Fall 12-16-2020

Gender, Eugenics, and Stratified Reproduction in the Gamete Donation Marketplace

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GENDER, EUGENICS, AND STRATIFIED REPRODUCTION IN THE GAMETE DONATION MARKET PLACE

by

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ABSTRACT

Egg and sperm donation are increasingly popular methods of artificial reproductive technology (ART), but they are also a commercialized industry that perpetuates and bolsters sexist and classist attitudes. They do this through creating a new form of eugenics where consumers choose their donors based off hegemonic ideals of attractiveness and worth. In this study, I conducted a content analysis of sperm and fresh or frozen egg donation websites to examine how agencies perpetuate sexism in their posted screening requirements for donors. Results support the claim that agencies screen in sexist ways. I also examined how these agencies navigate eugenic ideas in their communication to donors and consumers. Research on this topic is important in order to understand how current artificial reproductive technology (ART) industries bolster sexist ideals and serve as a warning for how people might use gene-editing technology.

INDEX WORDS: Egg donation, Sperm donation, Sexism, Eugenics, Screening, Content analysis

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A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Masters of Arts

in the College of Arts and Sciences

Georgia State University

2020

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December 2020

DEDICATION

I want to thank the many people in my life who have supported and encouraged my academic achievement. From a young age my parents, stepparents, and grandparents have encouraged my love of reading and supported my university ambitions. Thank you to Mary Ann Rodenhausen, Eric Rodenhausen, Joseph Milne, Hannah Milne, Susan Tomlinson, Michael Tomlinson, and the rest of my large family. Without them, I would not be where I am today.

I also want to thank my friends and colleagues who have provided a different kind of support through long discussions of artificial reproductive technology and practical suggestions for making it through graduate school. Thank you to Athanasia Platis, Joy Appel, and Gwyer Sinclair. I am grateful to have such a large and loving social network and support system.

ACKNOWLEDGEMENTS

The document before you would not have been possible without the help of my advisor, committee members, and mentors. Wendy Simonds helped greatly from the beginning to the end of the process through talking through the thesis process, discussing minor details of the research, and providing motivation. Erin Ruel and Elisabeth Burgess gave detailed feedback and helped shape my work to be more cohesive and rigorous. Finally, I want to thank the professors and lecturers who mentored me during my undergraduate degree: Christina Steidl, Nicole Pachino, Richard Simon, Sandra Carpenter, and Susan Friedman.

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LIST OF ABBREVIATIONS

AIDS	Acquired immunodeficiency syndrome
ART	Artificial Reproductive Technology
ASD	Autism Spectrum Disorder
ASRM	American Society for Reproductive Medicine
BMI	Body Mass Index
CRISPR	Clustered Regularly Interspaced Short Palindromic Repeat
DCC	Donor Conceived Children
FAQ	Frequently Asked Questions
FDA	Food and Drug Administration
HIV	Human Immunodeficiency Virus
IRC	Infertility Resource Center
IVF	In Vitro Fertilization
MMPI	Minnesota Multiphasic Personality Inventory
NAACP	National Association for the Advancement of Colored People
RQ	Research Question
STI	Sexually Transmitted Infection

1 INTRODUCTION

Since 1996, people in the United States have used donor sperm or eggs close to two million times in order to conceive a child (Gerkowicz et al. 2018). People are increasingly turning to donor gametes, sex cells, as rates of infertility and acceptance of non-traditional families grow (Sunderam et al. 2018; Almeling 2011). Through the use of costly intermediaries, thousands of intended parents pay for the "donation" of eggs and sperm in an exchange that critics see as exploitative (Leve 2013) and supporters see as a rational trade (Shapiro 2018).

Despite ongoing ethical debates and the fast pace at which the industry is growing, there exists little regulation over the sale of gametes in the U.S. (Spar 2006; Krawiec 2016; Heidt-Forsythe 2018). Two other major ethical concerns are the disparate treatment of sperm donors compared to egg donors and eugenic concerns over the ways agencies and their consumers select donors. In this study, I will explore the extent and nature of these concerns by collecting the screening requirements of and information directed to donors on the websites of fresh egg donation agencies, frozen egg banks, and sperm banks.

Almeling's (2011) influential study highlighted the ways donors are treated differently according to their gender. Egg donation agencies require their donors to undergo psychological screening in order to ensure they are altruistically motivated to donate and that they will not be attached to any offspring they help conceive. In contrast, sperm banks do not require psychological screening and explicitly expect their donors to be motivated financially. This disparity in screening prevails even though both sperm and egg donors are primarily motivated by financial reasons and have similarly low levels of interest in the children that result (Almeling 2011; Spar 2006; Nelson & Hertz 2017).

Almeling's (2011) findings are from over a decade ago, and in that short time the industry has changed. There is now increased recruitment online, higher payments, increased use of frozen ova, and intensified competition between agencies to provide the "best" donors (Alberta, Berry, & Levine 2013; Kamakahi v. American Society 2015;Argyle, Harper, & Davies 2016; Klitzman 2016; Mroz 2017). My first research question is: According to agency's websites, how do agencies screen egg and sperm donors and how do these differences reinforce gender stereotypes?

Egg and sperm donor applications screen potential donors in eugenic ways by screening out people with "undesirable" traits. This process goes beyond finding healthy donors or ones who resemble the intended parents as many agencies claim (Daniels & Heidt-Forsythe 2012; Mroz 2017). The consumers of gamete donation choose donors they expect to enhance their child's genetics through selecting donors they consider to be intelligent, physically attractive, talented, and religious (Heng 2007; Moore 2007; Daniels & Heidt-Forsythe 2012; Mroz 2017). In some cases, agencies and clinics pay donors more for these traits (Heng 2007; Holster 2008). While many researchers have kept track of what traits donor profiles display, fewer have focused on how sperm and egg banks communicate messages about what are desirable traits and which they use in screening. There is also evidence through surveys and anecdotal reports that a minority of donors are explicitly motived to spread their "superior" genes (Plotz 2005; Almeling 2011; Gezinkski et al. 2016a; Nelson & Hertz 2017; Mroz 2017).

Daniels & Heidt-Forsythe (2012:720) have suggested that the differences in screening for egg and sperm donors intersects with eugenic ideals leading to a "gendered eugenics" where agencies screen donors differently based off gendered ideals of attractiveness such as by placing greater importance on men's height and women's body size. Historically, supporters of eugenics

have applied their ideologies in sexist ways such as by discouraging intelligence in women and encouraging it in men (Levine 2017). Few researchers have examined how sexism and gender stereotypes apply to new eugenic movements and technologies. One survey on the topic found support for gendered eugenics in donor attitudes. Men are more likely to believe agencies selected them because of their intelligence, and women are more likely to believe it was because of their character (Nelson & Hertz 2017). This leads to my second and third research question: how do agencies navigate eugenic connotations when recruiting donors? How do agencies navigate eugenic connotations when recruiting recipients?

Addressing these research questions will add to knowledge on the interactions between gender and sex, and the ways gamete donation industries communicate eugenic ideas in the modern world. Gender and sex are commonly understood to refer to separate concepts with gender as the social aspects and sex as the biological ones. However, theorists such as West and Zimmerman (1987) as well as Fausto-Sterling (2000) have challenged this idea by noting how social ideas of gender influence how people categorize biological sex. Even though sperm and eggs equally contribute to reproduction, people perceive them differently due to biased perceptions of the bodies that produce them (Martin 1991; Moore 2007). This difference in perception causes agencies to treat donors differently and leads to misinformed ideas that sperm and eggs provide different types of genetic material (Almeling 2011; Nelson & Hertz 2017). Comparing the screening requirements is one way to see which characteristics the purveyors of gametes and presumably their consumers consider more important for each sex (Holster 2008; Gezinski et al. 2016b).

Studying how the gamete industry communicates ideas of superiority or obligation to pass on good genes also adds to the literature on stratified reproduction, new eugenics, and

human enhancement. Stratified reproduction is a theory concerning how society encourages certain groups of people to reproduce while discourages and shaming others for doing so (Colen 1985). Reproductive technologies have participated in stratified reproduction both by encouraging certain participants to use their services and by selecting donors based on current societal norms. In the US, consumers of gamete donation are largely confined to wealthy, white couples who can afford the costly procedures (Bell 2014). Intended parents and gamete bank staff choose donors based off socio-economic indicators such as high educational achievement from Ivy League schools (Heng 2007). Agencies are unlikely to select healthy donors from working-class backgrounds (Daniels & Heidt-Forsythe 2012).

New eugenics refers to modern philosophies and movements that promote the "improvement" of the human race by encouraging or removing certain traits in the population. The supporters of these new eugenic philosophies have termed their beliefs in various ways such as liberal eugenics, human enhancement, or procreative beneficence. These various terms serve to distance the proponent's views from the traditional eugenic practices of forced sterilizations and Nazism by framing the matter as an individual choice and a neo-liberal right rather than a forced decision by the state (Lavazza 2019; Levine 2017; Savulescu & Kahane 2009). Debates over new eugenic movements have largely been philosophical and focused on how much control individuals should have over future technology that enables genetic modification. These debates are becoming more relevant as researchers improve gene-editing technology such as CRISPR (Lavazza 2019). The reality of sperm and egg donation can inform these debates by showing how the public would use gene-editing technology if left to market influences without regulations. The traits parents choose would be based on classed, raced, and gendered ideas of what is desirable.

2 LITERATURE REVIEW

2.1 Brief Overview of Gamete Donation Industries

Sperm and egg donation are the colloquial terms for what is more accurately called semen donation and oocyte or ovum donation. I will use these terms interchangeably. Both are types of artificial reproductive technology (ART), which includes a variety of other procedures such as in-vitro fertilization (IVF) and surrogacy. These technologies allow reproduction among individuals and couples with fertility issues or those who do not have a fertile, opposite-sex partner. Surrogacy and gamete donation are types of third-party reproduction, meaning they involve the reproductive material of a person who does not intended to parent the children that result. In gamete donation, a donor gives or sells their reproductive tissue to another person and are thus always genetically related to the child. In surrogacy, the surrogate "rents out" her womb to an individual or couple by becoming pregnant with a child she does not plan to raise. Surrogates may or may not be genetically related to the child, depending on if it is a traditional or gestational surrogacy. The former is when a surrogate uses her own eggs and the later involves egg donation from the mother who intends to raise the child. The people who seek the services of third-party ART commonly refer to their selves as "intended parents" because this term distances the financial motives behind the exchange more than other terms such as "contracting parent" or "ART consumer" (Mroz 2017). Many people have heavily critiqued third-party ARTs, especially when payment is involved (Spar 2006).

Sperm and egg are analogous sex cells, which mean they play equivalent roles in reproduction despite their structural differences in size, shape, and number. Sperm and egg donation play the same role in creating a child, but the structural differences between the cells mean that the procedures are different. Sperm donation is the simpler procedure, and the one

discovered first by the medical industry. It involves the transmission of one person's semen to another's cervix, typically without sexual intercourse, which is possible through the use of a syringe or turkey baster-type device. To obtain the semen, the donor must masturbate into a container. Egg donation is a much more invasive procedure since eggs are located inside the ovaries and are not released outside of the body naturally or frequently. The procedure involves extracting the eggs from one body, fertilizing them outside of the body to create an embryo, and then inserting the embryo into another body. This process is the same as in IVF, with the difference being that in IVF the embryo is reinserted into the same body that produced the egg. Both egg donation and IVF require daily, hormonal injections (Almeling 2011).

The differences in the procedures of egg and sperm donation have undoubtedly influenced how the public and the law have treated them throughout history and today. Egg donation involves more short-term and possibly long-term risks than sperm donation which is physically risk-free (Carter et al. 2012). Because of this, egg donation has been subject to more regulation and sensitivity toward potential exploitation of the donors (Spar 2006; Heidt-Forsythe 2018). However, this greater concern is not solely due to the differences in the procedure. Gender bias plays a role as well. The medical establishment, public policy, and the general public treat women more paternalistically than men and scrutinize their reproductive choices more (Russo 1976; Faircloth & Gürtin 2018; Heidt-Forsythe 2018). While it is impossible to know exactly how much of the disparate treatment enacted by fertility clinics and agencies is caused by the procedures or gender bias, it is possible to gain a general understanding of the influences of each by placing the industries in their socio-historical contexts and investigating the justifications people give for these practices.

2.2 The History of Gamete Donation

The first incidences of sperm and egg donation occurred almost a hundred years apart. Despite the different periods each arrived in, both encountered similar controversies over concerns that science had gone too far. The first reported semen donation occurred in 1884 when Dr. William Pancoast was treating a couple suffering from infertility (Gregoire & Mayer 1965). Upon realizing that the man produced no sperm in his semen, Dr. Pancoast recruited the "best-looking" of his medical students to produce a sample and then inserted it into the unconscious wife who had not given permission for the procedure (Gregoire & Mayer 1965).

Everyone involved kept the incident secret until one of the medical students published an account of the story in 1909 (Gregoire & Mayer 1965). Reactions to the account were severe with some discrediting the story as a hoax and others deriding the implications of this new "unnatural," technology (Plotz 2005). Even though knowledge of sperm donation existed and spread through the student's account, few clinics attempted it, and few couples sought it out. Many religions, especially the Catholic Church, derided the practice and the law considered it to be adultery in much of the US (Sallam & Sallam 2016; Massey Jr. 1963).

Changes in attitudes toward sexuality and infertility led to greater use of semen donation. The general public was able to see sexuality and reproduction as separate with the invention of dependable birth control, which was necessary to rid sperm donation from its connotations with adultery. Traditionally, Western society has seen infertility as an unfortunate fate where a couple must accept childlessness or adoption (Bell 2004). As treatments of infertility have become possible, more people see infertility as a fixable medical illness. This shift in the perception of infertility led to individuals gaining more choices in creating families while also creating a new, often exploitative industry where individuals pay for expensive treatments with high failure rates

(Bell 2004; Spar 2006; Leve 2013). Regardless – once infertility became medicalized – sperm donation came to be seen as a medical treatment rather than a moral or religious issue. Courts established legitimacy for the non-biological parent, and many religions softened their stance on the procedure (Appleton 2015; Sallam & Sallam 2016).

Egg donation became possible in 1978 and first occurred in 1983; well after the invention of reliable birth control, the medicalization of infertility, and the greater acceptance of sperm donation (Ombelet & Robays 2015). Despite greater public and religious acceptance of ART, egg donation was still subject to similar controversies as sperm donation along with unique controversies. Oocyte donation was not possible until IVF could be performed successfully, which first occurred in 1978 when Louise Joy Brown was born in the UK (Ombelet & Robays 2015). There were two major controversies over this birth. The first concerns were religious criticisms from the pro-life movement because doctors create and destroy embryos during IVF (Sallam & Sallam 2016). The second concern was that IVF had a very low success rate, meaning that women had to go through multiple painful procedures before possibly conceiving a child. The media and clinics rarely mentioned this fact, and critics of these new technologies accused clinics of taking advantage of desperate couples because of this (Hammer 1984; Spar 2006).

The first, successful egg donation occurred a few years after the first successful IVF procedure in 1983 in Australia (Ombelet & Robays 2015). This birth was subject to similar controversies as IVF over the destruction of embryos and low success rates. Unlike with sperm donation, the Catholic Church was one of the only public institutions which considered egg donation to be adultery (Sallam & Sallam 2016). Overall, the general public, religions, and law considered egg donation less controversial than sperm donation. This can be explained by the

more accepting attitudes toward ART by this time, and the fact that paternity is considered more important for fatherhood than motherhood.

Traditionally, people considered men to be fathers based on based their relationships to mothers. Legally and culturally, illegitimate children were “fatherless” (Rothman 1989). Once accurate paternity tests existed, genetic links became central to determining fatherhood, which had the benefit of requiring men to help with the children they created but at the cost of emphasizing genetics over nurturance (Moore 2007; Rothman 1989). Because of the importance of paternity, men see sperm donation as threatening to fatherhood while women rarely see egg donation as threatening to motherhood (Moore 2007; Almeling 2011; Wyverkens et al. 2017). Nurturance is the defining trait of motherhood and because of that, women see surrogacy as much more threatening than egg donation even if the surrogate is pregnant with the genetic mother’s ovum (Rothman 1989; Spar 2006).

A major change in the history of the gamete industries is the shift of control from medical clinics to private industry. Initially, physicians conducted the procedures and controlled who could receive them. Private banks and agencies have now completely taken over the sperm donation market and largely taken over the egg donation market. The shift between medical clinics to private agencies differed for egg and sperm donation, but the results of a commercialized market are largely the same.

Commercial sperm banks came onto the scene after the discovery that allowed successful freezing of semen (Ombelet & Robays 2016). The benefit of frozen semen is that it can be stored. Fresh semen must be transferred to the cervix almost immediately, meaning that the donor had to be nearby when the intended parent was ovulating. The disadvantages of frozen semen are that it is less successful for conception and is expensive to freeze and store. Because

of the disadvantages, frozen semen did not take off initially (Almeling 2011). The advent of AIDS changed the industry. At least seven women contracted HIV through sperm donation and news of this led to the FDA requiring semen to be frozen and stored for six months at which time the donor would be tested for HIV (Araneta et al. 1995). Most clinics could not afford the technology needed to freeze semen so they quickly became replaced by for-profit banks that could (Almeling 2011).

The shift from clinic to for-profit egg donation agencies happened much more slowly than – and not as completely as – the shift to for-profit sperm donation. Until the past few years, consumers highly preferred fresh eggs over frozen eggs (Heidt-Forsythe 2018). Recently, cryopreservation technology improved to the point that frozen eggs are only slightly less successful for conception than fresh eggs (Argyle, Harper, & Davies 2016). Frozen egg banks have begun to rise due to the improved technology, but they have not overtaken the industry. Clinics have also remained popular for egg donation because the procedure cannot be done at home and still requires a doctor, meaning that all procedures go through a doctor regardless of whether a clinic or agency recruited the donor. However, the latter have increasingly taken up more of the industry due to their more successful efforts at recruitment and consumer preference for the greater choices agencies give (Almeling 2011; Klitzman 2016)

The largest changes brought about from the shift from clinics to for-profit agencies were the greater choice they gave in who could undergo ART and allowing individuals to choose their donors. Clinics commonly restricted access to married, heterosexual couples (Hornstein 1984; Plotz 2005; Ertman 2010; Almeling 2011). They justified this control by emphasizing their oaths to do-no-harm with the assumption that non-traditional families are harmful (Plotz 2005; Almeling 2011). In contrast, commercial agencies and banks were much more likely to let

anyone who could pay obtain their services because this generated more profit – a move celebrated by single women and same-sex couples (Ertman 2010; Almeling 2011).

Clinics were also unlikely to give the intended parents any control over who their donor was unless the intended parents brought in a relative or friend as the donor. Physicians chose sperm donors from their medical students who were easily accessible (Almeling 2011). Physicians chose egg donors by using the excess ova from another woman's IVF or oophorectomy – removal of the ovaries—and sometimes they took excess ova without permission (Hammer 1984; Heidt-Forsythe 2018). Even when clinics began to recruit donors, doctors continued to control the sperm donors parents used by making the decision based on the race, family background, and religion of the donor and intended parents (Alemling 2011). In contrast, banks and agencies would offer customers catalogs that listed all their donors and information on them (Plotz 2005; Almeling 2011). This information started out as a page of details about the donor's looks, health, and a paragraph on what they enjoy doing. Intended parents appreciated the chance to choose their donor and to learn more about them (Plotz 2005; Mroz 2017).

2.3 The Current Gamete Market

Banks and agencies soon realized that offering more than one page of information and offering more than other agencies was highly profitable. Thus began a race between the ART organizations to offer the most information on their donors and to have the "best" selection such as Ivy League graduates, models, and actors (Almeling 2011; Mroz 2017). One page became multiple page packets that included the donor's physical traits, nationality, religion, artistic talents, personality, hobbies, and various other traits (Daniels & Heidt-Forsythe 2012). One organization even reported if donors liked to kiss with their eyes open (Braverman 2010). Many

banks and agencies now offer certain information such as family medical history, voice recordings, and baby pictures – for extra fees (Mroz 2017). Critics of this move toward providing such extensive information have accused the practice of objectifying donors, misleading parents on what is inheritable, and engaging in eugenics (Plotz 2005; Almeling 2011; Daniels & Heidt-Forsythe 2012; Mroz 2017; Lavassa 2019). Some staff members deride these changes but claim they would be unable to compete in the industry without offering as much information as possible and recruiting the donors consumers want (Almeling 2011).

In the majority of countries, gamete donation and other forms of ART have become more regulated by establishing laws on parental rights, anonymity of donors, payment restrictions, or banning certain procedures (Heidt-Forsythe 2018; Carbone & Gottheim 2010; Sallam & Sallam 2016). The US is unique in establishing almost no regulation. Only two federal laws exist concerning gamete donation. One is the requirement to freeze sperm and test their donors. The other is that all fertility clinics and agencies must report their success rates and live births. The latter policy is not enforced and most agencies never contact patients after they conceive (Spar 2006; Nelson & Hertz 2017).

The only other regulations that exist in the US are a handful of state regulations and informal recommendations by the American Society of Reproductive Medicine (ASRM) (Heidt-Forsythe 2018). ASRM is a medical and ethical organization concerned with ART and they periodically release best-practice guidelines. However, most clinics, banks, and agencies do not follow their guidelines even if they are ASRM approved (Alberta et al. 2013; Keehn et al. 2012). Practices against these guidelines include recruiting egg donors who are younger than 21 (Alberta et al. 2013; Keehn et al. 2012), paying differential prices based on donor's traits (Holster 2008; Keehn et al. 2012), not mentioning potential physical or psychological side-

effects of donating (Carter et al. 2012; Keehn et al. 2012; Gezinski et al. 2016), and poor record-keeping (Plotz 2005; Mroz 2017).

Two of the most hotly debated ethical issues are whether intended parents should pay donors or if donors should be anonymous. Opponents of payment argue that it leads to exploitative conditions that render consent irrelevant, while proponents have argued that the practice is liberatory or merely like any other job (Leve 2013). Many countries have banned payment, especially for egg donation, and instead rely on altruistic donors who are commonly known to the intended parents (Sallam & Sallam 2016; Wyverkens et al. 2017; Heidt-Forsythe 2018).

The debate over donor anonymity is relatively new. For most of the 20th century, there was wide agreement in the medical industry that parents should not tell their children whether they were donor conceived (Plotz 2005; Mroz 2017). This advice changed as donor-conceived children (DCC) grew up and found out they had a donor either through being told or taking a DNA-test. DCC have fought for the right to know the identity of their donor in a manner that is similar to the fight of adopted children to know who their birth parents are (Carbone & Gottheim 2010). They have based their arguments on the right to know their medical and genetic history (Mroz 2017). DCC movements have led to the ban of anonymity in many countries, including the United Kingdom, Canada, Australia, and the Netherlands (Wyverkens et al. 2017; Heidt-Forsythe 2018). Others have pointed out that with the popularization of DNA testing kits, anonymity is no longer guaranteed and agencies should warn donors of this (ASRM 2013; Harper, Kennett & Reiset 2016).

These findings and ethical concerns have led to multiple calls for more regulation in the U.S. (Saxton 1984; Spar 2006; Benward, Braverman & Galen 2009; Almeling 2011; Carter et al.

2012; Keehn et al. 2012; Klitzman 2016). However, these calls have not succeeded. Few politicians will propose bills related to ART, and courts have generally ruled in favor of laissez-faire policies (Heidt-Forsythe 2018). Critics of regulation fear that it would lead to governments banning non-heterosexual couples from receiving services (Ertman 2010), reduce parental autonomy (Ertman 2010; Leve 2013), or lead to a shortage in donor gametes (Spar 2006; Spar 2010; Robertson 2010; Shapiro 2018). These arguments have held greater power in the US than have arguments in favor of regulation and one agency even successfully challenged the recommended guidelines by the ASRM to limit egg donor payment to under $5,000 as alleged price-fixing (Kamakahi v. ASRM 2015).

2.4 The Gendered Marketplace in Sperm and Egg Donation

A unique aspect of the unregulated and commercialized U.S. model is that private companies pay donors high amounts and screen them by very specific, often gendered, criteria. The commonalities of the egg and sperm donor process are that in both cases individuals apply to donate by filling out paperwork and the agencies they apply to choose who can donate primarily based off their educational attainment and conventional attractiveness (Almeling 2011; Daniels & Heidt-Forsythe 2018). What differs between the processes are their payment, screening requirements, and anonymity policies.

One of the most obvious differences is how much and in what way agencies pay egg and sperm donors. Egg donation agencies pay their donors in one lump sum regardless of whether they successfully retrieve ova (Almeling 2011). The amount of payment varies with typical payment consisting of $5,000 to $10,000 (Almeling 2011). However, agencies often pay donors more for certain traits, such as Jewish ethnicity or Ivy League education, with some agencies paying anywhere from $20,000 to $50,000 for donors with these traits (Heng 2007). In contrast,

sperm banks pay their donors in multiple, smaller sums of $50 to $100 each time they donate and only if their semen is of high enough quality (Almeling 2011). Sperm donors can technically make more than egg donors, but few do (Almeling 2011). The differences in payment affects how sperm and egg donors interpret their experience, with sperm donors more likely to see it as job and egg donors more likely to see it as a gift (Almeling 2011). However, the differences in payment schedule are not the only aspect that influences this view. The screening requirements and agency policies do as well.

The major differences in screening is that egg donation agencies require their donors to be altruistic, not financially motivated, and to undergo psychological testing while sperm banks expect their donors to be only motivated financially and rarely require psychological testing (Almeling 2011). Although a less common policy, egg donation agencies are also much more likely than sperm banks to require a donor's partner to undergo psychological screening as well (Johnson 2017). If potential egg donors admit to considering the donation to be a job then the agency will screen them out. Many who apply are aware of this aspect of the screening and will promote themselves in ways that fit these feminine ideals (Gezinski et al. 2016). In reality, the majority of sperm and egg donors in the US primarily donate for financial reasons (Almeling 2011; Nelson & Hertz 2017).

Staff members at agencies and banks also communicate in ways that emphasize the donation as a gift or a job. The recruitment material for donors reflects this communication. Sperm donor ads are often humorous or mention it as a quick way to make money, while egg donor ads show pictures of angels and emphasize helping others (Daniels & Heidt-Forsythe 2012). Egg donation agencies emphasize that donors must "relinquish parental rights" while sperm banks assure their donors are "protected from parental rights" (Johnson 2013). Egg

donation agencies also screen for egg donors who are “too attached” to their potential biological offspring while sperm banks rarely mention potential offspring to their donors (Almeling 2011). Despite the greater surveillance against “too attached” egg donors, they are much more likely than sperm donors to learn whether their tissues lead to a successful pregnancy and to meet the intended parents (Johnson 2011; Nelson & Hertz 2017). Sperm banks are more likely to offer anonymous donors or to offer a formalized identity-release once the child turns 18 (Johnson 2011).

All of these differences in requirements and treatments have escaped the notice of most who work in the industries because sperm banks and egg agencies rarely have contact with each other (Almeling 2011) However, the few who have noted these differences have tried to justify them in various ways such as by claiming that altruistic screening and psychological testing help to ensure egg donors are honest and responsible (Almeling 2011; Johnson 2017). Honesty is supposed to ensure that the donor is not lying during their screening, but this reasoning falls apart when considering that sperm donors are also not supposed to lie.

The second reasoning works off the assumption that egg donation requires more responsibility than sperm donation since egg donors are required to take daily injections and attend regular appointments. Spar (2006) used this explanation when she stated that sperm donation takes “at most a fifteen-minute commitment and a small dose of embarrassment” (43). The problem with this assumption is that sperm donation is not so simple. Sperm banks require donors to make a six-month commitment to donate at least once a week. A bank can only use their sample if it meets quality controls, and if donors come in for STI testing at the six-month mark (Almeling 2011). To ensure their sperm count is high enough, donors must abstain from ejaculating, drinking alcohol, eating too much junk food or exercising too hard for at least 48

hours before each donation. Banks will drop irresponsible donors who do not follow these guidelines and continually turn in sub-par samples leading to a waste of time, effort, and money (Almeling 2011).

Another common explanation that staff and observers of the gamete industry use to explain differential treatment of egg and sperm donors is that women have a natural maternal instinct that men lack (Almeling 2011). Because of this "maternal instinct," agencies must be more careful to screen out both women who care too much and might interfere with parental rights as well as "abnormal" women who do not care at all about their potential offspring. One problem with the maternal instinct argument is that interviews and surveys of donors indicate that egg and sperm donors have similar, usually minimal interests in meeting their genetic offspring (Almeling 2011; Nelson & Hertz 2017).

The social expectations of parenthood better account for the differences in screening and treatment than the idea of inherent maternal instinct or the greater responsibility of egg donation. In modern Western culture, the general public believes and the majority of social institutions support the idea that parenthood is more important for women than men and mothers are better parents than fathers. Russo (1976) created the term the "motherhood mandate" to refer to the idea that modern society considers motherhood to be an essential piece of womanhood. Individuals, both men and women, evaluate childless women negatively and as less of a woman (Russo 1976). Women also experience higher expectations and more pressure to be a good parent than do men (Lee et al. 2014). As discussed earlier, another way that parenthood expectations differ by gender is that modern, Western culture considers nurturance to be more vital to motherhood and a biological link to be more vital to fatherhood (Rothman 1989). Feminism and other social movements have helped to change gender and parenthood norms to

the point that the general public is more accepting of childless women and expect fathers to be more involved in childcare. However, the vast majority of people still perceive women to be the primary and natural caregiver (Lee et al. 2014; Faircloth 2014).

These double standards in parenthood expectations account for the double standard agencies and banks apply when screening egg and sperm donors. The general public places higher expectations on motherhood than fatherhood and these expectations carry over into gamete donation through higher expectations on the character of egg donors than sperm donors. However, once the children are born women are better able to escape motherhood identity because they are not giving nurturance to the child while men are less able to escape the fatherhood label because they do have a biological link (Almeling 2011). Evidence from surveys supports this idea. Egg donors are much less likely than sperm donors to see themselves as a parent to the offspring they help create (Almeling 2011; Nelson & Hertz 2017) and fathers generally consider sperm donors to be more threatening to their parenthood identity than mothers do to egg donors (Nelson & Hertz 2017; Wyverkens et al. 2017).

What is unclear is whether the publishing of these differences or other concurrent processes have led to any changes in the industry. Almeling (2011) conducted her comprehensive study comparing the practices of egg and sperm donation on data from 2002 to 2006 and Johnson's (2011; 2013; 2017) research all relied on data from 2009-2010. These findings are over or close to a decade old, which is a lot of time in the fast-changing commercialized and technological ART industries. Since 2010, the industry has migrated more onto the Internet (Braverman 2010), payment has become less regulated (Kamakahi v. ASRM 2015), frozen eggs have become more popular (Argyle et al. 2016), and at-home DNA testing has skyrocketed (Harper et al. 2016; Mroz 2017). These changes could have easily led to new

policies and there is a possibility that the publication of the discrepancies between the screening and treatment of sperm and egg donors has changed the industry. There is also the possibility that Almeling's (2011) finding that there is a race among the industries to provide more information has intensified, which could lead to more psychological testing for everyone or entirely new gendered patterns in screening. Because of these possible changes, I am interested in investigating what the screening requirements are for egg and sperm donors and whether they differ in regards to altruism, psychological testing, or other requirements not yet discussed in the literature.

2.5 Overview of Eugenics and Stratified Reproduction

Other major ethical issues concerning the gamete donation industry are how it reinforces stratified reproduction and has eugenical implications. Stratified reproduction refers to the theory that experiences and practices of reproduction differ according to class, race, gender, and other axes of identity with certain identities receiving more support and legitimation (Colen 1985). Eugenics refers to beliefs, movements, and practices concerned with purposefully improving the human race in ways consistent with hegemonic ideology (Levine 2017). Stratified reproduction and eugenics apply to the gamete industry by limiting patient access to only those with enough wealth or cultural capital and by only accepting donors who fit dominant ideologies of who should reproduce.

"Stratified reproduction" is a term Shellee Colen (1985) coined in her study of West Indian childcare workers. She defined the term as how "physical and social reproductive tasks are accomplished differentially according to inequalities that are based on hierarchies (…) that are structured by social, economic, and political forces." (Colen 1985: 78). Stratified reproduction covers a broad range of topics related to reproduction such as how upper-class

families commonly relegate care work to migrant women of color, how class affects experiences of infertility, and how policies support certain families in having children over others (Colen 1985; Bell 2014). These forces reflect, reinforce, and intensify already existing inequalities (Colen 1985).

Eugenics first began as an ideology and latter a mass movement first coined and outlined by Francis Galton, cousin to Charles Darwin, in the late 1800s (Levine 2017). He advocated for societies to purposefully direct human evolution by encouraging certain people to reproduce while discouraging others. The eugenics movement rapidly took hold in intellectual circles around the world and reached its peak during Hitler's reign in Germany (Levine 2017). After the horrors of the Holocaust, popular opinion of eugenics plummeted and many organizations disbanded. However, the movement did not disappear, with eugenic ideas continuing to influence attitudes and social policies around the world (Levine 2017). These practices included forced sterilization laws, refusing contraception to wealthy women, and bans against interracial relationships with the logic that these relationships ruin the genetic "purity" of the white race (Plotz 2005; Levine 2017).

There have been two broad movements within eugenics, which it supporters termed negative and positive eugenics (Stern 2002). These terms do not refer to any moral valuation, but instead, refer to the goals or adding to or subtracting from the population. Negative eugenic policies are the most infamous and include any efforts at stopping "undesirable" people from reproducing such as through forced sterilization or murder (Levine 2017). Positive eugenic policies focused on promoting "superior" groups to reproduce, such as through tax incentives, contraception bans, or child-friendly work policies (Levine 2017). Commonly, governments enacted policies and eugenic supporters advocated for both negative and positive eugenics

simultaneously. They also decided which groups should be encouraged or discouraged to have children based on their class, race, gender, health status, and adherence to societal norms. Eugenic supporters generally encouraged reproduction among upper-class white families and discouraged it among lower-class families and minorities (Stern 2002; Levine 2017).

Eugenics is a practice that plays into stratified reproduction by providing a rationale for inequalities and encouraging reproduction in raced, classed, and gendered ways. Those in power used eugenics to justify existing social inequalities as being due to objective, scientific differences in genetics. In reality, the traits eugenicists considered desirable tended to be the same traits the primarily upper-class, white eugenicists themselves possessed (Levine 2017). Eugenicists based their policies much more in social bias than in genetic knowledge.

2.6 Stratified Reproduction, Eugenics, and Baby Markets

Sociologists, feminists, and other academics have criticized the sperm and egg donation industries as reinforcing stratified reproduction and practicing a new form of positive eugenics (Leve 2013; Daniels & Heidt-Forsythe 2012). Debates over how the gamete industry and ART more generally reinforce stratified reproduction tend to focus on who can access the industry and whether this limited access is a problem. Gamete donation, especially egg donation, is expensive and not covered by insurance in the majority of states, meaning that the wealthy are generally the only ones who can afford it even though low-income individuals are more likely to suffer from infertility (Bell 2014). Ertman (2010) argues that these stratified effects are not unique to the gamete industry and therefore should not lead to any regulation over this issue. Indeed, most policy and general opinion supports the idea that families should not have children they cannot afford (Bell 2014). Others have argued in favor of increasing knowledge of and insurance access for infertility services based on the fact that many middle-class families who cannot afford the

procedure can afford the children, or that class status should not limit an individual's ability to reproduce (Spar 2006; Leve 2013; Bell 2014).

An individual's wealth does not only inform how they can start a family; it also informs what type of child they can obtain. Researchers have increasingly pointed out that the adoption industry and ART services operate as a commodified market that values and prices certain children higher than others (Spar 2006; Goodwin 2006; Goodwin 2010). Landes & Posner (1978) first noted this trend by making the controversial claim that the adoption industry functions off a supply and demand model rather than a purely altruistic one. They supported this claim with evidence that healthy, white infants cost thousands of dollars more to adopt and people adopt them much more quickly in comparison to disabled children or children of color (Landes & Posner 1978). These trends are still relevant today. The price of and likelihood of adoption still varies greatly in response to who the infant or child is, and calls to change this system have failed due to lobbying by the private adoption industry and their consumers (Goodwin 2006; Goodwin 2010).

Two unintended consequences of differential pricing in adoption and the limiting of ART to the upper-class is that adoption in general and of disabled children, in particular, has become much less common among wealthier families (Goodwin 2010). This is because in our culture that praises genetic ties, most intended parents prefer ART to adoption, meaning that those who can afford to use the former do so over the latter (Laningham 2012). Those with enough money are also able to buy healthier children, which leads to the unfortunate situation that the children who need the most care and medical attention are less likely to be adopted by families who can afford the cost of their treatments (Goodwin 2010).

The differential pricing of children based on their traits in adoption is extremely similar to the differential pricing of donors based on their traits. Egg donation agencies commonly pay egg donors more based on their ethnicity, with Asian and Jewish donors paid a premium due to their high demand by intended parents and conversely agencies and banks refuse to pay disabled donors anything by screening them out (Heng 2007; Almeling 2011). The idea of differentially valuing donors based on their traits demonstrates eugenic ideology. In adoption, parents are buying an already existing child with already existing traits. In gamete donation, parents are buying the potential of a child with certain traits, the logic of which only works if these traits are assumed to be genetic. Some of the traits that agencies screen donors for are known to be genetic such as certain diseases like Sickle Cell Anemia or Tay Sach's. However, most of the traits agencies and intended parents select for are questionably genetic or certainly not genetic such as religion or musical talents.

The claim that gamete donation is a type of eugenic practice is controversial. Those critical of these accusations have claimed that the practice is not eugenics because individuals, rather than states, are choosing these traits (Savulescu & Kahane 2009), or that intended parents are choosing the donor as a person rather than their specific traits (Mroz 2017). Others have argued that any eugenic potential is negligible because relatively few people use gamete donation (Ertman 2010). The problem with these claims is that eugenics has never purely been about state control, many parents do choose donors with the explicit hope their children will inherit certain traits, and the practice of the current gamete market has implications for other baby businesses as well as future reproductive technology (Plotz 2005; Spar 2006; Levine 2017). I will provide two major examples that link eugenics to the gamete industry and provide support

that eugenics has never completely been about state control. These are the Better Baby and Fitter Family contests of the early 20th century and the one explicitly eugenic sperm bank.

The "Better Baby" and later the "Fitter Families for Future Firesides" were eugenic contests held at state fairs where judges rated babies and families on their traits (Lovett 2007). Eugenicists held these contests as the human equivalent of livestock breeding contests (Lovett 2007). Originally, public health officials and eugenic organizations hosted these fairs together. They aimed to promote infant health and eugenic ideology by informing the public on parenting practices, Mendelian genetics, and racial hierarchies (Lovett 2007).

These eugenic contests relate to the current gamete market through the eerily similar criteria used to judge fit families and donors. Both used the criteria of individual health, family health history, educational attainment, occupation, personality, religion, and special talents (Lovett 2007; Daniels & Heidt-Forsythe 2012; Gezinski et al. 2016b). Many of these traits, especially the later ones, are notable for being primarily influenced by the environment rather than biology (Lovett 2007; Levine 2017).

Better Baby and Fitter Family contests also show an example of how eugenics grew beyond state control and how flexible the ideology could be. While government public health agencies originally sponsored the contests, eventually they grew so popular that local organizations began hosting them (Lovett 2007). The NAACP challenged these contests due to their assumptions of a racial hierarchy (Dorr & Logan 2011). However, the NAACP did not completely challenge the ideology of eugenics; it held its own Better Baby contests, the proceeds of which went to anti-lynching efforts (Dorr & Logan 2011). These explicitly eugenic contests were never only about state control, and the ones held by the NAACP were ironically used to fight racist state policies.

A more obvious example linking the current gamete industry to eugenics is the existence of the sperm bank called the Repository for Germinal Choice. Robert Graham founded this bank in 1980 as a way to promote positive eugenics (Plotz 2005). The founder, Robert Graham, was an avid eugenicist who started the bank in the hopes of recruiting Nobel Prize winners as donors to create a "genius class" of children that would lead the world out of chaos (Plotz 2005). Predictably, the reality of the bank was much less dramatic or world-changing. Graham had a hard time recruiting Nobel Prize winners, which led to him lowering his standards to ordinary geniuses or decently accomplished men, and there is no evidence the resulting children became the world-changing leaders Graham envisioned (Plotz 2005).

However, the so-called Genius bank was important through its influence on the industry. The bank was notable for offering parents a multitude of choices in their donors, which was unique at the time, and some intended parents sought the bank for greater choice rather than a desire for a genius baby (Plotz 2005). The industry helped to accelerate the trend noted by Almeling (2011) of banks and agencies competing with each other by offering the most information and most attractive donors. Indeed, the genius bank was instrumental in showing the latter through the many intended parents who desired genius babies (Plotz 2005). Now, some banks offer exclusive pricing for sperm from men with Ph.Ds. and intended parents commonly search out donors with specific traits, such as musical talents (Mroz 2017). The genius bank also serves as an example of how eugenics does not always rely on state control and that explicit supporters of eugenics have justified their beliefs as promoting individual choice.

Another area both the Fitter Family contests and the Genius Bank have in common is they both fostered a sense of pride and obligation to reproduce due to one's genetic heritage. Winners of the Fitter Family contests would receive medals that said "Yea, I have a goodly

heritage" (Lovett 2007: 80). Graham and his staff would recruit their donors by emphasizing their superior genetics and need to help the greater good in society (Plotz 2005). There is also evidence that a substantial minority of donors are motivated by a desire to spread their genes, which has been found in numerous interviews with donors (Plotz 2005; Almeling 2011; Mroz 2017) and one survey where 60% of sperm donors and 30% of egg donors stated this was one of their motivations (Nelson & Hertz 2017).

I am interested in whether – and if so, how often – gamete industries encourage donors to be proud of their genetics or to think they are obligated to spread their "superior" genes. The fact that the desire to spread one's genes motivates a substantial number of donors is likely something the industry has noticed and possibly promoted. This leads to my second research question: How do agencies navigate eugenic attitudes when recruiting donors? I am also interested in how gamete industries use eugenics to recruit intended parents to their agency, which leads to my third research question: How do agencies navigate eugenic attitudes when recruiting intended parents?

2.7 Gendered Eugenics

The differential treatment of egg and sperm donors intersects with eugenic ideology through how the traits that intended parents search for in donors differs by their gender. This idea of a gendered eugenics was first connected to the gamete industry by Daniels & Heidt-Forsythe (2012), which they defined as "the social practice of ascribing superior human traits to those who most closely match Western ideals of masculinity and femininity for the purpose of human reproduction" (720). Even though males and females contribute equally to heritable traits, unconscious gender bias influences the traits searched for in women and men, such as sperm donors being more valued for their height and egg donors for their body type (Daniels & Heidt-

Forsythe 2012). These findings of gender differences in traits shows how prevalent gender bias still is, how agencies and intended parents often select donors irrationally, and how social ideas of gender intersect with biological understandings of sex.

Historically, theories of reproduction were highly biased against women. Many philosophers, medical professionals, and those in the general public assumed that fertility was a purely female problem that never happened to men (Moore 2007). Spermism was a popular theory in the 16th to 17th century, which was the belief that each sperm contains a tiny human and that women only contributed by providing a vessel for the fully-formed human to grow (Moore 2007). Modern beliefs in reproduction now recognize that men can have infertility problems and that both sexes contribute equally to a child's genetic heritage. However, most people still see reproduction as primarily a woman's issue, and infertility is usually a greater burden for the women who suffer from it compared to men (Bell 2014).

While greater scientific knowledge has led to less gender bias in some ways, such as the recognition of male infertility, it has not erased bias in scientific understandings. This can be seen in the ways gender influences how people understand sex. Gender refers to social practices and expectations ascribed to women and men while sex refers to the biological differences between males and females. Understanding gender and sex as separate concepts has been beneficial in dismantling gender essentialism and creating space for people whose sex differs from their gender presentation. However, the simple dichotomy of gender as social and sex as biological has been challenged by some such as West and Zimmerman (1987) who conceptualized gender as a performance rather than a stable role and Anne Fausto-Sterling (2007) in her work on intersex people whose biological/genetic self is ambiguous. People perform in gendered ways to bolster their claims to a sex category and what a culture counts as a

legitimate sex category is decided based on social ideas of gender rather than "pure" biology (West & Zimmerman 1987). Medical professionals have historically forced intersex individuals to undergo genital surgery and to act in gender-appropriate ways according to whichever sex the medical professionals deem the individuals as being closest to rather than accepting their ambiguous biology (Fausto-Sterling 2007).

Gender bias has affected other understandings of biological sex as well such as how individuals understand fertilization due to the biased way that textbooks and children's books present the fertilization narrative. Martin (1991) brought this phenomenon to light through her study of how undergraduate pre-med textbooks present fertilization. The texts depict sperm as courageous and the male reproduction system as highly efficient and wondrous while presenting the female reproductive system as "wasteful" (Martin 1991: 488). The texts also focused more on the sperm's journey to the ovum than the ovum's journey to the uterus and the authors inaccurately depicted ova passively accepting sperm (Martin 1991). Recent studies have confirmed that Martin's (1991) general findings of the fertilization tale as overly focused on male reproduction is still true in children's sex-education books (Moore 2007) and secondary as well as tertiary textbooks (Campo-Engelstein & Johnson 2014).

The eugenics movement historically treated women and men differently as well. Governments and medical professionals forced sterilization onto women overwhelming more than men (Levine 2017). What traits eugenic supporters considered superior differed based on gender as well (Levine 2017). Because our culture considers reproduction to be a woman's issue, most sterilization campaigns throughout the 20th century focused on women, even though it would make logical sense to sterilize men as well (Levine 2017). Eugenicists also commonly believed during the first half of the 20th century that intelligence was an inferior trait in women

that would lead to lower reproduction rates (Levine 2017). In contrast, eugenic advocates considered intelligence to be a highly desirable trait for men. Promiscuity was another trait that eugenicists considered to be worse for women than men and many states listed it as a justification for sterilization (Levine 2017).

Because there are different expectations for which traits women and men should have, consumers and agencies choose egg and sperm donors based on different criteria. However, the logic behind this is irrational when considering egg and sperm donors both create male and female children. Since parents cannot yet choose the traits of their children based on the fetus's sex, they should equally value the same traits in egg and sperm donors. Instead, intended parents and agencies choose donors based on gendered ideas of what is attractive. Donors themselves have different beliefs in why they were selected, with men being more likely to believe it was due to their intelligence and women that it was due to their character (Nelson & Hertz 2017).

There has been little research conducted on the intersections of eugenics and gender bias other than Daniels & Heidt-Forsythe's (2012) study. Some critics of ART industries have brought up concerns over how gender influences trait selection, but only to claim that women would be more likely to show "maternal concern" over her children having the best traits (Lavazza 2019). Daniels & Hedit-Forsythe's (2012) study showed that there are differences in the traits of already approved egg and sperm donors. What their results were not able to show is whether these differences are due to explicit screening requirements or more informal screening towards certain types of people over others. The idea of gendered eugenics will help inform how I analyze the above research questions. Do differences in screening requirements reflect ideals of what is genetically appropriate for the sexes? And does eugenic communication differ depending on the gender of the intended parents or donor?

3 METHODS

3.1 Research Questions

To explore my research questions, I conducted a content analysis of websites from sperm banks, frozen egg banks, and fresh egg donation agencies. The first research questions (RQ1) is: according to agencies' websites, how do agencies screen egg and sperm donors and how do these differences reinforce gender stereotypes? The second research question (RQ2) is: how do agencies navigate eugenic connotations when recruiting donors? The last research question (RQ3) is: how do agencies navigate eugenic connotations when recruiting recipients? For all research questions, I explored how the requirements and themes varied by agency type. Specifically, I compared fresh egg donation agencies, frozen egg banks, and sperm banks.

3.2 Sample

3.2.1 Bank and Agency Selection

There is no complete list of all the egg donation agencies or sperm banks, so I collected my sample by using the Infertility Resource Center's (IRC) list of agencies and by searching terms related to sperm and egg donation on Google. My inclusion criteria were that organizations operated in the U.S., hosted a public website, used their website to recruit donors, and included known donors. My exclusion criteria were organizations who only used known donors. If an organization had multiple websites for different clinic locations, then I only included information from their primary domain since these organizations tended to have the same policies for each location. I conducted this search and collected screenshots from the websites between October 2019 and January 2020.

Due to the high price in maintaining frozen gametes, only large banks survive -- meaning that there are fewer frozen sperm and egg banks than fresh egg donation agencies (Spar 2006).

Because there are so few, I analyzed all of the sperm or egg banks that I could find websites for in the US. For the agencies, I choose a mix of organizations from around the country since policies on ART vary according to the state they are in (Heidt-Forsythe 2018). I also included any organizations that jointly work in the sperm and egg donation industries.

3.2.2 Final Sample

I collected information on 51 banks in total. Of these, 17 were sperm banks, 14 were frozen egg banks, and 19 were fresh egg donation agencies. The sperm and frozen egg banks represent all frozen, donor, gamete banks in the US that primarily operate online. The number of sperm banks in this sample was lower than previous research (Johnson's 2011; 2013; 2017). This lower number is likely due to sperm banks closing or merging. Since the early 2000s, sperm banks have dominated the market replacing smaller, local ones (Spar 2006). While creating the list of gamete donation agencies, I came across multiple websites for closed sperm banks and conglomerates between banks which previously operated separately such as one between Cryobio, Wilmington Reproductive Laboratories, and Pittsburgh Cryobank.

Nineteen fresh egg donation agencies represent a sample as there are hundreds of local fresh egg donation agencies throughout the country (Spar 2006; Johnson's 2011; 2013; 2017). For this sample, my exclusion criteria were agencies that did not offer information about their screening requirements on their website or that operated inside of a university. Gametes donation used to commonly take place inside of universities, but this is becoming increasingly uncommon as the industry becomes more commercialized to the point that no sperm banks operate inside universities anymore (Spar 2006). Since university-affiliated banks have tended to take a less commercialized approach, I decided against including any in this current study in order to focus on the more popular private egg donation agencies.

I collected information on which geographic area the egg donation agencies worked and chose to analyze at least two agencies from each region (Eastern, South Eastern, Midwest, Western, and Multi-Regional). I included the highest number of agencies from the Western region and Multi-Regional because there seems to be a higher percentage of agencies based in the West or that operate across the country. Most sperm and frozen egg banks operate in these areas, and most fresh egg donation agencies I came across also operate in these areas.

I also included three different agencies that recruited sperm and egg donors: Fairfax, Cryos, and CNY Fertility. Fairfax and Cryos both started as sperm banks that latter added a frozen egg bank program while CNY Fertility is a fresh egg donation agency that attempted to start a sperm bank. When collecting data, CNY still included a sperm bank, but they have since discontinued this service. Table 1 provides a list of all the gamete banks included in this study and Table 2 shows the distribution by region of sperm banks, frozen egg banks, and fresh egg donation agencies.

Table 1. List of Banks by Gamete Type

Sperm Banks (*n*=17)	Frozen Egg Banks (*n*=14)	Fresh Egg Donation Agencies(*n*=19)
BioGenetics Corporation	Asian Egg Bank	Center for Reproductive Medicine
California Cyrobank	CCRM Fertility	Circle Surrogacy
CNY Fertility*	Center for Human Reproduction	CNY Fertility*
Cryobiology	Cryos*	Conceptions
CryoGam Colorado	Donor Egg Bank USA -	Egg Donor and Surrogate Solutions
Cryos*	Egg Donor America	Elevate Egg Donation Agency
Fairfax*	Egg Donor Inc.	Family Creations
Midwest Sperm Bank	Fairfax*	Fertility Alternatives
New England Cryogenic Center Inc.	Global Donor Egg Bank	Fertility CARE
NW Cryo Bank - also does ED	Golden Egg Donation	Fertility SOURCE
Pacific Reproductive Services	My Egg Bank - Frozen	Jewish Bleshing, A
Phoenix Sperm Bank	Pacific Fertility Egg Bank	Midwest Center for Reproductive Health
Reprolab	The Fertility Institutes	Nationwide Egg Donation Agency
Seattle Sperm Bank	The World Egg Bank	ORM Fertility
Sperm Bank Inc.		Perfect Match, A
The Sperm Bank of California		Reproductive Science Center
Xytex		RMA Network
		Shady Grove Fertility
		Tiny Treasures LLC

*Includes a sperm bank and an egg donation agency

Table 2. List of Agencies by Location

	Southeastern	Eastern	Midwestern	Western	Multi-Regional
Sperm Banks	2	3	2	7	3
Frozen Egg Banks	1	2	0	3	8
Fresh Egg Agencies	2	2	3	5	7

3.3 Webpage Content

From all the banks and agencies in the sample, I collected information from the website to use in coding. On each of these websites, I gathered all information intended for donors including, but not limited to, screening requirements, recruitment pitches, and frequently asked questions (FAQ). Agencies varied greatly in how much information they included in their websites and I collected 3 to 30 pages of relevant pages from each site. All included information on screening requirements since recruiting online was one of the inclusion criteria. All websites listed screening recruitments for potential donors to look at and some websites also listed the requirements for the consumers to view. Almost all websites included recruitment pitches which was usually a page listing the benefits of donating in general or with their agency specifically. Most websites included a FAQ for donors and recipients which served to clarify how donation or the agency policies worked. Multi-Regional agencies tended to include more information on their websites likely due to the larger size and resources of these agencies. For every webpage that included any of the information mentioned above, I saved a copy of the page as a PDF file in order to analyze these pages on NVivo.

3.4 Coding Process & Descriptions

For this project, I used NVivo 12 (QSR International) to organize and facilitate my analysis. The research questions require different types of analysis. In order to assess the screening requirements among different programs (RQ1), I used a basic content analysis approach which focused on the manifest content in the data. Findings are reported in frequencies and proportions (Drisko & Maschi 2016). This is appropriate for this question since the focus was on finding and comparing the explicitly mentioned screening requirements of programs.

To conduct the basic content analysis, I created a code for each unique type of screening requirement a program mentions. These codes for screening criteria included age, height, BMI, education level, drug use, personality traits, psychological evaluation, and altruistic motivation. For example, if a program mentioned that potential donors must be within a specific age range, then I created a code in NVivo called "Age Requirement." Every additional program that has an age requirement received the same code. I also created sub-codes if programs provided additional information related to an existing code. For example, under “Age Requirement” I included sub-codes that specified the specific age ranges such as "minimum age of 18" or "minimum age of 21". For height and BMI, I create similar codes and sub-codes as for age where I noted minimum and maximum requirements. For BMI, some agencies mentioned that donors needed to have a “healthy” or “normal” BMI without specifying the exact number in which case I classified those agencies under "Healthy/Normal BMI".

Most agencies listed specific education requirements for their donors. I labeled each bank under the lowest level of education they allowed. For example, if an agency required a high school degree or a bachelor's degree, then I labeled the bank under "High School Graduate." The exception to this was the label "Professional Experience." I labeled any agency that required a donor to have professional experience under "Professional Experience" in addition to their lowest education requirement. I did this because all agencies that allowed professional experience only allowed this as a replacement for higher education. "Good education" refers to agencies and banks who mentioned that donors should be highly educated or have a good education without defining what good education means. Most agencies mentioned that donors could not partake in drug use, or they included drug testing in their screening requirements. I

separated the categories for smoking, drinking, and other illicit drugs because the agencies that listed these requirements tended to separate them.

Some banks and agencies listed that their donors must have specific characteristics in order to donate. I included any traits that at least five agencies mentioned. These traits were: committed, honest, mature, reliable, responsible, smart, qualified, exceptional, and diverse. If the agency listed the trait under their screening requirements, then I counted the trait as a "Formal Requirement." If the agency listed the trait as something most of their donors had, then I listed it as an "Informal Requirement."

To measure whether an agency required donors to undergo any type of psychological screening, I labeled any instances where agencies mentioned that donors had to meet with a mental health professional, undergo a psychological test, or listed that donors had to be mentally or emotionally healthy. If an agency required donors to meet with a psychologist, counselor, or social worker as part of the screening process, then I labeled the agency as requiring a "Mental Health Evaluation." If they required donors to undergo a personality screening – most commonly, they used the Minnesota Multiphasic Personality Inventory (MMPI) – then I labeled them as requiring a "Personality Test." If a bank mentioned that donors must be mentally healthy, free of psychological problems, or other mentions of mental health not in reference to required testing, then I labeled the agency as requiring donors to be "Mentally Healthy."

To measure whether an agency required altruistic motivation, I labeled any mention that donors had to have "altruistic," "proper," or "healthy" motivation as an "Explicit Requirement." If an agency's website mentioned that altruism is the main reason someone should donate or claimed that was most of their donor's motivation, then I labeled the agency under "Implicit

Requirement." Under each type of requirement, I list the number of agencies who listed at least one of the above-mentioned criteria.

Some agencies included sections where they justified their screening requirements, most often this would be under the FAQ section. I kept track of these instances and discuss them appropriate in the analysis section to examine the reasons why agencies claim to use these criteria. After examining all the posted screening requirements, I compared the frequencies between type of agencies, and evaluated how these differences reinforce gender stereotypes. The types of agencies included fresh egg donation agencies, frozen egg banks, and sperm banks.

For RQ2 and RQ3, I conducted an inductive, thematic content analysis by defining and identifying implicit and explicit themes, particularly pertaining to eugenics. An inductive, thematic approach is appropriate because these are exploratory research questions and there is minimal existing research on this topic (Braun & Clarke 2006).

To conduct the thematic content analysis, I first highlighted and made notes of any relevant texts that have eugenic connotations. For example, I highlighted any mention of "elite" or "high-quality" donors. I also highlighted any discussions around the idea of trying to create a child with specific traits. After making notes of the entire dataset, I reviewed the notes to identify themes in the data. After identifying the themes, I went back through the data in order to further clarify and define the themes.

3.5 Advantages and Disadvantages

Content analysis is a useful method for identifying patterns in texts and visual materials (Drisko & Maschi 2016). As such, it is an appropriate method to analyze the donor application process, since most banks and agencies recruit donors through online texts and webpages (Braverman 2010). A major advantage of content analysis is that it has high external validity

since the content is used in real life situations rather than created for research (Drisko & Maschi 2016). In the case of gamete donation websites, the majority of donors and intended parents use these websites and learn information about the donation process through them (Braverman 2010; Mroz 2017). Even if an agency's proclaimed practices on their website do not entirely match their actual behavior, intended parents and donors learn messages about who is supposed to donate (Johnson 2017). Studying the initial screening process will provide more knowledge on the specifics of what traits are most valued in male and female donors. Since both sperm banks and egg donation agencies recruit online, this study also allows for an easy comparison between practices.

A major disadvantage of conducting a content analysis of information on websites is that it does not give us a perfect indication of an organization's practices. Some banks or agencies do not include much of their information online and instead rely on in-person contact to spread information. They may only list some of their screening requirements, or they may be more hesitant to use eugenic language online than offline. Another limitation is that I only accessed the first step in the donation application process and so I will not have as much information on screening in the later steps. For example, a website may list that psychological testing is required, but not list how they will use the test.

4 Results

4.1 Screening Requirements

4.1.1 Age

Table 3. Minimum Age Requirements

	Egg Agencies	Egg Banks	Sperm Banks
18	0 (0.00)	5 (0.36)	9 (0.53)
19	2 (0.11)	2 (0.14)	4 (0.24)
20	7 (0.37)	0 (0.00)	1 (0.06)

21	10 (0.53)	7 (0.50)	0 (0.00)
Any Minimum Age Requirement	19 (1.00)	13 (0.93)	14 (0.82)

Most agencies list a minimum and maximum age requirement for donors. The age ranges varied widely across agencies and between egg donation agencies and sperm banks. For minimum age requirements, around half of egg donation agencies set their cut-off at 21 while no sperm bank use this age. Most sperm banks set their cut-off at 18, while only 36% of frozen egg banks and 0% of fresh egg agencies do so.

The lower minimum age requirements for sperm banks likely reflect the old ASMR (2008) guidelines and the continuing myth that donating eggs is harder emotionally than donating sperm (Keehn et al. 2008; Almeling 2011; Nelson & Hertz 2017). Previous ASMR (2008) guidelines suggested that sperm donors could be of legal adult age while egg donors should be at least 21 to ensure she is mature and ready enough for the process. These guidelines bolstered the idea that gamete donation can only be emotionally challenging for women. However, men who are presumably motivated financially do not need any type of support or guidance. Current ASMR guidelines (2019) no longer list any age requirement and instead suggest that all donors undergo counseling. However, the industry's online recruiting efforts do not reflect these new guidelines.

Table 4. Maximum Age Requirements

	Egg Agencies	Egg Banks	Sperm Banks
27 - 30	9 (0.47)	8 (0.57)	0 (0.00)
31 - 35	10 (0.53)	5 (0.36)	1 (0.06)
36 - 40	0 (0.00)	0 (0.00)	9 (0.53)
Over 41	0 (0.00)	0 (0.00)	4 (0.24)
Any Maximum Age Requirement	19 (1.00)	13 (0.93)	14 (0.82)

There are wide variations in maximum age ranges from a low of 27 to a high of 44. These ranges show a clear distinction between gamete type – with one exception, only egg donation agencies list a cut-off age of 27-35 and only sperm banks list age ranges greater than 36. The

clear distinction in age ranges reflects the widespread belief that age matters more for women's fertility than men's fertility, as shown in the following quote from the Center for Human Reproduction:

> "Consequently, no fertility treatment can beat 20-year-old eggs in a 40-year-old infertility patient, who now has the pregnancy chance and miscarriage risk of a 20-year-old. Since the egg contributes approximately 95% (and sperm only 5%) to the ultimate "quality" of the embryo, the male's age is of much less importance."

There is consensus among reproductive scientists and medical practitioners that women's age causes a greater decrease in fertility than men's age (Ramasamy, Kohn, & Than 2019). Women undergo menopause while men are technically able to produce children throughout their lifespan. However, a growing literature suggests this is not the whole story and that men's reproduction declines throughout their life as well (Khandwala et al. 2016; Ramasamy, Kohn, & Than 2019). While the exact mechanism is unknown, children born to older men are more likely to have genetic abnormalities, schizophrenia, Autism Spectrum Disorder (ASD), and to have worse infant health outcomes (Ramasamy et al. 2019). Older men's partners are also more likely to develop gestational diabetes or to have a spontaneous abortion (Khandwala et al. 2016). The exact mechanism and scope of these increased adverse outcomes are unknown due to a lack of research on advanced paternal age, which has been a neglected research topic due to the assumption that maternal age matters more (Ramasamy, Kohn, & Than 2019).

The greater focus on older women's reproduction and the under focus on older men's reproduction is likely a reason for the large discrepancy between egg agencies and banks in maximum age requirements as well as the broad range of age requirements among sperm banks. Agencies assume that because there is a lack of research on men's reproduction as they age, their cut-off can be significantly higher than that for women. This attitude is further exacerbated by ASMR (2016), who released guidelines on how to ethically handle women of "advanced

reproductive age" while their only guidelines on the subject of men of "advanced reproductive age" is a small paragraph within the article on women.

4.1.2 Height

"Applicants should be at least 5'8". If you feel that you are an otherwise excellent candidate, and we should consider your application despite not meeting our height requirement, please apply and elaborate in the 'comments' section of our online application."

- California Cryobank

Table 5. Height Requirements

	Egg Agencies	Egg Banks	Sperm Banks
Maximum Height	0 (0.00)	0 (0.00)	1 (0.06)
Minimum Height	0 (0.00)	1 (0.07)	6 (0.35)

A significant minority of sperm banks list a height requirement while only one egg donation agency does. These height requirements are for minimum height with one exception. This exception is New England Cryobank's requirement that donors may not exceed 6'6 ft. The range in minimum heights for sperm banks is between 5'7 to 5'10 and the one egg bank that mention a minimum height listing it as 5'0. One sperm bank, Cryos International, lists a shorter height requirement of 5'4 for donors who were Hispanic or Asian. Multiple sperm banks mention that shorter, potential donors could still apply if they were "otherwise excellent." Even though a minority of agencies mention height requirements, multiple agencies mention height as an important characteristic that recipients searched for in a donor. It is possible that many agencies still screen based on height even if they do not explicitly mention it as a requirement.

The large discrepancy in height requirements is a stark example of sexism. People value height more in men than in women and because of this, recipients and agency workers see height as a desirable trait in sperm donors more than in an egg donor. These findings support Daniels &

Heidt-Forsythe's (2012) finding that sperm donors are much taller than average men, while egg donors are only slightly taller than average women.

4.1.3 BMI

"Our donors' health and safety are our primary concerns, which is why we only accept donors with BMI's between 18-26."

-Fairfax Egg Bank

Table 6. BMI Requirements

	Egg Agencies	Egg Banks	Sperm Banks
Healthy/Normal BMI	3 (0.16)	5 (0.36)	2 (0.12)
Maximum BMI	13 (0.68)	6 (0.43)	0 (0.00)
Minimum BMI	8 (0.42)	5 (0.36)	0 (0.00)
Any BMI Requirement	16 (0.84)	11 (0.79)	2 (0.12)

Most egg donation agencies, both fresh and frozen, list a BMI requirement while only two sperm banks did so, and those the two sperm banks listed a non-specific requirement. The few egg donation agencies who justified BMI requirements all did so by saying they based it on the fact that higher BMIs make fertility treatment less effective and anesthesia more dangerous. All agencies focused on the science behind the reasoning and ASRM recommendations. Research supports the idea that higher BMIs make egg donation and IVF more difficult (Kudesia et al. 2018).

However, there is reason to be skeptical that agencies only base these requirements on scientific consensus. There is no standard across egg donation agencies for what the ideal BMI range is with a broad range in minimum and maximum cut-offs. If scientific consensus were the only reason, then sperm banks would also mention BMI as a requirement because higher BMIs are associated with worse semen quality (Sermondade et al. 2013). While sperm banks generally do screen semen quality in the beginning of the application cycle, including BMI cut-offs would

be a cost-saving measure in a similar way that BMI is not a complete predictor of outcomes for women either.

4.1.4 Education

"Women are correct when they assert education attainment level is not correlated to the health of an individual. With that said, the reason for why we require a minimum of a high school diploma is two-fold, and they are attributed to business decisions, and not for medical reasons."

-Fairfax Egg Bank

"We draw heavily from the colleges and graduate programs in those areas, as well as recruiting successful professionals to become sperm donors."

-Fairfax Sperm Bank

"There is a very high demand for donors with Bachelor's degree and higher. Even more so for donors with math, science, and law degrees."

-Fertility Alternatives

Table 7. Educational Requirements

	Egg Agencies	Egg Banks	Sperm Banks
High School Graduate	2 (0.11)	2 (0.14)	0 (0.00)
Some After High School	2 (0.11)	3 (0.21)	4 (0.24)
Attending College or Graduate	3 (0.16)	2 (0.14)	7 (0.41)
Professional Experience	0 (0.00)	1 (0.07)	3 (0.18)
Good Education	2 (0.11)	2 (0.14)	1 (0.06)
Any Education Requirement	10 (0.53)	8 (0.57)	13 (0.76)

As can be seen in Table 7, overall, sperm banks are slightly more likely to have some type of education requirement, and they are more likely to have higher educational standards -- with 41% requiring a college degree. In comparison, only 14-16% of egg agencies do. No sperm banks allow only a high school degree, while 11-14% of egg agencies set their requirement at

this level. Banks and agencies were equally likely to require "good" education without specifying what this means.

The few times that agencies justify their educational requirements; it is to claim that intended recipients want highly educated donors because they want someone who resembles their level of education. Fairfax Egg Bank is the only agency who expanded their justification by claiming that, "in aggregate," women without a high school degree would be less likely to follow the egg donation regime accurately. While Fairfax Egg Bank spends a page discussing why they require egg donors to have a high school degree, Fairfax's sperm bank does not explain why sperm donors must have a college degree.

The pattern of requiring higher education for men matches Daniels & Heidt-Forsythe's (2012) finding that sperm donors are more likely to have a college degree than egg donors. Daniels & Heidt-Forsythe (2012) argue that the more abundant supply of sperm donors leads agencies to objectify sperm donors more and hold them to higher standards than egg donors. Another possible explanation is that agencies and recipients value education more for men than women since Western culture has historically valued intelligence more in men than women (Levine 2017).

4.1.5 Drug Use

Table 8. Drug-Use Requirements

	Egg Agencies	Egg Banks	Sperm Banks
No Smoking	13 (0.68)	8 (0.57)	0 (0.00)
No Excessive Drinking	2 (0.11)	1 (0.07)	1 (0.06)
No illicit drugs	10 (0.53)	8 (0.57)	1 (0.06)
Drug Test	8 (0.42)	8 (0.57)	2 (0.12)
Any-Drug Related Requirements	16 (0.84)	12 (0.86)	4 (0.24)

Egg donation agencies were more likely to mention any drug restriction or to include drug testing in their screening than were sperm banks. The largest difference between egg and sperm agencies is whether they mention if donors can smoke. Most egg donation agencies require donors not to smoke while no sperm banks mention smoking. The discrepancies between drug use requirements may be due to a lack of information on sperm donation websites, a result of the studies on the adverse outcomes to ova of women who use certain drugs, and/or due to greater focus on egg donors' characters than sperm donors'.

Sperm banks generally listed less information on their websites than egg donation agencies did. This may be because sperm banks are older and have relied less on technology, which could mean that sperm banks have more drug-related requirements they do not mention on their websites (Spar 2006; Almeling 2011). Another potential factor for this discrepancy is that there are more research and guidelines on pregnant women's drug-use than on men's drug-use. Multiple studies support the finding that women's smoking and high alcohol use can damage ovum and embryos, though the literature on caffeine consumption is still mixed (Mínguez-Alarcon et al. 2018). There has been much less research on men's drug use and birth outcomes; though multiple studies have found that smoking harms semen quality (Mínguez-Alarcon et al. 2018).

The lack of research on men's drug use is reflective of the general finding that research on ART and birth outcomes focuses on maternal factors over paternal factors (Mínguez-Alarcon et al. 2018; Khandwala et al. 2018; Ramasamy et al. 2019). The under-focus on paternal factors leads to the assumption that paternal factors do not matter, which leads to fewer studies on the subject and fewer informed sperm bank guidelines. Another possible explanation for this discrepancy is that it relates to the general finding that egg donation agencies screen their donors

more based on personality than do sperm banks (Almeling 2011). Egg donation agencies may be using drug-use as a proxy for responsibility and "appropriate" maternal behavior while sperm banks tend to place much less emphasis on “appropriate” paternal behavior.

4.1.6 Personality and Character Traits

"We do require that our Donors possess a strong sense of commitment, the ability to demonstrate integrity and dependability, as well as a genuine humanitarian desire to assist an infertile couple/individual in conceiving."

- Tiny Treasures

"The World Egg Bank expects all of our donors to be 100% honest, dependable, and committed when filling out the application and paperwork."

- The World Egg Bank

Table 9. Personality and Character Traits Requirements

	Egg Agencies	Egg Banks	Sperm Banks
Formal Requirement			
Committed	1 (0.05)	5 (0.36)	1 (0.00)
Honest	2 (0.11)	2 (0.14)	1 (0.00)
Mature	2 (0.11)	3 (0.21)	1 (0.00)
Reliable	3 (0.16)	5 (0.36)	1 (0.00)
Responsible	4 (0.21)	3 (0.21)	1 (0.00)
Informal Requirement			
Smart	3 (0.16)	4 (0.29)	4 (0.24)
Qualified	3 (0.16)	2 (0.14)	2 (0.12)
Exceptional	1 (0.05)	3 (0.21)	1 (0.06)

Only egg donation agencies list any formal personality requirement, while no sperm banks do so. Frozen egg banks seem to be more likely to list a formal personality requirement than are fresh egg donation agencies. Informal personality requirements show a similar pattern with frozen egg banks listing the most followed by fresh egg donation agencies and sperm banks.

When agencies justify their formal personality requirements, it is to claim that these traits ensure donors will show up to appointments and take the fertility medication on time. Agency worker's perception of the procedures is one potential contributing factor to this gender difference. Because egg donation requires a surgical procedure, people assume that means egg donation is a more time-consuming and intensive process that requires more forethought and responsibility than does sperm donation (Spar 2006). However, sperm donation actually requires a longer time commitment since donors must agree to regularly donate at least once a week for six months or longer while egg donors only need to commit to the process for two to three months (Almeling 2011). Even though frozen egg donation agencies are the most likely to require their donors to be committed and reliable, their process takes the least time commitment since egg donors only need to donate once in a process that takes around one to two months (Robertson 2014).

The differences between personality requirements by agency type are likely influenced by sexist attitudes among agency workers and recipients through the greater scrutiny our society places on women's reproductive decisions, especially in the context of gamete donation and surrogacy (Russo 1976; Almeling 2011; Lee et al. 2014; Johnson 2017). The higher scrutiny culture places on women's reproduction means they must pass higher standards in order to become a gamete donor.

4.1.7 Psychological Evaluation

"Psychological Screening conducted by a psychologist or social worker to ensure that the Egg Donor is aware of all the psychological implications of the egg donation process. This screening will help determine whether the Egg Donor is psychologically sound enough to be an Egg Donor."

- Tiny Treasures

"An egg donor's eligibility is based on her fertility and overall good physical and emotional health."

-CCRM

Table 10. Psychological Requirements

	Egg Agencies	Egg Banks	Sperm Banks
Mental Health Evaluation	14 (0.74)	13 (0.93)	6 (0.35)
Personality Test	5 (0.26)	4 (0.29)	4 (0.24)
Mentally Healthy	14 (0.74)	13 (0.93)	6 (0.35)
Any Psychological Requirement	14 (0.74)	13 (0.93)	7 (0.41)

As shown in Table 10, egg donation agencies or frozen egg banks are much more likely to list any type of psychological requirement than are sperm banks. They were more likely to require a formal mental health evaluation or to mention that donors need to be mentally healthy. However, all banks were equally likely to require their donors to undergo a personality test.

The pattern of egg agencies being more likely to require psychological screening than sperm banks supports Almeling's (2011) finding. In her study, agency workers justify this difference as due to the greater attachment women supposedly have for their gametes than men have for their sperm. While none of the websites specifically mentioned gender differences in donation, they did commonly justify psychological evaluations to ensure women are emotionally prepared to donate their eggs. They often cite the ASRM's recommendations to provide donors with psychological counseling. ASRM's guidelines do recommend psychological counseling for egg donors, but they also recommend that sperm donors undergo it as well (ASRM 2014; 2019). Despite these recommended guidelines, only a third of sperm banks appear to provide counseling for their donors.

Egg donation agencies likely require psychological evaluation more often due to the continuing false perception that egg donors are more attached to their gametes than sperm donors are. Surveys and interviews of donors indicate the majority of sperm and egg donors are motivated by financial reasons, have similarly low interests in their children, and are equally likely to regret donating (Almeling 2011; Spar 2006; Nelson & Hertz 2017).

4.1.8 Altruism

"Egg donation is not about selling your eggs. It is about doing something for another that they can not do for themselves. You are giving the most precious gift of all, the gift of life to a family who is desperately trying to have children."

-Elevate

"When you become a sperm donor for Xytex, you're not only helping families realize their dreams, you're helping your bank account realize its full potential."

-Xytex

Table 11. Altruism Requirements

	Egg Agencies	Egg Banks	Sperm Banks
Explicit Requirement	6 (0.32)	4 (0.29)	1 (0.06)
Implicit Requirement	15 (0.79)	6 (0.43)	1 (0.06)
Any Altruistic Requirement	17 (0.89)	7 (0.50)	2 (0.12)

My results supported Almeling's (2011) finding that egg donation agencies are much more likely to explicitly or implicitly require that egg donors have altruistic motivation than are sperm banks, as shown in Table 11. Only two sperm banks require altruistic motivation while almost all fresh egg agencies and half of frozen egg banks require this. Instead, it is more common that sperm banks mention altruism as a motivation to donate. But ultimately, they expect that men need other reasons as well which is demonstrated by this quote from the

Midwest Sperm Bank: "You could help an infertile couple achieve their most precious dream of having a family of their own. But what if you are not so altruistic? Maybe you need more reasons than just helping someone you don't know."

In contrast, egg donation agency websites commonly claim that altruism must be the primary reason to donate. When agencies justify requiring altruistic motivation, they say it ensures donors are honest and have integrity. In a couple of cases, agencies implied that recipients are the ones who drive this policy such as Fertility Alternatives claim that donors cannot join multiple agencies because recipients "believe that those donors may lack integrity and are likely more motivated by the compensation and less about helping a family." Agencies assume that consumers care more about women donating altruistically than men, which may or may not be supported by consumer's actual attitudes.

Another potential reason for the difference in requiring altruism is that recipients and agency workers perceive sperm donors as more separate from their product. People perceive sperm as more expendable due to the physical ease in obtaining it and its functionally limitless supply while the opposite is true for eggs which require surgery to remove and are limited in supply. Alemling (2011) suggested that the view of sperm as expendable is also due to how banks store it separately from the donor while fresh egg donation involves synchronous interaction between the donor and recipient. She suggested that if eggs could be stored separately from the donor then requiring altruistic motivation would be less common. My results support this claim since frozen egg banks are less likely to require altruistic motivation than fresh egg donation agencies are. However, frozen egg banks are still much more likely than sperm banks to require altruism, which indicates that gender stereotyping plays a significant role.

4.2 Themes for recruiting donors

Agencies primarily communicate messages to donors or potential donors on eugenics in two different ways – by emphasizing the importance of genes or by avoiding associations with eugenic topics. They communicate these messages through their pitches on why someone should donate their gametes, their justifications for screening requirements, and their payment scales that differ based on a donor's traits. Sperm banks tend to be more likely to express the importance of genes and to advocate eugenic ideas while egg donation agencies are more likely to engage in avoidance. However, most agencies and banks engage in both tactics by avoiding eugenic associations in some contexts and advocating it in others.

Most gamete donation websites include potential donor recruitment pitches. They usually have names like "Why You Should Donate Your Eggs/Sperm." Recruitment pitches include both themes of advocating and avoiding eugenic ideas. Some banks advocate it through framing donation as a genetic competition to prove who had the best genetics, which I will call genetic pride, and other banks avoided it by focusing exclusively on altruistic motivation.

Only sperm banks listed genetic pride as a reason to donate. They did this through statements such as Cryobio's claim that "Our pool is only open to the strongest swimmers" and that their sperm donors are a "pretty exclusive club." Another example is Phoenix Sperm Bank's claim that "-suitable donors are a rare breed" and The Midwest Sperm Bank's statement that, "You are in great demand. So if you are feeling bad about yourself, being a sperm donor should make you change your mind about yourself. This is a great self help therapy." These claims recruit men by encouraging them to see whether they can pass the evolutionary test to prove their genetics are desirable and in-demand.

Related to the idea of genetic pride is the idea of eugenic obligation – that donors feel the need to help others through passing on their "desirable" traits. Even though around 30% of former sperm donors report genetic pride as a reason for donating (Nelson & Hertz 2017), I found that only one bank, Cryos, mentioned this type of motivation. It listed "find the idea of passing on own genes important" as a reason to donate. Notably, it framed this reason as a personal preference rather than an obligation. Banks may not regularly list "passing on genes" as a reason because they are unaware this is a common motivation, or the agency workers may not consider it an appropriate motivation. Plotz (2005) and Mroz (2017) expressed discomfort and unease after interviewing donors who were motivated to pass on their genes, which they considered to be egotistical. This could potentially be a common attitude among agency workers and/or gamete recipients.

No egg donation agency listed genetic pride or obligation as a reason to donate. There are likely two reasons for this absence. As discussed earlier, egg donation agencies and banks almost exclusively focus on altruistic motivation as a reason to donate. Genetic pride is not an altruistic motivation, and thus is not an "appropriate" reason for a woman to donate for eggs. Another reason is that our cultural conception of fatherhood includes the idea of "passing on one's seed" while a similar expression is non-existent for motherhood, which is based on nurturance over genetics (Moore 2007; Rothman 1989). Egg donation workers may not have considered that women would be motivated by genetic pride, which would explain why "passing on one's genes" is one of the only reasons to donate that Cryos mentions for sperm donors and not for egg donors.

Another area where agencies and clinics communicated on eugenics was through how they justify their screening requirements. They advocate eugenics through using justifications

that pertained to recipients seeking specific traits in their donors/children, or they would avoid eugenic connotations through using justifications that pertained to ensuring the health and wellness of the donor. Overall, sperm banks are more likely than egg donation agencies to engage in the first tactic and are less likely to engage in the second. The justifications for requirements are usually in the frequently asked questions section of the websites, such as the following answer from New England Cryo on why they include height and education as a requirement:

> Couples who are considering donor insemination want some control over the attributes their child may inherit. Clients who are considering donor insemination tend to want sperm from donors who are on the taller side and who have achieved a certain level of education.

It is also common for agencies to frame their screening requirements as a matter of client demand, as shown by Fertility Alternatives: "There is a very high demand for donors with Bachelor's degree and higher. Even more so for donors with math, science, and law degrees." These statements point to the more explicitly eugenic nature of gamete donation – the act of trait shopping or purposefully looking for donors with desirable traits. While some agencies were open about this type of behavior, most entirely avoided the subject or claimed that recipients only want "high quality" donors because they are "high quality" individuals as demonstrated by Elevate's claim:

> Our intended parents are established, successful, loving, kind, spiritual families that can't conceive on their own. From Olympic gold medalists to patent creators in the field of technology, very special sets of intended parents come to Elevate to find an Elevated egg donor that fits their family mold genetically.

Egg donation agencies are especially likely to claim that their screening requirements are only or primarily used to ensure the health and wellness of their donors, such as The World Egg Bank's claim that: "We do these tests because your health is our top priority throughout your donation cycle." While many agencies only mention the donor's health as the reason, others

would mention the donor's health as well as the donor-conceived child's traits such as Fairfax's Egg Banks statement that: "Our goal is to not only screen out applicants who may have genetic predispositions towards mental illnesses, but to also protect the emotional and mental well-being of the donor as she goes through the process." These claims serve to distance agencies from the eugenic connotations of trait shopping and to create instead the image of being a supportive, ethical company that values individual needs over commercial interests.

Claims to protect the health and mental well-being of donors also demonstrate paternalistic attitudes. Egg donation agencies claim to protect their donors from making bad decisions, but these types of claims are much less common for sperm banks. The greater scrutiny our culture places on women's reproductive decisions often takes the form of paternalism due to the assumption that there are right and wrong ways for a woman to reproduce. The lesser scrutiny our culture places on men's reproductive decisions results in fewer laws and policies restricting what they can do as well as fewer diatribes about protecting men from themselves (Hedit-Forsyth 2018). Egg donation agency pitch that they protect their donors in order to create an ethical image for their company, but it also bolsters paternalistic attitudes that women need more protection from their reproductive decisions than men do.

The last area where I found that agencies communicate about eugenics are through donor pay-scales based on specified traits. This is a pattern exclusive to egg donation agencies, which is supported by the literature (Heng 2007; Holster 2008; Keehn et al. 2012). Most egg donation agencies pay more to experienced donors who had already undergone a successful donation cycle; and a minority of agencies pay more for specific traits – most commonly higher education or being of a specific ethnicity. A similar practice some agencies engage in is to accept donors who live out-of-town if they qualify as "exceptional donors." These long-distance donors have

stricter screening requirements, such as the Center of Human Reproduction list of traits to qualify for the program: "athletic prowess, artistic talents, rare ethnic, cultural or religious heritage, or exceptional physical characteristics."

Egg donation agencies' pay scales based on donor's traits are especially notable since egg donation agencies generally try to avoid emphasizing financial motivation or eugenic connotations. A minority of agencies frame egg donation as an ethical issue with some claiming that differential pricing is more ethical because women should make the maximum amount of money they can based on their traits. Fertility Alternatives show an example of this through their claim that they will "make sure you receive the highest compensation available based on your individual profile and experience." Other agencies claimed that the act of differential pricing is unethical because it commercializes people, such as The Jewish Egg Bank's statement:

> Also, as a woman who values every human being I believe that each young woman who possesses the kindness and compassion to extend her help to a family in such an selfless way deserves equal compensation, regardless of her title, IQ, SAT scores, GPA, degree, social status, ancestry, beauty or previous history of a successful cycle. We do not believe in the commonly held practice that one donor is "worth more" than another.

These claims promote the agency as more ethical and caring than other agencies. Since there is little regulation or cultural standards for what counts as ethical when it comes to ART then the specifics of these claims differ significantly. To the point that one agency will claim differential pricing is the more ethical option and another agency claim that even the idea of differential pricing is unethical.

4.3 Themes for recruiting recipients

Agencies primarily communicate to recipients on messages related to eugenics by emphasizing the superior quality of their donors or by focusing on how supportive their agency is by discouraging trait shopping. Most agencies include recruitment pitches for intended parents

under sections with names like "Why Choose Us?" Similar to the donor communication patterns, sperm banks are more likely to advocate eugenic themes in their pitches while egg donation agencies are more likely to avoid them. Sperm banks are more likely to focus on the quality of their donors, while egg banks are more likely to focus on their supportiveness and affordability.

Agencies communicate about donor quality through explicit and implicit messages. Many mention that they only accept a small percentage of donors who apply, ranging from less than 1% to 10%. Often, they mention these numbers alongside claims that they screen donors more extensively than others, such as Fairfax Sperm Bank's claim to have the "highest quality, best tested donor sperm." Some agencies focus on specific traits their donors have, such as New England Cryo's claim that "Our location amidst several of the top universities in the world allows us to select donors with exceptional intellects as well as outstanding physical health."

While the majority of sperm banks included messages about the quality of their donors, egg donation agencies who engage in these claims were more likely to label themselves as a "boutique" clinic. These clinics frame themselves as specialty clinics that recruit "hard-to-find donors." An example of this is a Perfect Match, which describes itself as a "talent or modeling agency service" that "-recruits intelligent, talented, attractive women to help those who cannot create a family without an egg donor." Another example of this type of agency is Golden Egg Donation, which claims to have developed the "Gold Standard of Egg Donors" in order "-to give your baby a head start."

Agencies tout the quality of their donors because donors are the products they are trying to sell. However, their audience could become wary of their product if it is too commercialized. Agencies try to strike a careful balance between promoting the quality of their donors and the potential to trait shop without coming across as unethical.

While boutique agencies focus on the quality of the donors, most egg donation agencies instead focus their pitch on how supportive or affordable they are. The following quote is representative of these claims: "Egg Donor Solutions is 100% committed to helping you build your family using an egg donor and we are excited to be a part of this journey with you." Often, agencies would claim to be supportive and ethical; for example, The Sperm Bank of California (TSBC) claims: "TSBC is the ethical leader in donor conception with programs that focus on the long-term well-being of the families we help to create."

Agencies who promote their business based on being supportive tend to avoid eugenic connotations, which they would do through claiming to be an ethical company or avoiding the topic of donor quality and trait shopping. However, some agencies and banks promote supportiveness alongside claims of quality, such as Cryobio's statement that "- our high standards extend far beyond our well-screened and tested donors and high-quality sperm samples. We set a high bar when it comes to how we treat our patients." Another example is Egg Donor America's statement that "In addition to our superior egg donors, Egg Donor America is committed to the success of our clients."

Except for TSBC, sperm banks do not mention being supportive as part of their pitch. TSBC is unique since it is the only non-profit sperm bank, and much of its marketing revolves around this. Egg donation agencies framed the act of egg donation as needing more support than sperm donation, which could reflect the more invasive nature of the service, the newer technology of it, or the different type of audiences who use these services – egg donor recipients are more likely to have fertility problems while sperm donor recipients are more likely to be women without a male partner.

Supportive pitches generally served to avoid eugenic connotations by giving agencies a way to promote themselves without commercializing their product. This was made more explicit through agencies that promote themselves as "ethical." While there is not a set standard for what agencies consider ethical, these claims served to ensure recipients that the clinic is not overly commercialized and genuinely cares about the clients. Likely this is in response to general concerns people have over past unethical practices clinics have engaged in and uneasiness in response to body commodification (Gregoire & Mayer 1965; Plotz 2005; Spar 2006; Roth 2007).

Another area where agencies communicate messages on eugenics is through advising recipients on how to choose a donor. These messages are often in FAQ sections or separate pages dedicated to the topic. The majority of the time, agencies give vague answers where they emphasize how personal of a decision choosing a donor is such as Pacific Fertility's statement that "The factors intended parents consider are varied and personal" or Fertility Alternatives statement that "Each Recipient is looking for a donor with a variety of different traits important to them."

In a minority of cases, agencies engage in avoidance by explicitly advising recipients to not trait shop or be too picky when choosing a donor such as Fertility Source's suggestion:

> Try not to focus too much on one specific trait. Whether that includes height, eye color, ethnicity, Ivy League schools, or additional characteristics. Parents who loosely follow their checklist and select a donor 'that feels just right' are typically the happiest in the long run.

Or Pacific Fertility Center's advice: "What is important to remember with any donor however, is while there may not be a 'perfect donor with perfect genes,' there are many healthy, young women who care and want to help." In these cases, agencies explicitly discourage eugenic attitudes in recipients. They may do this because of marketing, genuine concern, or worry that picky parents are more likely to leave a bad review or sue the agency. Multiple agencies included

disclaimers that they cannot guarantee a child will be healthy, perhaps due to past legal trouble where recipients sue banks for false advertising.

4.4 Theme of Contradiction

While I found that egg donation agencies are generally more likely to avoid eugenic communication and sperm banks are more likely to embrace it, the most common pattern is that agencies and banks engage in both tactics even to the point of contradicting themselves. Two ways this commonly plays out is through emphasizing avoidance to donors while emphasizing superior quality to recipients or by emphasizing ethical practices while going against ASMR guidelines.

Many agencies emphasize avoidance to donors while emphasizing their superior quality to recipients. The most common way they would do this is by claiming that screening is only to ensure the health of the donor while simultaneously using those traits to promote the quality of their donors. For example, Sperm Bank Inc. includes this claim at the bottom of their donor screening application: "All physical characteristics, such as height, weight, etc. are not relevant." However, they also include a donor of the month section on their website where they promote individual donors based on their "- desirable physical appearances, educational backgrounds, personalities, and talents."

They claim that physical characteristics are not relevant to ensure they will not objectify donors while then objectifying donors to their consumers. Another example would be Fairfax Egg Bank's claim that it screens for education not because it corresponds to intelligence, but instead because it is associated with being responsible in the program. At the same time, they let recipients know they can choose donors based on their "academic achievements such as years of education, areas of study, achievement test scores and grade point averages."

Agencies may be more likely to claim avoidance to potential donors because they recognize that people do not like to feel objectified. It is likely why agencies are much more likely to claim their screening is for health reasons rather than admit they base their screening on what they believe recipients want. However, they still need to promote donors as products. All the information for donors and recipients is freely accessible to anyone. However, the website builders make the pages with different audiences in mind who likely do not look at the pages meant for the other audience.

Another way agencies contradict their messages is through claims of being ethical while engaging in questionable practices. A stark example of this is shown in Figure 1 from The Fertility Institute's website. They included a 60 Minutes documentary on designer babies and the ethics behind it while promoting "eye color selection," which counts as a type of designer baby procedure. Other examples are the agencies that claimed to follow ASMR's guidelines while directly contradicting said guidelines, especially when it came to differential pricing based on traits and overall compensation rates. Others have found this pattern as well (Carter et al. 2012; Alberta et al. 2013). Agencies likely engage in contradictory pitches in an attempt to benefit

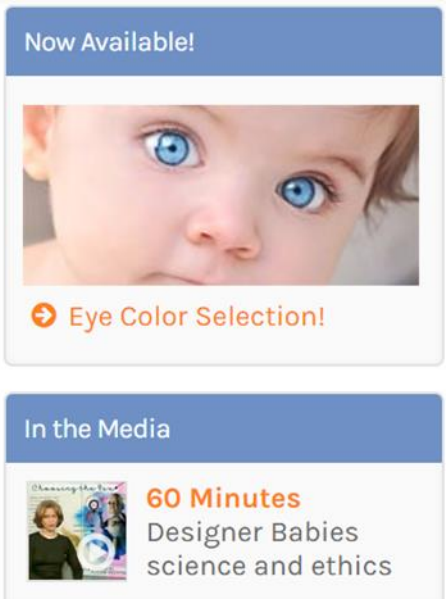

Figure 1. Screenshot from Fertility Institute's Website

from claims of ethics while also promoting their products in a commercialized way. Most recipients likely do not investigate what the ASMR guidelines are, and agencies suffer little consequence from lying since ASMR has no real power to enforce these guidelines.

5 DISCUSSION

Addressing RQ1: according to agencies' websites, how do agencies screen egg and sperm donors and how do these differences reinforce gender stereotypes? I found that, similar to previous researchers, sperm and egg donation agencies advertise and screen in different ways, both due to the different processes involved and sexism (Spar 2006; Almeling 2011; Johnson 2011; Daniels & Heidt-Forsythe 2012; Johnson 2013; Johnson 2017). Egg donation agencies are more likely to include screening requirements related to a donor's "character" than were sperm banks, while sperm banks are more likely to screen based on a donor's traits such as education and height. These requirements reinforce sexist attitudes by making the implicit claim that people should value different traits for women and for men as well as implying that women should be under greater scrutiny for their reproductive decisions.

Addressing RQ2 and RQ3: how do agencies navigate eugenic connotations when recruiting donors? How do agencies navigate eugenic connotations when recruiting recipients? I found that for communication to donors and recipients, egg donation agencies are more likely to emphasize their supportiveness and ethical standards. For communication to donors, sperm banks were more likely than egg donation agencies to emphasize monetary rewards or to frame donation as a point of pride by winning a genetic "competition". For communication to recipients, sperm banks were more likely than egg donation agencies to emphasize their high-quality donors. However, all agencies had to find the line between advertising their product well and completely objectifying donors.

I found that egg donation agencies include more requirements in their screening processes than did sperm banks. This is because they include many requirements that few or no sperm banks mention. These include screening based on altruistic motivation, psychological state, personality, BMI, and drug use. There are only two requirements that are more common for sperm banks than egg donation agencies: education and height. Except for BMI, all unique egg donor requirements relate to a donor's "character" rather than her physical traits. This helps explain Nelson & Hertz's (2017) finding that egg donors were more likely to believe agencies chose them based on their character, while sperm donors believed banks chose them based on their physical traits and intelligence. Rather than due to bias in the donor's perceptions, it may reflect an accurate assessment of the agency's biases.

The focus on egg donor's and not sperm donor's character likely relates to Almeling's (2011) finding that agencies care that egg donors, but not sperm donors, have "appropriate" motivation. Screening for altruism directly achieves this goal while screening for personality, psychological state, and drug-use indirectly achieves it. These attitudes also match broader social attitudes on parenthood where people and policy place much more scrutiny on mothers than on fathers (Russo 1976; Rothman 1989; Lee et al. 2014; Faircloth 2014).

Even though egg donation agencies include more requirements, they are less likely than sperm banks to make claims about how highly selective they are. This is because sperm banks are generally more eugenic, commercialized, and objectifying in their communication to recipients and donors than are egg donation agencies. While few sperm banks explicitly endorse eugenic attitudes, they are more likely to focus on the high quality of their donors. They are also less likely to avoid eugenic connotations through discouraging trait shopping or ensuring that screening is only for health and wellness reasons. In contrast, egg donation agencies are much

more likely to engage in avoidance strategies. This type of impression management is similar and related to their efforts to frame egg donation as a gift rather than as a job (Almeling 2011).

Few agencies explicitly endorse eugenic attitudes, and many purposefully engage in avoidance strategies because the general public is not comfortable with the idea of "designer babies" (Funk & Hefferon 2018). While most people are now supportive of reproductive technology, they continue to feel uneasy about the idea of purposefully choosing traits for a child. Paying for a donor to have a child with specific traits counts as a "repugnant transaction" (Roth 2007). Repugnant transactions refer to when a society considers certain exchanges to be disgusting in general or if money is involved. Because the general public considers designer babies to be unethical, agencies cannot embrace eugenic language without risking losing business.

However, what is repugnant changes over time and as the public becomes more familiar with gene-editing and ART, then attitudes toward designer babies may shift (Funk & Hefferon 2018). While most agencies avoid explicit eugenic claims, a minority of agencies embrace objectifying language and trait shopping. Most sperm banks made claims about their high-quality donors and multiple egg donation agencies framed themselves as "boutique" agencies that specialize in hard-to-find and high-quality donors. The newer frozen egg banks are less likely than traditional egg agencies to require altruistic motivation and they are more likely to make claims about their selectiveness and high-quality donors.

While changing opinions on gene-editing and ART explains why agencies engage in contradictory messages on eugenics, it does not explain why sperm banks are more likely to embrace eugenics and commercialization than egg donation agencies are. Three explanations could account for this difference – the influence of freezing gametes on objectification, different

attitudes in the recipients of sperm versus egg donation, and the influence of sexism on the perception of donors.

The different processes of egg and sperm donation may influence how much agencies and recipients objectify the donor. Almeling (2011) suggested this as a possible reason behind gender differences in gamete donation. Egg donation requires minor surgery and synchronizing reproductive cycles between the donor and recipient, while sperm donation only requires masturbation without any contact between the donor and recipient. The more intimate process of egg donation leads donors to be more salient in the minds of the agency workers and recipients while they consider sperm to be more of a product separate from the donor. Robertson (2014) predicted that egg freezing would lead to more objectification of donors because it would separate eggs from the donor in a similar way to sperm since synchronization is no longer necessary.

My results support Robertson's (2014) prediction. Frozen egg banks generally show patterns in between fresh egg donation agencies and sperm banks. They were more likely than fresh egg agencies to promote their screening as selective and their donors as high quality while they are less likely to require altruistic motivation. But frozen egg banks are still less likely to embrace objectification than were sperm banks. Separating the gamete from the individual influences objectification, but it is not the only factor.

Another issue that could complicate these findings is that there is a difference in who buys sperm compared to eggs. Egg donor recipients are more likely to be older, married, and heterosexual while most sperm donor recipients are single women or same-gender women couples (Spar 2006). These different family types approach ART in different ways. Heterosexual families are more likely to keep donation a secret from the donor-conceived child in order to

appear as a "normal" family (Indekeu et al. 2013; Freeman et al. 2016; Wyverkens et al. 2017). In contrast, single women and queer families are more likely to tell their children they used a donor due to greater openness with non-traditional family configurations and their lack of an option to pretend to be a heterosexual, two-parent family (Freeman et al. 2016).

These different approaches to using ART could influence how the industries advertise and screen their donors. Heterosexual families care more about secrecy and thus care more about finding a donor who resembles the couple. In contrast, single women and queer families may care less about resemblance since secrecy is less of an issue. Not having to "match" the appearance of their partner may mean these families are more likely to trait shop and search for donors with desirable characteristics. Egg and sperm donation agency's policies and advertisements may reflect these different preferences with egg donation agencies focusing on resemblance and supportiveness while sperm banks advertise for trait shopping and quality of donors.

The differences in agency's comfort with eugenic messaging are likely influenced by sexist attitudes as well. As discussed earlier, fatherhood historically and today is based on genetic ties much more than motherhood is (Rothman 1989; Moore 2007). This leads sperm donation to be more threatening to fatherhood identity than egg donation is to motherhood identity (Wyverkens et al. 2017). These fatherhood beliefs may also lead to greater comfort in emphasizing the genetic potential and quality of sperm donors – through the language of genetic competition and claims of donor superiority.

Gendered eugenics relies on sexist ideologies, where a culture values certain traits more in men than in women. The differences I found between egg and sperm donation reflect historical attitudes of femininity and masculinity. The only physical trait that egg donation

agencies required more than sperm banks was that donors have a certain BMI. This matches hegemonic feminine ideas where thinness is attractive for women, while it is not as big of a deal for men. Sperm banks are more likely to require donors to be a certain height and level of education. Both are traits associated with masculinity and match historical eugenic campaigns indicating that sexism and eugenics are continuing to intersect by influencing modern reproductive technology (Levine 2017).

6 CONCLUSIONS

Studying the gamete donation industry is important because of how much the industry is growing and how the industry can inform our knowledge in the broader topics of sexism, reproductive stratification, and new eugenic ideology. The current commercialized gamete industry demonstrates one way in which sexism is still highly relevant in today's world, especially concerning reproduction and parenting.

Through addressing RQ1, I found that sexism plays a role in the different requirements egg and sperm donation agencies place on their donors. Egg donation agencies are more likely to impose requirements that relate to donors' personal character, while sperm banks are more likely to focus on their donors' physical traits or education. Through addressing RQ2 and RQ3, I found that egg and sperm donation agencies also communicate differently to recipients and potential donors. Sperm banks are more likely to communicate in ways that advocate eugenics and commercialization, while egg donation agencies avoid eugenic connotations and focus on support. Frozen egg banks communicate in ways that are similar to frozen sperm banks and fresh egg donation agencies by advocating eugenics and commercialization in some ways while avoiding it in others. This is likely due to how freezing gametes, thus separating them from the

individual, leads to greater objectification. The other differences in sperm and egg donation practices are likely due to the different audiences who use sperm versus egg donation and sexist perceptions of gamete

In order to tease apart these potential influences, there are multiple areas future researchers should study. One is frozen egg banks, which have not become popular until the last couple of years (Robertson 2014). These egg banks seem to operate differently than traditional fresh egg donation agencies. They may eventually overtake fresh egg donation agencies as the primary method that egg recipients use (Sunderam 2018). Studying these banks is essential to understanding the current gamete donation industry and can provide more knowledge on how the process of separating tissue from an individual changes attitudes toward donation.

Another area for future research is comparing the differences between recipients of egg and sperm donation as well as different family types – heterosexual, single parents, and queer families. Learning how each approaches the gamete industry helps inform us how much gamete differences are due to bias on the agency's side, bias on the recipient's side, or different preferences for family types. Researching these different family types and recipients would also help with practical knowledge of how to best support these individuals when they look to ART to create their families.

The gender differences in gamete banks have implications for the future of gene-editing technology and other ways of producing "designer babies." It shows how ideas of genetics and sexism intersect. The higher importance of genetics to fatherhood leads to greater comfort in objectifying sperm donors. The different ideas of desirability in traits based on masculine and feminine norms leads to different standards in who is a desirable sperm or egg donor. These biases in the gamete industry bolster and normalize sexist ideas. If these ideas continue as gene-

editing technology becomes more accurate and available, then it could lead to a future where people choose their children's traits based on their sex. This would lead to increasing gender differences in potentially harmful ways and shows another reason why individuals and governments need to be wary of current and future gene-editing technology.

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