SAPIENZA UNIVERSITÀ EDITRICE
L'Uomo, vol. XIV (2024)
n. 1, pp. 89-112

E-ISSN 2465-1761

Moral and Ethical Dilemmas of Italian Embryo Recipients

Corinna S. Guerzoni
Università di Bologna

Abstract

This paper explores the complex landscape of assisted reproductive technology (ARTs), particularly focusing the ethical dimensions of embryo donation. The emergence of in vitro fertilization (IVF) and the subsequent proliferation of unused embryos have sparked ethical debates regarding their disposal, including cryopreservation and donation. The paper delves into the ethical concerns raised by embryo donation, exploring the narratives of embryo recipients. This article shows the different ethical representations regarding the ontological status of embryos, while paying attention to the ambivalence related to language, practices and meaning that revolve around embryo adoption and/or donation.

Keywords: Embryo donation, Embryo adoption, Embryo recipients, IVF, Ethics.

Riassunto

Questo articolo esplora il complesso panorama della tecnologia riproduttiva assistita (ARTs), concentrandosi in particolare sulle dimensioni etiche della donazione di embrioni. L'emergere della fecondazione in vitro (IVF) e la conseguente proliferazione di embrioni inutilizzati hanno scatenato dibattiti etici sul loro utilizzo, come nel caso della crioconservazione e la donazione. L'articolo approfondisce le preoccupazioni etiche sollevate dalla donazione di embrioni, esplorando le narrazioni dei riceventi di embrioni. Esso mostra le diverse rappresentazioni etiche relative allo status ontologico degli embrioni, prestando attenzione all'ambivalenza legata al linguaggio, alle pratiche e al significato che ruotano intorno all'adozione e/o alla donazione di embrioni.

Parole chiave: Donazione di embrioni, embrioadozione, riceventi di embrioni, IVF, etica.

Introduction

Throughout history, human societies have endorsed the formation of families in different ways. Various solutions have been proposed for individuals who – for different reasons – struggled to conceive. Adoption was one of the first options (Howell 2006), while effective fertility treatments appeared only at the end of the twentieth century. There have been many advances in assisted reproductive technology (ARTs), from simple fertilization (IUI) to more complex treatments such as in vitro fertilization (IVF) where multiple eggs are collected and fertilized, resulting in several embryos. The issue of the cryopreservation of embryos during an IVF treatment began to emerge in the late 1970s. A single IVF cycle involves the creation of numerous embryos and, generally, a greater number of those than will be used for conception. In the early stage of ARTs, more embryos were transferred into the uterus to increase the probability of embryo attachment. With technological development, by the end of the 1990s the standard practice was to transfer no more than two embryos at a time. Thus, the number of unused embryos has grown, opening space for ethical and moral debates on what to do with the remaining embryos.

Across the world, stored embryos are described as problematic, because a significant proportion of these are labelled as «surplus» for reproductive needs and may remain cryopreserved indefinitely if patients do not take any decision, but also if there are not any specific laws on embryo disposal. At the end of IVF treatment, patients have different disposal options for unused embryos: they may be transferred immediately to other patients' wombs, disposed of, or cryopreserved for later use. These four options are not available everywhere. Some legal frameworks allow all of them – as in Spain – while others guarantee only some, as the Italian context. Two main ethical questions are raised by embryos cryopreserved for later use: what should be done with these embryos? And who should decide what happens with these embryos?

At the European level, there is disagreement regarding cryopreserved embryos' status, as shown by the varied legal definitions used in different countries. Embryo disposal is subject to both the norms determined by local policies and clinics, and the vast variety of personal approaches regarding extra embryos, which may range from Egyptian Muslims who want their embryos destroyed (Ihnorn 2003) to Southern Indians who are openly supportive of donation (Bharadwaj 2005). Embryo donation takes two forms:

donation for research, and donation to others for family-building. Building families through embryo donation was first reported in 1983 (Trounsen *et al.* 1983) and since then has been described as a controversial practice. Donation is an accepted practice in numerous countries (Lyerly *et al.* 2005) but forbidden in others (Calhaz-Jorge *et al.* 2020). On the one hand, embryo donation has been described as a problematic issue; on the other, it has been seen as a solution. Patients with extra embryos may embrace donation as an opportunity for their embryos to be used, helping others who have similar difficult experiences with infertility (de Lacey 2005; 2007b; Lyerly *et al.* 2010), but also clinics need to manage the high number of embryos stored at their facilities. The ethical issues of patients donating embryos, either for research purposes or to other patients for family-building, has been discussed at different levels (2019 Ethics). Moral and ethical dilemmas addressed in the literature are somewhat shaped by the legal and cultural environments in which embryo donation occurs (de Lacey *et al*. 2015). One of the first issues raised is the lack of genetic connection between children and both parents, as denominated in these works (Golombok *et al*. 1995; Golombok *et al*. 2006; Cutas & Smajdor 2017). Other research highlights the complex family structure generated by it, while others stressed the presence of fully genetic «siblings» being raised in other families (Soderstrom-Anttila *et al*. 2001; Goedeke & Payne 2009; Blyth *et al*. 2019), something that differs from when children are born from eggs or sperm donated by one of their parents. Issues arise regarding the potential impact of embryo donation on family dynamics and the understanding of genetic and social kinship. Children born from donated embryos have genetic connections to donors who are not their parents, raising issues of identity and genetic origin (Huele *et al.* 2020; Pennings 2022).

While IVF has been extensively studied by anthropologists, embryo donation remains an understudied phenomenon, the exception being a few publications based on data collected in California examining Christian embryo «adoption» programs that relate to them as frozen souls needing to be saved (Collard & Kashmeri 2009; 2011; Cromer 2023); the structural racialization of donated frozen embryos (Cromer 2019); the French context (Giraud 2014; Mathieu 2017), and the Italian one (Zanini 2013). Despite the increasing need for embryo donation (Huele *et al.* 2020) there is a lack of discussion in the literature regarding this phenomenon.

Although embryo donation isn't as popular as general IVF or single gamete donation, the number of people requesting treatment is rising

(Huele *et al.* 2020). Spain is recognized as one of the fertility hubs of the world, since it has very flexible legislation on IVF, allowing practices denied in other European countries. The latest data show that in 2018 Spain was the largest European provider of donor embryos, with 3,479 donated blastocysts (Sociedad Espanola de Fertilidad 2018). The Spanish law (Aznar-Lucea 2016) allows fertility clinics to obtain authority regarding surplus embryos' disposal in all the cases where clinics have been unable to contact patients for over four years, or when they were not able to renew informed consent previously signed. Donated embryos come from a disparate pool: in some cases, they are directly donated by patients, in other cases they are labeled as «abandoned embryos» and managed by fertility centers. These embryos include those created with patients' gametes, and those from egg and sperm donors. According to data released by the International Committee for Monitoring Assisted Reproductive Technologies, patients come mainly from Italy, France, and Germany. Since 2014, foreigner clinics, especially Spanish facilities, opened branches in Italy. Generally, the first visits were made in Italy, but all the other treatments specifically banned in Italy (such as embryo transfer of donated embryos) occur in Spain. This has made embryo donation between Italy and Spain particularly effective, nourishing fertility chains (Vertommen, Pavone & Nahman 2022) linking couples in Italy, Spain, and beyond. In this article, I analyze the embryo donation narratives of Italians who became parents using donated embryos from Spain. I focused my attention on Italian embryo recipients, most of whom traveled to Spain for embryo donation. Law Feb. 19February 2004, No. 40 – Regulations on medically assisted reproduction – (here referred as Law 40) is one of the most restrictive in the European Union (Zanini 2013), allowing access only to straight couples with proven infertility with the option of using exclusively their own gametes. In 2014, after several interventions by the Constitutional Court, Law 40 underwent some important changes, including the introduction of gamete donation. While this change allowed the creation of embryos using both sperm and egg donors – so-called double donation – no specific directions were given about embryo donation. Cryopreserved blastocysts can be exclusively used either by the couple who created them or stored in fertility clinics in perpetuity. Due to the various legal prohibitions and the long waiting lists for fertility care, an increasing number of Italians travel abroad. The article examines the diverse ethical interpretations regarding the ontological status of embryos and explores the

complexities and ambiguities surrounding the language, practices, and meanings linked to embryo donation.

The representation and status of embryos in Italy and beyond

The ontological status of embryos lies at the heart of numerous debates in various European and North American nations, and in other parts of the world. It is important to mention that ethical standards established by the law differ from those held by the public. Indeed, the way in which legislation distinguishes between ethical and unethical behavior does not always reflect the views of the public. In an ethnography conducted in an Ecuadorian fertility lab by Elisabeth Roberts (2007), two distinct logics arose when discussing relinquishing embryos. One aligns with what Roberts defines as «life ethics» (181), viewing embryos as interchangeable living entities, while the other aligns with what she calls «kin ethics» (*Ibidem*), conceptualizing embryos as part of a specific kinship web. According to Roberts, kin ethics leads some Ecuadorians to discard embryos rather than cryopreserve or donate them, as they perceive embryos as relatives in need of protection from temporal disruption and unauthorized circulation beyond familial boundaries, rather than simply life to be preserved. In this framework, kin ethics prevails over other types of conceptualizations related to embryos. This shows that embryos are represented as individuals, in line with some other dominant depictions of embryos. The Italian anthropologist Claudia Mattalucci theorized the concept of embryiopoiesis, a human construct that defines methods of depicting life before birth, regardless of cultural, institutional, and legislative differences between states (Mattalucci 2015) According to Mattalucci, the predominant feature of embryopoiesis in Western societies is the representation of embryonic development as a «unitary process» in a standalone form, where the relational condition is underestimated in favor of biology. In other words, the biological dimension is often described as a separate process and the role of other necessary factors – i.e., a uterus – is not highlighted. In this paper, I show how, with embryo donation, the relational dimension (Giraud 2014; 2015) is at the core of embryo recipients' narratives.

Local representations of how the category of person is described also influence the ways in which life before birth is imagined (Strathern 1992). It has been shown in literature how powerful an impact ultrasound monitoring has on strengthening mother-fetus attachment before delivery (Duden

1994 [1991]). Pregnant women were able to see the fetus in the womb, entering into a very particular relationship with it. Different forms of pregnancy monitoring (ultrasound, heartbeat readings, genetic testing) allow mothers to begin a relationship in early gestation (Georges 1997; Rapp 1999). The ability to observe the fetus in the womb made it a public entity (Duden 1994 [1991]). Being able to see inside women's bodies also changed the relationship between mother and fetus: it made visible each stage of the nine-month relationship, highlighting the presence of two separate and specific individuals. The medicalization of pregnancy on the one hand and the development of reproductive technologies on the other have fueled the representation of distinct identities for fetuses and pregnant women. Embryos and fetuses are conceptualized as individuals, meaning they are seen as possessing specific traits that make them distinct, encoded in their DNA (Mattalucci 2015). This tendency is particularly noticeable in the way cultural perceptions and depictions of embryos are formed.

In 1996, the Italian National Bioethics Committee published a document entitled «Identity and Status of the Human Embryo», which states:

> The Committee has unanimously come to recognize the moral duty to treat the human embryo, from fertilization, in accordance with the criteria of respect and protection that must be adopted with respect to human individuals to whom the characteristic of personhood is commonly attributed, and this regardless of whether the embryo is attributed the characteristic of personhood with certainty from the outset... or whether one prefers not to use the technical concept of person and to refer only to that membership in the human species which cannot be contested in the embryo from its earliest moments and does not undergo alteration during its subsequent development.

The text calls for human embryo protection as the «subject» of the reproductive process. This concept was subsequently reaffirmed in 2004, when Law 40 passed, introducing *concepito* (conceived being), a concept previously absent from Italian legal practice (Zanini 2013). Another significant change was prohibiting cryopreservation, a practice commonly carried out by Italian fertility clinics prior to the introduction of Law 40 to avoid the storage of human embryos inside liquid nitrogen tanks and to preserve their dignity. Between 2004 and 2009, in Italy it was legal to create a maximum of three embryos and all of them (regardless of grade and quality) had to be transferred into patients' uteruses (Benagiano & Gianaroli 2010). Another important change was the repeal of certain pro-

visions in 2014, followed by amendments and updates in 2019.[1] These changes mainly concerned limitations and regulations regarding IVF techniques and practices of gamete and embryo donation. Additionally, there have been variations regarding the number of embryos to be transferred and embryo preservation procedures. Legislative change has often reflected ongoing ethical and scientific debates on assisted reproduction, seeking to balance the protection of patients' health and rights with moral and societal considerations (Mattalucci 2013).

The dominant players in Italian politics (Hanafin 2007) around this issue are the Catholic Church and pro-life activists (Mattalucci 2015), who unanimously support the moral duty to protect the dignity and the right to life of embryos. In 2022, Pope Francis, through the Pope's World Prayer Network on the theme «For a Christian Response to the Challenges of Bioethics», said

> Biotechnological applications must always be used from the standpoint of respect for human dignity. For example, human embryos cannot be treated as disposable, waste material; in this culture of waste, they also enter: no, it is not possible! Thus, spreading this culture does so much damage. Neither can we allow economic profit to condition biomedical research[2].

The most significant points advocated by the Pope on the subject are, firstly, respect for human dignity. Pope Francis emphasizes the importance of using biotechnological applications while upholding human dignity. This includes refusing to treat human embryos as disposable objects and opposing any practices that violate that intrinsic dignity. The second point relates to ethical practices for biomedical research. The Pope warns against the conditioning of biomedical research by economic profit. He argues that the goal of biomedical research should be the well-being and health of individuals, not financial gain. The pontiff's remarks highlight the Catholic Church' position regarding the ontological status of the embryo, in addition to the way it deals with scientific advances in reproductive

---

[1] A series of Constitutional Court rulings have declared parts of the law unconstitutional, introducing, for example, heterologous fertilization instead of homologous fertilization. For in-depth analysis, *cf.* Ferrero, Pulice 2021.

[2] Translated by the Author. https://stream24.ilsole24ore.com/video/italia/papa-embrioni-umani-non-siano-usati-come-materiale-usa-e-getta/AENBGnIB?refresh_ce=1

medicine. This is crucial when discussing the influence of certain Catholic associations on Italian politics, especially when discussions touch upon bioethical issues such as reproductive politics. Despite continuing ambivalence concerning the status of embryos, the dominant representation of embryos is as individuals who need protection.

Embryos' ambivalence

A common thread in existing scholarship centers on embryos' ambivalence, since embryos are represented differently in different cultures (Franklin 2006; Roberts 2007; Zanini 2013). Moreover, even in the same society, in relation to the social actors involved – such as donors and recipients, fertility doctors, embryologists, third-party coordinators and so on – embryos' representation may differ drastically. All these depend on the context, as well as on the characteristics of the embryo or fetus, the timing (Giraud 2015), and the relationships in which they are involved.

The ethical and moral standing of embryos has been central to the discussion surrounding research that involves human embryonic stem cells (Haimes & Taylor 2009). Authorities like the American College of Obstetricians and Gynecologists (2006) and the Human Fertilization and Embryology Authority in the UK (Recommendations for gamete and embryo donation: a committee opinion, 2012) have expressed the view that although embryos have the potential to develop into persons, they should not be granted the same legal status as a person. Although these and other scientific societies have produced knowledge highlighting embryos' specificities, the language used to refer to the practice under analysis often reflects an existing ambiguity. There are predominantly two terms, often used as synonyms. On the one hand, there is «embryo adoption», and on the other «embryo donation». This terminology is not neutral. Embryo adoption is described as a «morally preferable alternative», framing it as a salvific action (Cromer 2018). In this framing, embryos are human and alive (de Lacey 2005; 2007a; Frith *et al.* 2011; Nachtigall *et al.* 2005; O'Brien 2010; Söderström-Anttila *et al*. 2001). Ethnographic examples that highlight this trend have been conducted in the USA, where embryos are considered «preborn children» (Collard & Kashmeri 2011), and as frozen souls to be saved (Cromer 2023), but also in European countries such as France (Giraud 2014; 2015; Mathieu 2017). By employing the term «adoption» in this context, embryos are treated as legally recognized subjects, akin to

adopting children after birth. Embryo donation, by contrast, focuses on an understanding of the embryo that does not portray it as «already life» and embraces a variety of different meanings. In 2023, the American Society for Reproductive Medicine shared a document to discourage the using of «adoption» to refer to every embryo donation practice:

> The use of the term «adoption» in this context is misleading because it reinforces a conceptualization and status of the embryo as a fully entitled legal being and may lead to a series of legal procedures required for the adoption of born children that are not appropriate and that would unjustly burden both donors and recipients, as well as restrict medical practices, based on the embryo's legal status (2023: 944).

This highlights the problematic use of the term «adoption» in reference to donated embryos. This linguistic choice is described as inappropriate since it creates a conceptual association between the embryo and a fully entitled legal entity, which does not reflect the biological reality. Additionally, applying legal concepts related to the adoption of children to situations involving embryos could lead to confusion and entail legal proceedings unsuitable to the context of assisted reproduction. Therefore, according to Ethics Committee of the American Society for Reproductive Medicine, it is important to use precise and appropriate language that accurately reflects the nature of embryos and related ethical and legal issues.

Fieldwork and methodology

I began conducting research in 2020. The Covid-19 pandemic introduced a few challenges on human interactions that had a direct impact on ethnographic studies. From a methodological point of view, several limitations were imposed on the typical research practices used by anthropologists, mainly due to restrictions on mobility, the imposition of physical distancing, and the need to protect the health of the population. Such restrictions, initially perceived by many researchers as making it impossible to conduct research, have been read by other scholars as epistemological opportunities to reflect on the ways of conducting ethnographies in the contemporary world (Decataldo & Russo 2022).

As mentioned above, even though Spain is a hub for fertility treatments as embryo donation, I didn't want to geographically frame my fieldwork exclusively within Italy and Spain, since previous studies on reproduction

have already highlighted the transnational dimension of IVF. IVF journeys are often realized after having collected information through digital communities in which prospective parents learn how to navigate fertility treatments within networks of transnational circulation (Smietana 2019; Guerzoni 2020). Virtual communities are important spaces for grasping IVF experiences, since they are built around the meanings of reproduction and can become key places for accessing the field and understanding its intertwined meanings (Berend 2016). I identified some communities, fora, websites and Facebook and WhatsApp groups. I thus selected different online fora dedicated to fertility, reproduction and IVF, within which there were threads devoted to embryo donation. I subsequently ascertained the absence of Italian Facebook groups exclusively dedicated to individuals who used this practice. The lack of specific groups does not indicate the complete absence of digital communities, but it certainly highlights the peculiarity of the phenomenon that, unlike other practices such as egg or sperm donation, remains less visible. In addition to fora and digital groups, I searched the web for fertility clinics, mainly Spanish, but also those with offices in Italy, that offered embryo donation. I sent a flyer introducing the project to these clinics so that it could be spread within their networks. Communication with research participants was both synchronous, as it developed through video calls or online meetings (as in the case of the semi-structured interviews), and asynchronous through an exchange of instant messages and e-mail (such as the interwoven conversations on relevant topics between researcher and participants).

My research (2020-2023) has involved fourteen Italian couples (three straight couples, eleven lesbian couples), and five single people (three straight and two lesbians). Two straight couples used a clinic in the Czech Republic, while the others used Spanish clinics, or a Spanish branch opened in Italy. In addition, from 2020 to 2022, I followed some fora that had threads dedicated to embryo donation.

Embryo adoption and embryo donation from recipients' point of view

My interviewees chose embryo donation after numerous attempts at assisted reproduction in various states. None of them were aware of embryo donation when they began their fertility journey. It was not their initial choice; rather, fertility specialists recommended it after multiple unsuccessful IVF cycles. It has been explained to embryo recipients that these

embryos were donated by people who decide to give a gift freely to someone else. My data shown that not much is known about donated embryos, and therefore, it is not possible to know how the donors conceptualized the ethics of life (Roberts 2007). As embryo donation is anonymous in Spain, not much information was shared about these embryos beyond grading. There were no specifics on either donor, such as age or whether the embryos were created with the couple's own gametes, or whether they were contributed by one or two donors and then subsequently donated. Matches are made by clinics that select embryos mainly by phenotypic and blood group similarity.

Having discussed the terminology suggested by some of the most influential scientific societies to refer to embryo donation, in this section, I show the language used by fertility institutions and embryos recipients. I analyzed five Spanish fertility websites and in the shared information the main category was «adoption», even though ethics committees and reproductive medicine experts have emphasized that this term is inappropriate. Below is an example of text from one of the five websites:

> To *adopt* means to take care of a *human being* whose *biological parents* were unable to [do so]. Transfers of adopted embryos are very special. The wish of conceiving a child and the idea of leaving behind the treatments – or not having contemplated them for moral reasons – comes together. They are the nicest transfers as there is happiness in the air. From each child born, we could write a book about love, dedication, and *gratitude to life* [italics added].

In these narratives, an embryo is portrayed as the offspring of a couple that conceived it but who were unable to take care of it. This reinforces the perception of embryos as pre-existing children, and the crucial power of genetics as an important factor to structure kinship ties. These representations resonate with the moral compass of individuals who feel compelled to take responsibility for these «human beings». This clearly shows the salvific action of and motivation behind embryo donation. All the material shared by these five clinics highlighted embryo «adoption» as a dedicated practice to save lives, stressing the salvific and moral action of intended parents. Although the term «embryo adoption» was dominant in the sites of the clinics analyzed, it seems to be used differently during consultations with patients, according to data collected with Italian embryo recipients. Indeed, during the fieldwork, the two main expressions had distinct meanings, according to my interlocutors. The term «embryo adoption» was

mainly used by those who used a Spanish clinic and opted to receive a stored cryopreserved embryos remaining from previous IVF cycles: that is, «leftover embryos», created for patients both using their genetic materials or donors' gametes. In addition, the term «embryo donation» was mainly used by those who used a Czech fertility clinic, denoting embryos created using two gamete donors, known as double donation. In summary, embryo *adoption* refers to the utilization of already cryopreserved embryos, while embryo *donation* involves the use of specifically created embryos. Despite this important difference, respondents often used «adoption» and «donation» as synonyms, regardless of each their personal representation of human embryos. As one of embryo recipients wrote in a thread, «What changes is the origin of the frozen embryos. There are those who use available embryos and those who make them tailored» (Anonymous #3, forum B, 2018). The absence of a genetic connection between embryos and recipients is highlighted, which is common to both practices. The fora generated other relevant representations:

> Embryo donation is nothing more than a donation of two gametes. It is like the heterologous fertilization. However, it is an embryo donation, but it is also an embryo adoption because there is an embryo transferred into the uterus, so technically you adopt an embryo that is not genetically yours.

Embryo donation is compared to heterologous fertilization, emphasizing that it is, after all, the donation of two gametes. There is not a technical distinction between the term «embryo donation» and «embryo adoption» and the writer points out that, although this is technically referred to as donation, it can also be considered adoption because the embryo is transferred into the uterus of a woman who is not the genetic mother. Significantly, despite the use of the word «adoption», mostly on Spanish clinics' websites and fora, informants had a heterogeneous representation of what an embryo was. The ontological status of the embryo varied between being considered «human life» and being seen as «a bunch of cells», showing that the use of the word «adoption» instead of «donation» is not directly linked to how people understand embryos.

Salvific and moral action narratives

As mentioned, most interviewees opted for cryopreserved embryos from a Spanish clinic («embryo adoption»). This solution was chosen for a combi-

nation of reasons. The first relates to the high success rates of this practice described by fertility specialists on clinics' websites. Many interviewees expressed that these success rates renewed their hope of becoming parents after many failures. Cinzia and her wife met when they were in their late forties. They began fertility procedures as soon as they could: they each had two egg retrievals, which were unsuccessful. Their gynecologist shared success rates for their age, by which the couple felt extremely discouraged. Cinzia said,

> When the doctor told us that with embryo donation, we may have a 57% chance to achieve a pregnancy…it sounded like a miracle for us! We were used to hearing 5%, 2%...with an adoption of a blasto, we could have a 57% [chance]. Let's do it!

The second reason is related to cost (Hill & Freeman 2011: 942). Embryo adoption was «an affordable practice», one interlocutor said. Zanini's findings show that embryo donation was one of the most financially achievable options for some couples (2013).

All the interviewees involved in the research opted for embryo donation after several attempts at assisted reproduction in different states. None of them knew about embryo donation before starting their fertility journey. Embryo donation was not patients' first choice. Instead, in most cases, it was suggested by fertility specialists after many IVF failures. This is in line with previous data; many clinics suggest double donation as a «tailored fertility journey», highlighting that the potential children born through this donation may have not have any fully genetic siblings, as in the case of donated embryos. Specialists only discussed about embryo donation when specifically asked or when the patients' financial means became depleted (Gross & Mehl 2018).

Simona, a 43-year-old secretary, wanted to create a family with her wife Giulia, a 48-year-old housewife. When Giulia was 44, she was already experiencing some symptoms of early menopause. Simona started her fertility journey when she was 39. She underwent different procedures, from IUI to IVF. Simona told me that she was ready to give up as she felt emotionally, physically, but especially financially drained:

> After few months from the last IVF cycle, the gynecologist called me and said: «Look, I have embryos [for which] you would pay less. I am sorry to say that, but that's the way it is. Why don't you come and let's try that?». I didn't know it was possible to use already embryos stored at the clinic!

After the call, Simone searched the internet, trying to learn more about embryo donation. For many Italians who go through IVF, the internet is a precious tool to collect information. Simona easily found several fora dedicated to embryo donation and read stories shared by others, such as «I only discovered a couple of months ago that the embryo of adoption exists… and since that day I can't stop thinking about it!» (Anonymous #4, forum B, 2019).

Combining the data from interviews with the analyzed threads on the fora, embryo donation was described as a discovery and as a life-saving procedure, but also as the last option. My research showed that patients always start with their own genetic material, using different techniques and making several different attempts; only later, following failures, do they opt for this solution. Interviewees described it as the «last chance», the «last try» of their parenthood project because, as Giulia, Simona's wife, testified,

> There wasn't anything left to lose […] We hadn't any chance left. The gynecologist informed us about this procedure when we already stopped dreaming about having a child. As soon as we learned about it, we felt hope, and we wanted to give a shot to embryo adoption.

In a similar way, some narratives collected on the fora stressed the hope brought back by the discovery of embryo donation. Anonymous #5 wrote:

> Embryo adoption has been like an unexpected gift for us. We didn't know about it. But even if I knew it, I would not have chosen it as the first option because I wanted to use my egg first. And then, at least, my husband's sperm. Only after so many cycles, we unwrapped this gift and opted for adopting an embryo. (Forum C, 2019)

One interesting aspect found in many interviews was related to how embryos were described by specialists from different clinics as limited resources and patients as blessed people receiving these embryos. According to my interviewees, fertility specialists represented extra embryos as extremely hard to be find. Below is an ethnographic example:

> We've been lucky, they found the perfect embryo for us, compatible with us. The doctor told us that's not easy to find embryos ready to be matched with our characteristics.

According to my participants, specialists tend to match embryos with recipients based on shared similarities. As with egg and sperm donation,

embryo donation in Spain is anonymous. So, as the interviews revealed, patients do not know anything about these embryos, sometimes not even the age of the donors or the blood type. What it is mostly shared with them is the terrific effort made to find «compatible» donors. From the interviews, the concept of compatibility covers a wide range of possibilities, from phenotypic characteristics to blood type. In many interviews, the concept of luck emerged: finding «the right» embryo at the right time. As Fiorenza said,

> The doctor told us: «You are very lucky. This is a lucky coincidence, there are the right embryos for you, at the right time» and we felt that we were lucky.

Cryopreserved embryos are often represented as crystallized in time, waiting to receive the chance to develop in recipients' uteruses. Similarly, in a mirror-effect, recipients' parenthood was described as waiting to obtain the right embryo and thus definitively begin the journey. The embryos were on hold, as was recipients' parenthood.

> I am not adopting a leftover of someone else. It is a terrible thought. I am adopting a new life. It is a choice that we make, and it was coming from the bottom of our heart. It is a chance for us but also for this little one. I see it as an adoption, I am adopting a really tiny human. (Anonymous #2, forum A, 2017)

My findings also show some other interesting meanings connected to choosing embryo donation related to ethics, as described by many interviewees. One of these related to genetic choices described as an ethical choice. Anna highlighted that she opted for embryo donation instead of using a gamete donor. Anna and her husband Enzo tried to conceive for several years. They went to an IVF clinic and, as is common, began with tests on Anna's reproductive systems. Through an AMH analysis, they discovered that she had a good ovarian reserve. Having learned about Anna's fertility, the gynecologist required a semen sample for analysis from Enzo. The results showed azoospermia, or as the doctor told them, «no sperm count». Their clinician suggested an IVF cycle to retrieve some spermatozoa directly from his testicles using a needle. Unfortunately, these attempts failed, and the next solution proposed was using a sperm donor. Anna explained why they didn't want to use someone else's sperm, preferring an existing embryo instead:

> My husband had semen problems. They informed us that we needed a sperm donor. But I did not want that, I wanted a child from him and not from another man. So, I didn't want to use my eggs either. At that point we were

> focusing on double donation, and at that moment, they proposed [to] us [that we could] adopt two embryos. Or both genes or nothing.

For Anna and Enzo, it was much more important to be involved equally, from a genetic point of view. They didn't care how the embryos were created (if they were already cryopreserved somewhere or if they needed to create them). What they were looking for an equal level of genetic involvement. Anna stressed that was a matter of being fairly and equally involved.

I also found other choices seen through an ethical prism. Embryo donation has been presented by recipients as a more ethical accepted practice compared to other fertility options, such as sperm and egg donation. Katia in her forties, and Elisa in her fifties, decided to have kids together. Katia, when she was a teenager, had leukemia and the chemotherapy treatments had an impact on her fertility: she completely lost any ovarian reserve. Elisa was already experiencing some pre-menopause symptoms when they decided to see a fertility specialist. Neither of them had oocytes that could be used to create embryos, but both had perfectly healthy uteruses to carry a pregnancy, as their clinician told them. Their gynecologist told them that he was going to find an egg donor esthetically like both of them, but the couple immediately refused because it implied using a gamete donor. Elisa and Katia were more interested in embryo donation because, as they mentioned, cryopreserved embryos represent the outcome of a project of love and intention from another couple, and they felt more comfortable selecting one of these embryos rather than asking to a young egg donor to undergo egg retrieval.

> In most cases these embryos are leftover embryos. Embryos who are donated from an infertile couple. Using an egg donor was something that we didn't want. Knowing that those embryos were a fruit of a project, a fruit of love and mostly a gift…it was the best option for us, ethically speaking.

In some cases, using existing embryos has been described as a more ethically sustainable option than starting new treatments involving new gamete donors, for two reasons. The first concerns the use of existing embryos to avoid the ad hoc creation of new embryos. A rhetorical question asked by an interviewee was why create new embryos – genetically disconnected to us – if they already exist cryopreserved? An extra embryo carries a backstory, having been involved in another couple's journey towards parenthood and, as described by recipients, left behind by the donating

couple. The second aspect concerns egg donors' possible exploitation, which they may have heard about on in the media or on social platforms. In some interviews, such as the one above, mention was made of procedures related to egg donation. To avoid nurturing certain fertility chains, some recipients opted for embryo donation because there was no need to have a donor undergo unnecessary treatment.

While embryo donation has been described as an ethical choice for some, others have nevertheless pointed out the lack of ethics principles applied by some Spanish clinics. Interestingly, the unethicality of certain practices did not emerge from the interviews but was highlighted by anonymous users of analyzed fertility for, as we can read in the example reported below:

> In my opinion, Spain' policy is not ethical; they are charging us so much money for leftover embryos. It is too much compared to their value. They are rejected embryos from other couples. (Anonymous #1, forum A, 2018)

Using already cryopreserved embryos raised broader societal questions about the commodification of human life and the inequalities in access to reproductive technologies. As opposed to eggs and sperm that, in some states, have value according to specific traits (such as researched genetic qualities, phenotypic characteristics etc.)[3] embryos as «potential human life» cannot be transacted. In other words, within the reproductive market, compared to gametes, embryos don't have an intrinsic economic value that depends and/or varies on the qualities possessed. Around 2012, a company in California started producing and selling embryos, raising numerous concerns (Zarembo 2012; Klitzman & Sauer 2015). Some concerns arose about the commercialization of embryos, the intrinsic value related to desirable qualities of particular biovalues (Waldby 2008)[4] and the exacerbation of existing disparities in access to fertility treatments. Following heated debates, in 2021 the American Society for Reproductive Medicine

---

[3] The literature shows that donor egg agencies and fertility clinics pay more for eggs from women with perceived desirable traits, such as those with higher SAT scores, and a track record of successful past donations (Levine 2010). For example, in the US, Almeling (2007) notes that reproductive cells are predominantly utilized as vehicles for buying and selling ideals related to middle-class American femininity and masculinity, as well as concepts of motherhood and fatherhood.

[4] Waldby introduced the concept of «biovalue» to refer to the production of a surplus of biological vitality obtained through the biotechnical reconfiguration of living processes.

(ASRM) published *Guidance Regarding Gamete and Embryo Donation*. In this document, it is stated that

> The practice may charge potential recipients a professional fee for embryo thawing, [the] embryo transfer procedure, cycle coordination and documentation, and infectious disease screening and testing of both recipients and donors. However, the *selling of embryos per se is ethically unacceptable*. (1399) [italics added].

The text highlights two key issues concerning costs associated with this practice that recall what was argued by Pope Francis in 2022. The most crucial issue is the complete opposition to embryos' commercialization, followed by a growing inquiry into the suitability of fees that providers and agencies ought to apply for embryos. From the patients' point of view, the charges imposed by clinics are not always clear. In most cases, my interlocutors said «we bought two embryos» or «I paid for one blasto» having understood that what they paid also included a «price» for the «adopted» embryos. This explains statements like that of anonymous #1, who describes extra embryos as «too expensive».

Final remarks

This study examined the experiences of Italians who received donated embryos. My research showed that patients always start with their own genetic material, using different techniques and making several different attempts; only later, following failures, do they opt for this solution. Indeed, my interlocutors opted for embryo donation after multiple unsuccessful attempts at assisted reproduction across different countries. Initially, none of them were aware of this option, as it was only recommended to them by fertility specialists after several failed IVF cycles. They were informed that these embryos were donated by individuals who wanted to offer a gift to others. Since embryo donation is anonymous in Spain, making it unclear whether the donors were in fact motivated by life ethics (Roberts 2007). Some interlocutors received info on embryo grading, but without details about embryo donors' profiles, such as age or how embryos were created, if using the couple's own gametes, a single donor, or a combination of two donors. Clinics match embryos to recipients primarily based on phenotypic and blood group compatibility.

Several ethical issues are intertwined within embryo donation practices. Firstly, one of the primary ethical considerations revolves around embryos'

status. As shown, the ontological status of embryos is at the center of political, cultural, legal and ethical controversies around whether embryos have the moral standing of human beings from the moment of conception, deserving of the same rights and protections as born individuals. Here, embryo donation raises questions about the sanctity of human life and whether it is ethically permissible to donate or use embryos for reproductive purposes. The ambivalence of embryos' status is reflected in the language used. The terminological landscape surrounding embryos' disposal is not merely a matter of semantics but holds deep implications for ethical and societal perceptions at large. Spanish fertility clinics prominently use the term «adoption» to describe embryo donation, despite what has been suggested by ethics committees and reproductive medicine experts. But as shows, recipients often use adoption and donation as synonymous even if – from their point of view – they are referring to distinct practices. In this way, I have shown how an embryo is represented (whether «already life» or «a bunch of cells») does not directly impact recipients' choices on how they define donation or adoption. Using the term «embryo adoption» refers to already created embryos, but this does not mean that these prospective parents see embryos as individuals.

Embryo adoption has been described as an ethical choice not because they were saving souls – as has been found in the US (Cromer 2018; 2023) – but predominantly for two other reasons (intricately interconnected) that have been described as morally positive. The central issue is the absence of a genetic connection between embryos and recipients. Creating ad hoc embryos when there are already cryopreserved ones has been described as a waste of resources and possibilities; more importantly, it is seen as an unnecessary practice that would have required collecting eggs from other women. Although there was no specific information on embryos' donors, donated embryos were described as the result of a project of love and this aspect was highlighted as particularly relevant. The saving narrative was used not so much to describe the act of «rescuing» embryos (*Ibidem*) but was related to the restored hope in embryo recipients, feeling that perhaps they were more likely to become parents via this practice. Cryopreserved embryos were described as frozen in time, waiting for an opportunity to be transferred into a recipient's uterus. Expectation is a key concept used by recipients to describe their condition: just as embryos were waiting, their parenting project was, too, highlighting the relational dimension of embryos. The embryos' dona-

tion narratives discussed here erode the dominance of embryopoiesis, by showing how embryonic development is a not a simple unitary process that can develop in a standalone form, detached from everything. Rather, it is intricately dependent upon a web of elements such as failures, hopes, bodies and stories in order to develop, or not.

References

ACOG Committee on Ethics. ACOG Committee Opinion No. 347 2006. Using preimplantation embryos for research. *Obstetrics and Gynecol*ogy, 108, 5: 1305-1317.

Almeling, R. 2007. Selling Genes, Selling Gender: Egg Agencies, Sperm Banks, and the Medical Market in Genetic Material. *American Sociological Review*, 72, 3: 319-340.

American Society for Reproductive Medicine 2021. Guidance regarding gamete and embryo donation. *American Society for Reproductive Medicine*, 15, 6: 1341-1410.

Aznar-Lucea, J., Martinez-Peris, M. & Navarro-Illana, P. 2016. Frozen embryo adoption. *Therapeia*, 8: 103-120.

Banchoff, T. 2011. *Embryo Politics: Ethics and Policy in Atlantic Democracies*. Ithaca: Cornell University Press.

Benagiano, G. & Gianaroli, L. 2010. The Italian Constitutional Court modifies Italian legislation on assisted reproduction technology. *Reproductive biomedicine online*, 20: 398-402.

Bharadwaj, A. 2005. Cultures of embryonic stem cell research in India, in *Crossing Borders: Cultural, Religious and Political Differences Concerning Stem Cell Research*, edited by W. Bender, C. Hauskeller & A. Manzei, 325-341. Munster: Agenda Verlag.

Blyth, E., Lui, S. & Frith, L. 2019. Relationships and boundaries between provider and recipient families following embryo adoption. *Families, Relationships and Societies*, 8, 2: 267-283.

Busatta, L. & Penasa, S. 2021. Biotechnologies, Birth and the Right to Know One's Genetic Origins. *BioLaw*, 21: 187-208.

Calhaz-Jorge, C., De Geyter, Ch., Kupka, M.S., Wyns, C., Mocanu, E., Motrenko, T., Scaravelli, G., Smeenk, J., Vidakovic, S. & Goossens, V. 2020. Survey on ART and IUI: legislation, regulation, funding and registries in European countries. *Human Reproduction Open*, 1: 2-15.

Collard, C. & Kashmeri, S. 2009. De embriones congelados a siempre familias: Etica del parentesco y etica de la vida en la circulaciòn de embriones entre las parejas donantes y las adoptantes en el programa Snowflakes®. *Revista de Antropologìa Social*, 18: 43-66.

Collard, C. & Kashmeri, S. 2011. Embryo Adoption: Emergent Forms of Siblingship Among Snowflakes® Families. *American Ethnologist*, 38, 2: 307-322.

Cromer, R. 2018. Saving embryos in stem cell science and embryo adoption. *New Genetics and Society*, 37, 4: 362-386.

Cromer, R. 2019. Making the Ethnic Embryo: Enacting Race in US Embryo Adoption. *Medical Anthropology*, 38, 7: 603-619.

Cromer, R. 2023. *Conceiving Christian America: Embryo Adoption and Reproductive Politics*. New York: NYU.

Cutas, D. & Smajdor, A. 2017. The moral status of the (nuclear) family. *Etikk I Praksis - Nordic Journal of Applied Ethics*, 11, 1: 5-15.

Decataldo, A. & Russo, C. 2022. *Metodologia e tecniche partecipative. La ricerca sociologica nel tempo della complessità*. Milano-Torino: Pearson Italia.

de Lacey, S. 2005. Parent identity and "virtual" children: why patients discard rather than donate unused embryos. *Human Reproduction*, 20, 6: 1661-1669.

de Lacey, S. 2007. Decisions for the fate of frozen embryos: fresh insights into patients' thinking and their rationales for donating or discarding embryos. *Human Reproduction*, 22: 1751-1758.

de Lacey, S., Peterson, K. & McMillan, J. 2015. Child interests in assisted reproductive technology: how is the welfare principle applied in practice? *Human Reproduction*, 30: 616-624.

Duden, B. 1994 (1991). *Il corpo della donna come luogo pubblico. Sull'abuso del concetto di vita*. Torino: Bollati Boringhieri.

Duden, B. 2006 (2002). *I geni in testa e il feto nel grembo*. Torino: Bollati Boringhieri.

Ethics Committee of the American Society for Reproductive Medicine 2019. Interests, obligations, and rights in gamete and embryo donation: an Ethics Committee opinion. *Fertility and Sterility*, 111: 664-670.

Ferrero, L. & Pulice, E. 2021. *Pluralismo etico e conflitti di coscienza nell'attività ospedaliera*. Bologna: Il Mulino.

Franklin, S. 2006. Embryonic economies: the double reproductive value of stem cells. *Biosocieties*, 1, 1: 71-90.

Frith, L., Blyth, E., Paul, M. & Berger, R. 2011. Conditional embryo relinquishment: choosing to relinquish embryos for family-building through a Christian embryo 'adoption' programme. *Human Reproduction*, 26: 3327-3338.

Georges, E. 1997. Fetal Ultrasound Imaging and the Production of Authoritative Knowledge in Greece, in *Childbirth Across Cultures: The Social Production of Authoritative Knowledge*, edited by R. Davis-Floyd & C. Sargent Berkeley, 91-112. Los Angeles & London: University of California Press.

Giraud, A.S. 2014. L'embryon humain en AMP: éléments pour une approche relationnelle. *Enfances, familles, générations*, 21: 48-69.

Giraud, A.S. 2015. Les statuts de l'être anténatal : un processus d'humanisation «relationnel». The status of the unborn: a «relational» humanisation process: Assisted reproductive technologies and stillbirth, Assistance médicale à la procréation et mort périnatale. École des Hautes Études en Sciences Sociales (EHESS).

Giraud, A.S. 2020. Avoir le choix (?). Les statuts de l'embryon in vitro et du fœtus mort en France. *Ethnologie française*, 50: 403-417.

Goedeke, S. & Payne, D. 2009. Embryo donation in New Zealand: a pilot study. *Human Reproduction*, 24, 8: 1939-1945.

Goedeke, S., Daniels, K., Thorpe, M. & Du Preez, E. 2017. The Fate of Unused Embryos: Discourses, Action Possibilities, and Subject Positions. *Qualitative Health Research*, 27, 10: 1-12.

Golombok, S., Cook, R., Bish, A. & Murray, C. 1995. Families created by the new reproductive technologies: quality of parenting and social and emotional development of the children. *Child Development*, 66, 2: 285-298.

Golombok, S, Murray, C., Jadva, V., Lycett, E., MacCallum, F. & Rust, J. 2006. Non-genetic and non-gestational parenthood: consequences for parent-child relationships and the psychological well-being of mothers, fathers and children at age 3. *Human Reproduction*, 21, 7: 1918-1924.

Gross, M. & Mehl, D. 2018. Infertilité: double don de gamètes ou don d'embryon? *Dialogues*, 4: 93-106.

Guerzoni, C. 2020. *Sistemi procreativi. Etnografia dell'omogenitorialità in Italia*. Milano: FrancoAngeli.

Haimes, E. & Taylor, K. 2009. Fresh embryo donation for human embryonic stem cell (hESC) research: the experiences and values of IVF couples asked to be embryo donors. *Human Reproduction*, 24, 9: 2142-2150.

Hanafin, P. 2007. *Conceiving Life. Reproductive Politics and the Law in Contemporary Italy*. London: Routledge.

Hill, G.A. & Freeman M.R. 2011. Embryo disposition: choices made by patients and donor oocyte recipients. *Fertility and Sterility*, 95, 3: 940-943.

Howell, S. 2006. *The Kinning of Foreigners: Transnational Adoption in a Global Perspective*. New York: Berghahn Books.

Huele, E.H., Kool, E.M., Bos, A.M.E., Fauser, B.C.J.M. & Bredenoord, A.L. 2020. The ethics of embryo donation: what are the moral similarities and differences of surplus embryo donation and double gamete donation? *Human Reproduction*, 35, 10: 2171-2178.

Ihnorn, M. 2003. *Local Babies, Global Science: Gender, Religion and In Vitro Fertilization in Egypt.* London: Routledge.

Il Sole 24 ore 2022. *Papa: embrioni non siano usati come materiale usa e getta*. <https://stream24.ilsole24ore.com/video/italia/papa-embrioni-umani-non-siano-usati-come-materiale-usa-e-getta/AENBGnIB?refresh_ce=, [10/05/2024].

Klitzman, R. & Sauer, M.V. 2015. Creating and selling embryos for "donation": ethical challenges. *American journal of obstetrics and gynecology*, 212, 2: 167-170.

Levine, A.D. 2010. Self-regulation, compensation, and the ethical recruitment of oocyte donors. *Hastings Center Report*, 40, 2: 25-36.

Lyerly, A., Steinhauser, K., Voils, C., Namey, E., Alexander, C., Bankowski, B., Cook-Deegan, R., Dodson, W.C., Gates, E., Jungheim, E.S., McGovern, P.G.,

Myers, E.R., Osborn, B., Schlaff, W., Sugarman, J., Tulsky, J.A., Walmer, D., Faden, R. & Wallach, E. (2010). Fertility patients' views about frozen embryo disposition: results of a multi-institutional U.S. survey. *Fertility and Sterility*, 93: 499-509.

MacCallum, F. 2009. Embryo Donation Parents' Attitudes towards Donors: Comparison with Adoption. *Human reproduction,* 24, 3: 517-523.

Mathieu, S. 2017. Donner et recevoir des embryons en France. *Ethnologie française*, 47, 3: 499-508.

Mattalucci, C. 2013. Between the law and bioethics: placing the unborn in contemporary Italy. *Academic journal of interdisciplinary studies*, 2, 3: 283-290.

Mattalucci, C. 2015. Fabbricare l'umano prima della nascita, in *Soggetto, persona e fabbricazione dell'identità. Casi antropologici e concetti filosofici*, edited by S. Barberani, S. Borutti, C. Calame, M. Kilani, C. Mattalucci & L. Vanzago, 47-74. Milano-Udine: Mimesis Edizioni.

Nachtigall, R.D., Becker, G., Friese, C., Butler, A. & MacDougall, K. 2005. Parents' conceptualization of their frozen embryos complicates the disposition decision. *Fertility and Sterility*, 84, 2: 431-434.

National Institutes of Health. Report of the Human Embryo Research Panel: final draft, September 27, 1994. Bethesda, Maryland: National Institutes of Health;1994.

O'Brien, M. 2010. Intersection of ethics and law: The frozen embryo dilemma and the chilling choice between life and death. *Whittier Law Review*, 32: 171-196.

Pennings, G. 2022. Balancing embryo donation and double gamete donation. *Human Reproduction*, 37, 3: 389-392.

Roberts, E.F.S. 2007. Extra Embryos: The Ethics of Cryopreservation in Ecuador and Elsewhere. *American Ethnologist*, 34, 1: 181-199.

Salama, M., Isachenko, V., Isachenko, E., Rahimi, G., Mallmann, P., Westphal, L.M., Inhorn, M.C. & Patrizio, P. 2018. Cross Border Reproductive Care (CBRC): A Growing Global Phenomenon with Multidimensional Implications (A Systematic and Critical Review). *Journal of Assisted Reproduction and Genetics*, 35, 7: 1277-1288.

Smietana, M. 2019. Procreative consciousness in a global market: gay men's paths to surrogacy in the USA. *Reprod Biomed Soc Online*, 7: 101-111.

Sociedad Espanola de Fertilidad. Registro national de actividad 2018—Registro SEF. Informe estadistico de tecnicas de reproduccion asistida 2018. https://cnrha.sanidad.gob.es/registros/pdf/ Informe_estadistico_SEF_2018_Version_Final.pdf

Söderström-Anttila, V., Foudila, T, Ripatti U.R. & Siegberg, R. 2001. Embryo donation: outcome and attitudes among embryo donors and recipients. *Human Reproduction*, 16, 6: 1120-1128.

Strathern, M. 1992. Reproducing the Future: *Anthropology, Kinship, and the New Reproductive Technologies*. New York: Routledge.

Thompson, C. 2005. *Making Parents: The Ontological Choreography of Reproductive Technologies*. Cambridge: MIT Press.

Trounsen, A., Leeton, J., Besanka, M., Wood, C. & Conti, A. 1983. Pregnancy established in an infertile patient after transfer of a donated embryo fertilised in vitro. *The British Medical Journal*, 286: 835-838.

Vertommen, S., Pavone, V. & Nahman, M. 2022. Global Fertility Chains: An Integrative Political Economy Approach to Understanding the Reproductive Bioeconomy. *Science, Technology, & Human Values*, 47, 1: 112-145.

Waldby, C. 2008, Oocyte markets: women's reproductive work in stem cell research. *New Genetics and Society*, 27, 1: 19-31.

Zanini, G. 2013. Neither gametes nor children: Italian prospective parents and the variable meaning of donor embryos. *Tecnoscienza – Italian Journal of Science & Technology Studies*, 4: 87-109.

Zarembo, A. 2012. An ethics debate over embryos on the cheap. *New York Times*, https://www.latimes.com/health/la-xpm-2012-nov-19-la-me-embryo-20121120-story.html, [12/05/2024].