medical complications occur more frequently at an advanced age (Salihu et al., 2003; Luke and Brown, 2007; Smith et al., 2008). These include increased risk of cardiac disease, hypertension, diabetes, placental abruption and caesarean delivery (Cleary-Goldman et al., 2005). In fact, menopause protects against the adverse events of pregnancy at an advanced age (Bahn et al., 2010). The maternal risks of childbearing at an advanced age are often underestimated and the difficulty of conceiving at a later age and the subsequent need for IVF are sometimes unexpected (MacDougall et al., 2012; MacDougall et al., 2013), creating emotional and financial stressors for the potential parents. For the fetuses, risks from an advanced maternal age include chromosome abnormalities (Hassold and Chiu, 1985) (although this risk can be reduced by recourse to oocyte donation: Söderström-Anttila (2001)), decreased birth weight (Cerda et al., 2008), and death (Fretts et al., 1995; Andersen, 2000; Reddy et al., 2006; Hoffman et al., 2007).

1. Arguments in Favour of Setting a Maternal Age Limit

A. The well-being of the child

As delayed childbearing is a relatively recent phenomenon, there is a lack of studies available on the impact of parents’ advanced age on their children (Pennings, 2013). However, children born to older parents may encounter various difficulties. Firstly, women of an advanced age face the possibility of a shorter time to raise their children. According to a commonly held idea, people who procreate commit themselves to a long-term task, that of supporting their child until the age of majority (O’Neil, 1979). Those who conceive in their late sixties may be unlikely to see their children reach adulthood. Secondly, age-related health problems may also place a burden on the parent that negatively impacts the child, both physically and emotionally. Thirdly, generational gaps are more likely to occur, and both parents and their children may experience isolation and social stigma. Finally, a related consequence of later-life parenting might be that women have fewer children than they wished for, and thus a smaller family size.

B. The Interests of Women

Setting a legal age limit is also considered to be in the best interests of women, for it would contribute to a better collective awareness of the impact of age and the difficulty of conceiving (Maheshwari et al., 2008). In fact, some women are surprised to learn of their high-risk status at a certain age (Carolan et al., 2007), and other women reject age as a risk factor altogether (Saxell et al., 1996). According to some studies (Billari et al., 2011), in countries offering easy access to ART, women tend more often to defer their wish to become pregnant. In other words, there seems to be a correlation between access to ART and social acceptance of late childbearing: the
more ART services are accessible, the more women feel comfortable to use them at an advanced age (Settersten, 2003; Gershoni and Low, 2015). The availability of ART may foster a delay in childbearing because couples are inclined to think that it will solve any fertility problems they might encounter in the future (Gillan, 2006). The result of delaying childbirth is that more couples are infertile and in need of ART procedures (Andersen et al., 2008).

C. The State’s Responsibility

Setting a legal age limit can be considered part of a state’s social responsibility for two reasons. Firstly, the state’s role includes preventing exceptional and sometimes predictable (financial) burdens upon society: those related to pregnancies (treatments during pregnancy and delivery), to premature births (neonatology costs) (Blencowe et al., 2013), to the medical problems of children or to their social welfare (parental capacity, health problems, and life expectancy of their parents) (Anderman-Shachar, 2014). Secondly, if legislators do not set an age limit, health professionals who provide these treatments would be responsible for observing the standard ethical requirements for the procedure (Caplan and Patrizio, 2010). To their credit, many physicians have regulated their own practices by setting their own criteria for women of advanced reproductive age (Bahn et al., 2010).9 Indeed, without clear guidelines, concern about the ethical propriety of the technologically driven extension of the normal reproductive age would be a matter for the marketplace (Caplan and Patrizio, 2010).

2. ARGUMENTS AGAINST SETTING A MATERNAL AGE LIMIT

A. Reproductive autonomy

Western societies view fertility as a medical issue, and place a high value on having children. The right to have children and thus to realize your existential potential to create the next generation with a genetic continuity is part of the right to private and family life (Article 8 ECHR).10 The wish to have children is deeply engrained in the human species, whether the potential parents can procreate spontaneously or need to seek medical assistance. Therefore, as a restriction of this basic right, an upper age limit requires sound justification. Given the generally accepted right to reproduce, the burden of proof is on those who want to restrict this right, and the proof has to be empirically rooted (Pennings, 2013). The sole focus on the age of the prospective mothers is also a source of criticism. Guido Pennings points out:

‘If parenting capacity is a criterion, every person or couple who does not fulfill the criteria should be excluded from assisted reproduction treatment... One can include cancer patients and people with certain genetic conditions (such as cystic fibrosis or Huntington disease). In most countries, these people are eligible for assisted reproduction treatment. Nevertheless, the life expectancy of these patients may be or is very limited and these patients may also need to be cared for during the early 20s of the child’s life.’11

In other words, there is criticism of the double standard which might exist in certain countries for older and younger women on the one hand, and for healthy and less healthy potential parents on the other hand (Daar, 2005).
B. Equality

Furthermore, setting an age limit only for women is being viewed as violating the principle of equality, as, in general, no comparable age limits exist for men. An age limit only for women could suggest that women are considered to be the main caregivers, reinforcing traditional views of family. The argument that children born to older parents have a higher risk of becoming orphans before reaching adulthood is much less frequently used when dealing with older fathers; society seems to be more tolerant of older men who bear children, as it is presumed that they are with younger women who will take care of the offspring (Löwy, 2009; Caplan and Patrizio, 2010).

While there is extensive research on the medical aspects of advanced maternal age (Van Katvijk and Peeters, 1998), a mild debate has begun only recently on the problem of advanced age in fathers (ESHRE, 2005). In fact, the term ‘men of advanced reproductive age’ is absent from the literature (Löwy, 2009), mainly because men do not place themselves at any serious risk, as women do, by generating gametes or carrying a child. In contrast, it has been demonstrated that men’s biological clocks affect hormone levels, fertility (De La Rochebrochard and Thonneau, 2003; De La Rochebrochard et al., 2006), sperm quality (Lambert et al., 2006; Lewis et al., 2006) and miscarriage (De La Rochebrochard and Thonneau, 2002). Moreover, several recent studies have indicated that autism and neurological troubles seem to be specifically associated with the age of the father (and the mother) at the time of conception (Reichenberg et al., 2006; Croen et al., 2007). The father’s age also seems to increase the risk of schizophrenia (Sipos et al., 2004), other learning difficulties in children, and malformations (Thacker, 2004; Zhu et al., 2005).

C. Parents’ well-being

Parents’ well-being may have multiple dimensions: Older parents might feel more emotionally prepared, mature and patient. Life experience before having children might be a source of self-enrichment and satisfaction. The possibility for women (and men) to work before childbearing allows them to establish their career, and obtain financial security and flexibility in working hours. In fact, the choice to postpone childbearing is not always planned, but might be related to factors such as cost of living, particularly with young people being priced out of the housing market (Clark, 2012). Women in particular might feel the need to have enough time to choose the right co-parenting partner. Many women are reluctant to become mothers and raise a child on their own, preferring therefore to wait to find the right partner well into their 30s and 40s, while their chances of becoming pregnant are quickly diminishing (Wyndham et al., 2012). This factor is sometimes underestimated by health professionals, whose discourse might be resented if it is paternalistic.

III. MODELS ADOPTED IN WESTERN COUNTRIES

In Western countries, three models of normative frameworks can be identified. In the first, an explicit maternal age limit of eligibility has been set by law, regardless of financial coverage restrictions (1). In the second, such a limit has not been set
explicitly, but ‘soft’ legal conditions, guidelines, and financial coverage restrictions have been introduced (2). In the third, no maternal age conditions have been stipulated at all (3).

1. Explicit Legal Maternal Age Limit for Eligibility
In this first category, access is limited by an explicit maternal age limit, regardless of the financial coverage framework. In some countries, a maternal age limit is set by law only in the context of oocyte donation. Indeed, a general maternal age limit does not seem necessary, as after a certain age regular IVF success rates are extremely low. According to the Austrian Fortpflanzungsmedizingesetz, amended in 2015, the age of the woman receiving an oocyte donation cannot exceed 45 years.15 This limit does not apply to women using their own oocytes, with or without freezing. As for financial coverage, the Austrian IVF Fund enables a partial (70 per cent) refund for four IVF cycles (inseminations are not covered), if the woman receiving the treatments is not over 40 years old. In Israel, eligibility prerequisites also concern only women who receive an oocyte donation16 or undergo social egg freezing;17 they must be under the age of 54. As for the financial aspect, the Israeli Ministry of Health sets very broad age limits for the rather generous financial coverage (all IVF treatments are covered with no limitation on the number of cycles, until the birth of two children): 45 years for women using their own oocytes (the costs of social egg freezing have to be covered by the patient); 51 for those who use an egg donation.18

In other countries, a general maternal age limit has been set: in Belgium, the law states the following: 'gamete extraction is available for women aged 45 years maximum. The request for an embryo implementation or for gamete insemination is available for women aged 45 years maximum. Embryo implementation or gamete insemination cannot be done for a woman who is more than 47 years old.'19 In other words, the woman is required to have had her oocyte extraction before her 45th birthday, and the embryo transfer or insemination before her 47th birthday. As for the reimbursement conditions, a lower age limit is set, ie 43 years of age. Belgian coverage is generous, as there is a full refund for 6 IVF cycles. The Danish law sets the maternal age limit at 45 years;20 a refund is available until the age of 40 (partial coverage for 3 IVF cycles). In the Czech Republic, ART treatments are available to women until the age of 49 years.21 In Greece, medical assistance is permissible up to the age of 50.22 The Greek legislation adds that this age corresponds to the ‘upper limit of natural reproductive capacity’.23

2. Other Forms of Maternal Age Limits
Other countries do not set an explicit age limit by law; the issue is instead addressed through ‘soft’ legal conditions (a), guidelines (b), or financial coverage restrictions (c).

A. ‘Soft’ legal conditions
As for countries where oocyte donation is prohibited, legislators can rely on physiological capacity to operate as an age limit: in Switzerland, assisted reproductive techniques may only be used for couples ‘who, on the basis of their age and personal
circumstances, are likely to be able to care for and bring up the child until it reaches the age of majority. However, there seems to be a medical consensus in Switzerland, according to which women are eligible to access ART until the age of 43. There is no financial coverage for this kind of medical treatment. In Italy, where oocyte donation was also prohibited until 2014, couples who intend to access ART have to be of ‘potentially fertile age’. The same rule holds for a refund (Berg Brigham et al., 2013). This vague age limit has led to a remarkable decision by the Minors’ Court of Piemonte and Valle d’Aosta, which ordered the removal and the consequent adoption of a 1-year-old child because her parents were considered too old and unsuitable to be parents. The couple, a 57-year-old woman and a 70-year-old man, had recourse to heterologous artificial insemination abroad and decided to give birth in Italy. According to this judgment, the child:

‘is the result of a distorted application of the progress in genetic research, that does not consider the condition of the unborn child: the dysfunction is represented by taking into consideration only the point of view of the hopeful parent, that is based on the supposed right to biologically procreate, a right justifying any means’.

In fact, the issue at stake was not only transgressing an age limit, but also violating the Italian ban on oocyte donation, by seeking it abroad. It seems that since this kind of recourse could not be considered illegal (European citizens are allowed to seek ART services in other European member states), the judge preferred to justify the deprivation of parental authority on the basis of their presumed inability to carry out the role of parents. This decision is of course very controversial; it assumes that the child would be better off being assigned to adoptive parents through the adoption mechanism than staying with elderly parents. In other words, a judge uses the age criteria not only to determine eligibility for assisted reproduction, but also to deprive parents of their rights.

Similar rules can also be found in countries where oocyte donation is permitted: according to the French Bioethics Law the couple has to be ‘of procreative age’. This refers to the period of potential spontaneous procreation. As fertility treatments are almost entirely funded by the state, the age limit set for financial coverage plays a crucial role. Thus, a de facto limit has been set at the age of 43. This does not exclude older women from obtaining ART treatment if they cover the costs themselves. Given the possibility for the medical team to refuse or to postpone a fertility treatment on the grounds of the child’s interest without any justification, as well as the fact that women that are denied access to ART will rather seek it abroad than challenge the refusal in court, there is no jurisprudence to date concerning the age condition. In Romania, a similar prerequisite has been set: in order to have access to ART, a man and a woman have to be ‘at the biological reproductive age’.

B. Guidelines

In some countries, a maternal age limit is found in guidelines that have been set by medical societies or by public authorities: in the Netherlands, the age limit for women receiving donor oocytes is 45 years. The same age limit applies to the refund of a maximum of two IVF cycles; the first trial is not covered, the second and the third treatments are. In Bulgaria, the age limit for access to ART (with or
without oocyte donation) is set at 51 years,40 and in Hungary at 45 years.41 In Norway, the guidelines for medical personnel for the evaluation of couples seeking ART recommend that the woman be between 25 and 40.42

In the UK, the legislature has not set any age limit, letting individual clinics decide upon this question within the scope of the child’s welfare.43 Most clinics set an age limit, and most of these are in the range of 50–55. Regarding public financial coverage, in 2014, the National Institute for Health and Clinical Excellence’s (NICE)44 published45 quality standards recommendations according to which women aged 40–42 years who meet the criteria for IVF should be offered one full cycle of IVF, and women aged under 40 who meet the criteria for IVF should be offered three full cycles of IVF. In general, the importance of the maternal age in determining access to ART has decreased over time: in the first and second edition of the Code of Practice the medical teams were requested to take into consideration the candidates’ age.46 In the third edition of 1995 they were asked to take into account ‘their ages and likely future ability to look after or provide for a child’s needs’.47 This criterion was eliminated altogether from the Human Fertilisation and Embryology Authority (HFEA) regulations of 2005 concerning the child’s welfare; in other words, it is no longer considered a risk factor per se. The authors of the seventh edition of the Code of Practice of 2007 took a step further and stipulated that patients seeking fertility treatments should not be discriminated against on the basis of their gender, race, incapacities, sexual orientation, religion, or age.48 A similar disposition is included in the latest edition of 2009.49

C. Financial coverage restrictions
The German law of 199050 and the Guidelines issued by the Federal Medical Chamber (Bundesärztekammer) in 2006,51 which comprise the legal ART regime, do not include any age condition for eligibility. Financial coverage constitutes the sole age-related condition: since 2004, a refund of 50 per cent for the first three IVF cycles has been guaranteed, under the condition that the woman is not older than 40 and her partner not older than 50.52 The constitutionality of this refund age limit has been challenged: on 3 March 2009, the Federal Social Court53 confirmed this condition, in a case in which a 41-year-old woman contested the fact that she had to assume the costs herself. She presented data from 2006, according to which the chances of conceiving for women between 40 and 42 years were 15 per cent. The Court declared that the age limit was constitutional for several reasons: firstly, the legislation was not obliged to follow scientific studies; secondly, artificial insemination was not the main field of public health insurance, as fertility is not considered to be a pathology; thirdly, the age condition was justified by the child’s interest, given the higher rate of malformation in late births. Putting an age limit on funding is not considered infringing the patient’s right; it is viewed as a legitimate and rational means of assigning public health budgets.

3. No Maternal Age Limit
In certain jurisdictions, no maternal age limit has been set at all. We shall distinguish between countries where there is full or partial financial coverage, and countries where no financial coverage for IVF treatments is provided.
A. ART regimes providing full or partial financial coverage

In several countries with full or partial financial coverage for ART services, no age limit has been set: Finland,\(^5\) Sweden,\(^5\) Portugal,\(^5\) and Spain.\(^5\) Also, Australia’s ART full public funding policy may be unique in the world in not featuring any female age limit – neither in eligibility nor in funding.\(^5\)

B. ART regimes providing no financial coverage

The USA has no formal law, or regulation, limiting the availability of ART treatments by age. Some states that require insurance companies to cover fertility services impose or allow maximum age limits on that coverage. To date, it seems that only four states impose such a limit in their insurance legislation: in New York, insurance coverage is limited to women between 21 and 44 years of age;\(^5\) in Rhode Island, to women between 25 and 42 years of age;\(^5\) in Connecticut, to women under 40;\(^5\) and in New Jersey, to women up to the age of 45.\(^5\)

Generally, the decision to allow older women access to ART rests with the individual physicians or with the clinics. Some clinics have adopted their own guidelines. The only norms are those issued by the American Society for Reproductive Medicine (ASRM), which concern egg donation and embryo transfer after a certain age: physicians should obtain a complete medical evaluation designed to assess the physical fitness of a patient for pregnancy before deciding to attempt egg donation or transfer of embryos to any woman of advanced reproductive age (ARA), ie over the age of 45.\(^5\) Egg donation and embryo transfer should be strongly discouraged or denied to women of advanced reproductive age with underlying conditions that increase or exacerbate obstetrical risks. Because of concerns related to the high-risk nature of pregnancy, as well as longevity, treatment of women over the age of 55 should generally be discouraged. Even though these rules are not binding, they are followed by many health professionals.

IV. POSSIBLE EXPLANATIONS UNDERLYING THE DIFFERENT FRAMEWORKS

As we have seen, the solutions found in the different countries vary considerably. Some reasons for these differences might be related to the values promoted within the different ART regimes (1), others concern the specific question of age limits regardless of the logic of the entire ART system (2). Indeed, longstanding societal assumptions about the importance of mothers for children’s well-being and the view that motherhood is central to the identity of healthy women (Phoenix et al., 1991; Rowland, 1992; Ulric and Wetherall, 2000) bring prospective mothers under particular scrutiny (Blyth et al., 2008). The dominant discourses around the question of the necessity of an age limit are inevitably infused with social expectations.

1. Age-limit Frameworks related to Values promoted within ART Regimes

A. Reproductive autonomy

There is not necessarily a correlation between a non-permissive ART policy and setting a legal age limit, or between a permissive ART policy and the absence of such an age limit. For example, in Belgium, Greece, and Israel, the few countries where
eligibility is contingent upon a specific age, surrogacy is permitted or at least not prohibited, and homosexual women can seek fertility treatments. However, the argument of reproductive autonomy seems to have more weight in countries where ART is not intensively regulated. For example, in the USA the only federal requirements are that doctors and fertility clinics be licensed and that clinics report their success rates to the Centers for Disease Control and Prevention. Other than that, as we have seen, the ART regime in the USA relies on guidelines issued by the American Society for Reproductive Medicine (ASRM), a professional organization, whose recommendations are not binding. The 2016 ASRM Guidelines implicitly confirm the reluctance for excessive regulation, and demand an accurate estimate of the medical constraints:

The committee believes that many ARA women, particularly in the age range of 45-54, are healthy and well prepared for parenting, and therefore are reasonable candidates to receive donated oocytes and embryos. Infertility is an expected characteristic of menopause. The Committee believes that achieving a pregnancy through oocyte and embryo donation after the occurrence of natural menopause is not such a significant departure from other currently accepted fertility treatments as to be considered ethically inappropriate. The medical risks to the mother and child are of paramount concern, but it will be many years before adequate data are available to objectively evaluate these issues fully. In most cases, however, these pregnancy-related complications are not severe enough to compromise the long-term health of women and their ability to care for children.

Thus, the ASRM Ethics Committee points to the fact that any restriction on older women’s reproductive rights should be proportionate (not to set a general exclusion; not to consider these age-related complications as compromising) and rely on an objective basis (on adequate medical data, which is not yet available).

B. Nature

Many countries refer in their legislation to the biological procreative age (France, Italy, and Romania), the implicit message being that appearances have to be ‘natural’. In other words, people should be authorized to seek fertility treatments at an older age only ‘if Nature would have allowed it’ (as the Greek legislation suggests in referring to an ‘upper limit of natural reproductive capacity’). Thus, maintaining a ‘natural façade’ of procreation presents a twofold goal: firstly, it relies indirectly upon the risks assumed in natural-spontaneous conception, which are socially accepted; secondly, it aims at ensuring the social conformity of individuals to a traditional parental scheme. The linkage between nature and norms (Birnbacher, 2006) or between motherhood and nature are neither new nor solely related to the age limit context. Motherhood is regarded as the natural, desired, and ultimate goal of all women (Stanworth, 1994; Mauthner, 2002). A large body of feminist research has demonstrated that this linkage is historically, socially, legally, politically, and philosophically construed, in general (Bock and Duden, 1977; Okin, 1979; Badinter, 1981; Bock and Thane, 1991; Albertson-Fineman and Karpin, 1995) as well as in the fertility
field (Thompson, 2001; Théry, 2015; Parizer-Krief, 2016). Feminists refuted the common assumption of motherhood as something innate to women, by showing that the association of maternity with women’s ‘nature’ conflates biological and social motherhood. Indeed, for many traditional theorists of the family, nature itself necessitates the division of tasks within the family,⁶⁹ the claim being that women naturally want to have and raise children; men by nature do not (Rousseau, 1979). The physiological gender difference is considered to be the explanation: women’s predominant role in childbearing and domestic labour is their biological destiny.

In the specific context of age limits, not allowing women to bear children beyond the average age of menopause on the sole ground of its ‘unnaturalness’ is a clear example of ignoring the social dimension of motherhood, and, in our opinion, is not justified: nature cannot serve as grounds for ethical positions. The precise goal of techniques in general, and of medicine in particular, is to remedy ‘natural’ pathologies and hostile ‘natural’ phenomena, as well as to ameliorate the ‘natural’ human life conditions.

C. The child’s welfare
The above-mentioned arguments – reproductive autonomy and nature – address the potential parents. Switzerland is one of the few countries where an explicit reference to children’s well-being has been added, for example their need to be brought up by their parents until the age of majority. In the UK the age limit is indirectly addressed through the child’s welfare criterion. Applied within the ART context, the child’s welfare criterion means that third persons involved in the procedures have to justify their intervention according to this criterion; that the child’s well-being has to be given priority over the interests and wishes of the potential parents; and that ART can be used only when the child’s well-being is guaranteed.

The child’s welfare criterion was developed within the framework of family law. To use it in the context of ART, in which children only exist potentially, seems problematic (Blyth, 2008; Büchler and Clausen, 2014). To argue a child should not be conceived because it would violate his or her well-being equals saying that it is better not to exist than to exist with a specific set of parents. A child born to another woman, namely a younger woman, is not the same, but another child (Parfit, 1984). Therefore, within the framework of ART the child’s welfare cannot be shaped as an individual right, it can at most be understood as a public interest. However, the argument that there is a public interest in preventing children from being born to older parents lacks an empirical foundation, and a general infringement of reproductive autonomy by setting restrictive age limits in the name of the child’s welfare would not be proportional.

2. Specific Reasons underlying the different Frameworks
A. Pro-natalist policy
Pro-natalist policy, aiming at population increase, provides a favourable structure for economic growth, as there would be a consistent increase in the number of young adults entering the working population in relation to the number of people dependent on others because of their advanced age. The increasing ratio of ageing
dependents to wage earners is an important factor in economic decline. Nevertheless, the impact of ART is minor: it has been concluded that governments’ support of ART is beneficial for families, but the effect on the total fertility rate is extremely small (ESHRE, 2010); this influence is *a fortiori* negligible in the context of providing ART services in the area of age-related infertility.

Pro-natalist policies are primarily a cultural factor. For example, France has a long history of consistent pro-natalist policies that include generous social benefits for pregnancy and childcare; this can explain why the fertility rate in France is slightly higher than in other comparable North-Western European countries. The tradition of public interference in spontaneous procreation and the inclusion of ART activities in the public health system can explain France’s comprehensive ART normative disposition (Parizer-Krief, 2016). Indeed, the mere absence of a legal age limit does not point to a pro-natalist regime; sometimes, on the contrary, legislators set a very advanced age limit. In Greece, the advanced age limit might be considered part of a pro-natalist policy. This policy can be explained by the very low natality rate of the country (Rokas, 2013). This has become even more dramatic since the onset of the economic crisis.70 Israel has the highest rate of fertility treatments per person, and this medical procedure is fully covered by the state. The country offers open access to ART services to all its citizens, including Palestinians who are Israeli citizens. The percentage of live births that are the result of IVF treatments in Israel was 4.3 per cent in 201371 (compared to 2.2 per cent in the UK in 2012).72 In terms of women’s education and participation in the labour market Israel has similar rates to other Western countries; nevertheless, the fecundity rate per woman is higher by approximately 50 per cent (Birenbaum-Carmeli, 2004). Several explanations for the high Israeli fecundity rate can be proposed: Jewish tradition (‘be fruitful and multiply’); the will to fight the ‘demographic danger’ in the region, in other words to increase the Jewish population (Kahn, 2000); the need to have enough people to protect this young country; the fear of losing a child in a military confrontation; the need ‘to compensate’ for the six million people who died in the Holocaust, as well as a certain sensitivity to limits imposed upon the freedom to procreate during this period. All these elements encourage a pro-natalist culture in contemporary Israeli society (Sperling, 2010).

Setting an age limit can be interpreted as a measure to prevent older women who have little chance to conceive from using ART technologies. On the other hand, it might also be a ‘legitimating signal’ for health professionals in particular and for society in general that women over the age of 40 should not be rejected even though they are less likely to become pregnant. This liberal approach, enhancing the value of maternity at a high price that the state is willing to pay, has a collective dimension of encouraging procreation, thus benefitting not only women, but also society as a whole.

**B. Financial coverage**

No country except Australia has chosen to provide full funding for ART activities without setting any age limits. The issue of coverage is related to the social cost, ie not to encourage repetitive failures, and ‘deresponsibilization’ of patients because they do not have to contribute to the costs.
As we have seen, many countries that publicly fund ART do set a female age limit (by law or by guidelines) for funding without touching upon eligibility. In Germany, when the issue of setting an age limit for funding was challenged before the courts, the message was clear: the state has the right to decide upon budget assignment, even in the very personal context of ART. As public health budgets are inherently limited, criteria have to be set in order to select the persons entitled to fertility treatment. In defining a public policy, age is not the only criterion available; other factors can be taken into account while doing an assessment (Anderman-Shachar, 2014): if the couple already have children (it seems more ethical to help couples who do not have any children yet); the probability of success (effectiveness has to be proportional to the resources invested); the cost of treatments (for example, treatment of HIV positive patients or of severe male infertility is more expensive than the treatment of healthy patients). However, age seems to be the paramount criterion. In other countries, such as the USA, ART has never been considered a service that can be claimed by the citizens. More generally, hospitals and other healthcare institutions have been shaped by a capitalist market from the outset, and the very liberal regulation on ART excludes formal limits on women’s reproductive age. This leads us to the general conclusion that setting an age limit for eligibility and for financial coverage does not rely upon the same grounds and constraints, but, in certain cases, as in the USA, both issues are related.

V. CONCLUSION
The analysis of the diverse regimes in different countries shows that the cultural context plays an important role in ART regulation, also with regard to the question of an age limit.

However, from the perspective of legislators, setting an age limit for eligibility is an impossible mission as there is no bright-line rule, even in medical terms. Setting a defined age for such a sensitive private issue might be regarded as having the potential to be unjust.

The arguments put forward to justify age limits, namely reproductive autonomy, nature and the child’s welfare, are, however, not convincing. They express a specific cultural understanding of motherhood. The only valid and sound justifications for setting age limits are medical indications, integrated into the principle of non-maleficence. This type of evaluation requires an individualized assessment by healthcare practitioners of the patient’s health risks, integrating considerations regarding the mental and physical ability of the prospective parents to engage in the project of parenthood. The task of setting age limits for eligibility does not fall primarily within legislators’ competence. Their vocation is inherently general (and seems more relevant for setting an age limit for financial coverage for example); this task should be undertaken by health practitioners, guided by professional societies, who encounter these situations in their daily practice and have the skills to define criteria for this kind of sensitive, complex, and important evaluation.

NOTES
1. In 2016, a woman believed to be 72 years old has given birth to a baby boy in India following IVF treatment and egg donation (‘Indian woman in her 70s gives birth to healthy baby boy’,
2. The literature seems to suggest that the age of 45 is generally a turning point for men (Hassan and Killick, 2003).

3. This kind of cryoconservation is qualified ‘social’ or ‘elective’ because young, healthy women are freezing their oocytes for reasons not related to a cancer treatment.

4. This recent method of cryoconservation consists of dehydrating the oocyte at the moment of freezing, and rehydrating it again while unfreezing it, thus eliminating crystals formation.

5. See Almeling (2006): this research, conducted in ART clinics in the USA, examined the criteria according to which gametes are selected. As for female donors, the agencies appreciated their ‘emotional record’ (degree of altruism), which was integrated into their file and had even an impact upon the oocyte price, whereas men were not solicited to express any emotional commitment, and their financial goal was tolerated. Accordingly, the agencies’ recruitment discourse was different: when targeting men the financial aspect was highly stressed, while addressing women the main argument was altruistic (‘giving the gift of life’), thus encouraging female candidates to express their altruism and other characteristics, compatible with the image of a good mother (a description of their interests was always attached to the file).

6. In Spain (Section 6(1), Law 14/2006 of 26 May 2006 on Human Assisted Reproduction Techniques) and Portugal (Section 6(2), Law 32/2006 of 26 May 2006 on Medically Assisted Procreation), access to ART is given to persons beyond the age of 18; in the UK, regarding the specific Parental Order procedure for surrogacy, both intended parents have to be at least 18 year-old on the day when the judicial decision is issued (section 30(4) Human Fertilisation and Embryology Act 1990; section 54(5) Human Fertilisation and Embryology Act 2008).

7. The author cites one exception – a study (Boivin et al., 2009) which, taking into account all the relevant (and potentially confounding) variables, found no negative effects of age of the mother (>38 years) on the child’s wellbeing.

8. The main disadvantages were mentioned in a study examining experiences of persons who used IVF to conceive at the very end of their reproductive capability: the unexpected difficulty in conceiving that culminated in the use of IVF (48% of the women; 17% of the men), a smaller family size (17% of the women and 2% of the men), although many expressed feeling ‘lucky’ to have children at all. Other disadvantages were lack of energy for parenting (38% of the women; 26% of the men), less available lifetime to spend with children (31% of the women; 19% of the men) and anticipated stigma as older parents (12% of the women; 19% of the men) (Mac Dougall et al., 2012).

9. The authors recommend health professionals who provide IVF services to patients 50 years of age and older to take into account the following factors: remaining life expectancies of both parents should well exceed 18 years; a contingency plan should exist for guardianship in the event of death or illness of one, if a single parent, or both parents; financial resources should be available to support the child after the parents retire; the patient should be referred to a maternal-fetal medicine specialist for evaluation of high-risk pregnancy associated with advanced maternal age; the patient should undergo extensive medical screening, especially cardiac evaluation, including but not limited to stress testing and electrocardiogram; both parents should undergo psychological evaluation.

10. The ECHR considers that ‘the right of a couple to conceive a child and to make use of medically assisted procreation for that purpose is . . . protected by Article 8, as such a choice is an expression of private and family life’ (s82, S.H. and Others v. Austria, Gr. Ch. 3 Nov. 2011, No 57813/00). See also Dickson v. The United Kingdom, Gr. Ch., 4 Dec. 2007, No 44362/04.

12. This argument does not pretend to justify setting an age limit for men, based upon equality considerations: on the contrary, such a limit can discriminate between women who have same-aged or younger partners and those who have older ones.

13. This statement supports findings in other studies about motherhood, career and financial means (Joshi, 2002; Amuedo-Dorantes and Kimmel, 2005; Browning, 2007), cited in MacDougall et al., (2012). See also Steiner and Paulson (2006). Moreover, in a study exploring the perceived advantages and disadvantages of postponed conception as well as participants’ retrospective opinions about the ‘optimal age’ for parenting, most women and men largely believed that childbearing later in life resulted in advantages for themselves and their families. These included having established careers with financial security (31% of the women; 36% of the men) and career-time flexibility (43% of the women; 31% of the men), enhanced emotional preparedness (72% of the women; 57% of the men), committed to coparenting relationships (22% of the women; 12% of the men) and a positive overall family experience (Mac Dougall et al., 2012).

14. This argument can be deducted from the finding that, in retrospect, many women stated that they would have wanted to have children earlier if they had met their partner sooner (Mac Dougall et al., 2012).

15. s3(3), Fortpflanzungmedizingesetz, FMedRÄG 2015.


23. Ibid.


26. In the judgment of 9 April 2014 (n°162), the Italian Constitutional Court ruled that gamete donation techniques were authorized within the current regulatory framework.


28. Minors’ Court of Piemonte and Valle d’Aosta, Sentence no 133, 16 August 2011.

29. Translation in Gulino et al. (2012).

30. ECHR, Gr. Ch., S. H. and Others v. Austria, Application no 57813/00, 3 November 2011, §114.

31. For a critique of this decision, see Pennings (2013).


39. Council of Europe, Steering Committee of Bioethics, Replies by the Member States to the questionnaire on access to medically assisted procreation (MAP) and on right to know about their origin for children born after MAP, CDBI/INF (2005) 7 REV 2, p. 25.
41. Ordinance No. 7 of 22 March 1989 issued by the Hungarian Ministry of Health and Social Affairs, cited in Karajicic Sandor and Demeny.
42. Legislation on biotechnology in the Nordic countries- an overview 2015; Council of Europe (2005), 28.
44. The Nice (https://www.nice.org.uk/) is an independent authority which sets standards and issues clinical recommendations concerning application and use of resources within the NHS. These are not binding but have nevertheless influence upon availability of medical treatments in the public sector.
46. s3.14(b).
47. s3(17)(d).
48. G.3.2.2
49. s8.7: 'Those seeking treatment are entitled to a fair assessment. The centre is expected to consider the wishes of all those involved, and the assessment must be done in a non-discriminatory way. In particular, patients should not be discriminated against on grounds of gender, race, disability, sexual orientation, religious belief or age.'
52. §27(a), 2, 3, SGB, V.
55. The Swedish Genetic Integrity Act 2006:351 which deals with ART, sets only a very imprecise limit for the gamete donor: according to its Chapter 7, Section 2, ‘A donor of an egg or sperm shall be of age.’
56. Berg Brigham et al. (2012). However, despite the absence of an age limit in Portuguese law, it seems that women beyond 45 seeking ART services and women beyond 50 who seek egg donation tend to go to the USA or to Spain (Alvares, 2015).
63. 'Oocyte or embryo donation to women of advanced reproductive age: an Ethics Committee opinion', Ethics Committee of the American Society for Reproductive Medicine, Fertility and Sterility, Oct. 2016, 106, 5, e3-e7.
64. Whereas in the former ASRM guidelines of 2013, the category of women of advanced reproductive age (ARA) was set at 50 years ('Oocyte or embryo donation to women of advanced...


66. ‘Oocyte or embryo donation to women of advanced reproductive age: an Ethics Committee opinion’, Ethics Committee of the American Society for Reproductive Medicine, n 64 above.


68. The author demonstrates this link in several domains, such as cloning, prevention of suicides and research on human stem cells.


70. ‘The empty crib’, *The Economist*, 27 August 2016, 14–16.


73. The problem of this criterion lies in defining the lowest success rate, under which no funding would be granted.

REFERENCES


Council of Europe, Steering Committee of Bioethics (2005) *Replies by the Member States to the ques-tionnaire on access to medically assisted procreation (MAP) and on right to know about their origin for children born after MAP*, CDBI/INF (2005) 7 REV 2.


The ESHRE Capri Workshop Group (2010) 'Europe the continent with the lowest fertility', *Human Reproduction Update* 16(6), 590–602.


Lewis, B. et al. (2006) 'Medical implications of the male biological clock', *JAMA* 296, 2369–71.


Maheshwari, A. et al. (2008) 'Women’s awareness and perceptions of delay in childbearing’, Fertility and Sterility 90, 1036–42.


