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The Social Implications of Assisted Reproductive Technologies:

An Analysis of Feminist Discourse and Popular Media

Charlotte S. Buswick

History

Colby College

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ACKNOWLEDGEMENTS

If you had told me as a first-year that I would be writing an honors thesis for the history department, I would've been skeptical. I came into Colby unsure of myself, my abilities, and my major. Taking classes in as many departments as I could, I sought to find the area of study that made the class period feel like it flew by. I found this in my first history class with Professor van der Meer. His engaging lectures and passion for his work and his students inspired me. In gaining so much from just my first history course, I was eager to take more.

Since then, I have learned so much from the faculty in the Colby History Department and feel so grateful they played a part in shaping my college experience. During my time taking their courses, I developed more confidence both inside and outside of the classroom. This would not have been possible without their wonderful guidance, knowledge, and support. Special thanks to Professors van der Meer, Weisbrot, Taylor, and Snow. I thoroughly enjoyed getting to learn from all of you.

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INTRODUCTION

Over the last fifty years, the United States has seen many changes in the landscape of women's reproductive autonomy. Between laws over birth control, abortion access, and fertility services, these changes are nowhere more evident than in the *Dobbs v. Jackson* court decision in 2022 that overturned *Roe v. Wade* (1973). In addition, not only did legal and political landscapes change, but the last half-century saw rapid development in reproductive technologies – supporting women's rights to both *have* a child and *not to have* a child. Since their popularization in the 1980s, assisted reproductive technologies, or ARTs, saw the buildout of a massive global industry concerning infertility. After the first IVF birth in the United States in 1981, the number of infants conceived via ARTs has increased to 79,942 births in 2020 alone.[1] As fertility technology advanced, it only became a more popular option for people seeking parenthood. However, over the decades, as more and more people have sought ARTs to fulfill their desire to have a child, feminists have raised questions over their implications for women. In a rich debate that has gone on since their introduction to the market, scholars have argued whether or not ARTs expand or limit women's reproductive autonomy.

ARTs are commonly thought of as a technology in the interest of women. However, this image most frequently invokes one of cisgender women, and in practice, many others benefit from these fertility services as well. It is important to note that using the term "women" does not include all people who are affected by questions of reproductive rights, infertility, and gender roles. There are AFAB (assigned female at birth) people who can anatomically have children but do not identify as women. There are those who identify as women but cannot anatomically have children. In this thesis, I utilize both gender-neutral language and the general term "women" when discussing those who use and are implicated by the use of assisted reproductive technologies. However, I do not want to

[1] "2020 National ART Summary | CDC," February 21, 2023, https://www.cdc.gov/art/reports/2020/summary.html.

continue using the latter term without acknowledging the existence of the other groups that this technology affects.

As reproductive technology develops, laws regulating its use and implementation continue to lag slowly behind. This results in inequitable access to ARTs and developments being made in the industry without consideration of some of the broader social implications in question. The bodies of women and AFAB people have long been policed in order for others to gain social control in many societies. While reproductive technologies should, in their essence, give more autonomy over reproduction to the people who use it, this, unfortunately, has not always been the case. Therefore, while advances in assisted reproductive technologies have popularly been deemed "the liberators of twentieth-century women," they have, in fact, "been a double-edged sword" as well.[2] Questions of accessibility for these technologies create another set of barriers for achieving women's bodily autonomy. Additionally, the conversation around these technologies, reproductive rights, and infertility in the United States continues to shape women's role in our society. A question that unfolded in the 1980s when ARTs broke onto the scene had to be investigated and was well posed by feminist author Michelle Stanworth: "In contemporary societies, where women not only bear children but are defined predominantly in terms of their reproductive capacities, what impact will change in reproduction that may accompany the new technologies have on women's lives?"[3]

In the early days of the ART industry, many feminist scholars had a net negative outlook on what these technologies meant for women. One of the first pieces of scholarship to criticize ARTs was *The Mother Machine: Reproductive Technologies from Artificial Insemination to Artificial Wombs* by Gena Corea, published in 1985. Corea argued that in the male-dominated field of obstetrics and gynecology,

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[2] Michelle Stanworth, "Reproductive Technologies and the Deconstruction of Motherhood," in *Reproductive Technologies: Gender, Motherhood and Medicine* (Minneapolis: University of Minnesota Press, 1987), 15.
[3] Michelle Stanworth, "Introduction," in *Reproductive Technologies: Gender, Motherhood and Medicine* (Minneapolis: University of Minnesota Press, 1987), 2.

"the 'new' reproductive technologies will enable [men] to actually take over the life-giving powers of women," which will fulfill "a male need to control women's procreative power."[4] Therefore, from Corea's perspective, reproductive technologies were a vehicle of the patriarchy to exercise power over women. While this was an argument of its time that has since been refuted by many scholars, its reception during the 1980s and onwards allows us to track how ideas surrounding ARTs have changed.

Many feminist scholars pointed out the importance of situational context in judging the value of ARTs. For example, these technologies were a game-changing device in queer family-making and allowed members of the LGBTQ+ community to have children in various ways that were previously unfeasible. On the other hand, reproductive technologies have posed many new questions for religious communities, and denying people access to ARTs through religious law is another form of reproductive oppression. Assisted reproductive technologies were a profound development for many child-seekers. Simultaneously, they did not come without complex effects on society. One thing that was made abundantly clear throughout my research, however, and was well-put by Loretta Ross and Rickie Solinger, authors of *Reproductive Justice: An Introduction*, was that "no matter what kinds of regulations the government, the church, the family, or other authorities created, girls and women have always done what they could to shape their own reproductive lives."[5] No matter whether or not ARTs were seen as good or bad, it was undeniable that women did everything they could to adapt fertility technology to their own needs. Additionally, these technologies allowed many people to build families who could not beforehand. While parts of this thesis and the arguments of some feminist scholars may have concerns over the questions that reproductive technologies raise, the inherent life-giving powers of these technologies and the joy they bring to many families around the globe cannot be

[4] Gena Corea, "Reproductive Control: The War Against the Womb," in *The Mother Machine: Reproductive Technologies from Artificial Insemination to Artificial Wombs* (New York: Harper & Row, 1985), 310, 303.
[5] Loretta Ross and Rickie Solinger, "A Reproductive Justice History" in *Reproductive Justice: An Introduction* (Berkeley: University of California Press, 2017), 11.

ignored. It is important to note that these criticisms are of the conditions in which reproductive technologies are employed and not of the actual people themselves who use them to build their families.

In this thesis, I will argue that the feminist discourse around ARTs took a more positive turn in recent decades – shifting away from ideas like those of Corea to one that views ART usage as a way for women to take back control of their infertility experience. I compared this scholarship with popular media and obtained my primary sources from the *Women's Magazine Archive* available through the Colby College Libraries. I looked at portrayals of ARTs in women's magazine publications such as *Cosmopolitan*, *Good Housekeeping*, and *Ladies' Home Journal*. In my comparison, I found that the ideas of feminists were reflected in the popular discourse of the time. In addition to this discourse analysis, I also used a science, technology, and society (STS) studies lens to look at these arguments, and how this lens could be a tool in shaping the future of assisted reproductive technologies. This chapter includes a literature review of both my secondary and primary sources, an overview of my theoretical frameworks, and a brief history of ARTs. The literature review will help situate my argument within the broader context of ART scholarship and show how women's magazines can help us better understand the concurrent feminist discourse. My explanation of the theoretical frameworks I use will further discuss how I used an STS lens to form my argument. Lastly, the historical review of the development of ARTs helps readers contextualize the growth of the industry, which will be useful when reading later chapters.

Literature Review

Historiography of Assisted Reproductive Technologies

The scholarship on the history of reproductive technologies spanned from developments made in the last decade all the way back to the Antebellum South. While my research was mainly

focused on IVF, contextualizing this among the broader scope of the history of ARTs was important for understanding the technology's impact and place in the field of gynecology. Donna J. Drucker's *Fertility Technology* (2023) provided a comprehensive overview of the development of ARTs, beginning with the unethical use of enslaved black bodies in the United States for the pioneering of the obstetrics field. She moved through time to the development of IVF and other modern ARTs, as well as how the implementation of these technologies was complicated due to social constructs and what direction it could take in the future.

Literature on the historical background of IVF specifically was central to my research as well. *Pandora's Baby: How the First Test-Tube Baby Sparked the Reproductive Revolution* (2004) by Robin Marantz Henig was a valuable book on the history of IVF and how the public's perception of "test-tube babies" had evolved since its popularization. A large focus of Henig's book is on the *Del-Zio v. Vande Wiele* case in 1978*,* which (as discussed further chapter two) exemplified how the regulations and laws around ARTs often majorly lagged behind the application of the technologies themselves. In a similar vein, "Towards the Two 1978 Births" from *IVF and Assisted Reproduction* (2020) by Sarah Ferber, Nicola J. Marks, and Vera Mackie offered insight into the development of IVF technology, highlighting both the more well-known early IVF births in the US and the UK, but also the simultaneous and less-credited developments in India.

While regulations around new reproductive technologies often could not keep up with their implementation, scholars did not waste any time in publishing their critiques of the social consequences of ARTs. Scholarship surrounding what ARTs meant for motherhood, gender, and kinship relations has proliferated since the 1980s. Marcia C. Inhorn and Daphna Birenbaum-Carmelli's article "Assisted Reproductive Technologies and Culture Change" (2008) addressed the impacts of ARTs as an entanglement of science and society. They addressed the "arenas of constraint" that limit

access to ARTs, including "structural, ideological, and practical obstacles and apprehensions."[6] As new ARTs are continuously developing, this historiography is by no means done being written.

Feminist Discourse

The feminist literature on the social implications of assisted reproductive technologies presented an array of arguments on whether or not these technologies were to the benefit women. The overall tone of the feminist scholarship on ARTs in the 1980s and 1990s could be summarized as ambivalent. There was seldom an agreed-upon value judgment of ARTs; there were few analyses that deemed them expressly good or expressly bad. Even authors writing for the same anthologies showcased differing opinions surrounding ARTs and their impact on women's roles in society. This debate has continued into present-day as technology has advanced and regulations have emerged.

Scholarship on ARTs from the 1970s was more limited than in future decades. While other forms of fertility technology like artificial insemination were regularly used, feminist debate really caught on after the first IVF birth in 1978. However, there were still some important perspectives to note. The first is that of Shulamith Firestone, author of *The Dialectic of Sex* (1972) and a prominent feminist author who saw reproductive technology as a liberating tool for women. As explained by Juliette Zipper and Selma Sevenhuijsen in their chapter of Stanworth's 1987 anthology titled "Surrogacy: Feminist Notions of Motherhood Reconsidered," Firestone believed that ARTs could "free [women] from the burden of biological motherhood."[7] She argued that motherhood was how the patriarchy kept women under its control. She also stated that pregnancy was "barbaric," and that the eventual development of ectogenesis – the fertilization and growth of the embryo completely

[6] Marcia C. Inhorn and Daphna Birenbaum-Carmeli, "Assisted Reproductive Technologies and Culture Change," *Annual Review of Anthropology* 37 (2008): 180.
[7] Juliette Zipper and Selma Sevenhuijsen, "Surrogacy: Feminist Notions of Motherhood Reconsidered," in *Reproductive Technologies: Gender, Motherhood, and Medicine*, ed. Michelle Stanworth (Minneapolis: University of Minnesota Press, 1987), 120.

outside of the human body – would free women from the constraints of their reproductive duties.[8] Another major topic of the conversation during the 1970s was the sex/gender system. This concept was created by feminist scholar Gayle Rubin to explain how conventions of sexuality were socially produced. As described by Sarah Franklin in her book *Biological Relatives* (2013), Rubin defined this system as "the set of arrangements by which a society transforms biological sexuality into products of human activity, and in which these transformed needs are satisfied."[9] Firestone and Rubin made similar claims – that the social obligations that had been put on women because of their reproductive capacities upheld gender inequality. A worry among feminists was that reproductive technologies would further this notion; as it became easier to have children with ARTs, more and more women were able to become mothers which would further confine them to their reproductive capacities.

The feminist discourse over ARTs really picked up in the 1980s as IVF became popular. One of the most prominent pieces of literature to come out of this decade was Gena Corea's *The Mother Machine: Reproductive Technologies from Artificial Insemination to Artificial Wombs* (1985). As noted previously, Corea argued that ARTs were the materialization of patriarchal desires to control women and their reproductive capacities. As one of the first major claims over reproductive technologies and their impact, this book was highly significant in the feminist discourse over ARTs and also provided ideas that other feminists could argue with and/or build upon. Additionally, Michelle Stanworth's anthology *Reproductive Technologies: Gender, Motherhood and Medicine* (1987) was another significant book of this decade in feminist scholarship on ARTs. With contributions from scholars such as Annie Oakley and Rosalind Pollack Petchesky, this volume was supposed to offer alternative views to Corea's. However, as previously stated, feminist scholars were historically ambivalent about ARTs. This book gave some

[8] Shulamith Firestone, *The Dialectic of Sex: The Case for Feminist Revolution* (New York: William and Morrow Company, 1972).
[9] Sarah Franklin, *Biological Relatives IVF, Stem Cells and the Future of Kinship* (Durham: Duke University Press, 2013), 161.

appraisal to reproductive technologies, but ultimately, many of the authors furthered the argument of ARTs as an attack on women's autonomy by the patriarchy.

In the 1990s, the feminist literature on ARTs expanded and began to grow more complex as feminists recognized their impact on things like kinship relations and gender. Marilyn Strathern, who is seen as the founder of the scholarly field of ARTs, published her book *Reproducing the Future: Essays on Anthropology, Kinship, and the New Reproductive Technologies* in 1992. A significant publication for the field, *Reproducing the Future* discussed the nature/culture divide and how ARTs have changed our meanings of relatedness. She also addressed the emerging concept of the separation of biological and social parenthood – something that feminists vied to popularize for decades, and today is acknowledged more widely with the rethinking of kinship relations brought about by ARTs. Additionally, one of the most significant scholars in the study of reproductive technologies came on the scene in the nineties: Sarah Franklin. Her first book publication, *Embodied Progress: A Cultural Account of Assisted Conception* (1997), introduced the idea of IVF being what she calls a "hope technology." The feminist scholarship of the 1990s, while still ambivalent, also began to draw out some of the more positive aspects of reproductive technologies. Furthermore, scholars started to acknowledge the limitations of past critiques of ARTs. This signified a shift in feminist assessment of reproductive technologies as they developed.

Lastly, the feminist scholarship of the 2000s further built upon ideas introduced in the nineties and aimed to emphasize how the social conditions that ARTs exist in are critical to the impact and conditions they create for women. Charis Thompson's chapter "Strategic Naturalizing: Kinship, Race, and Ethnicity" from the anthology *Relative Values: Reconfiguring Kinship Studies* (2001) highlighted the ways ARTs can produce both socially conservative and liberating conditions at the same time. She disagreed with Corea's argument that ARTs were dehumanizing but claimed they were a humanizing technology. Furthermore, with the separation of biological and social parenthood, Thompson pointed

out the importance of intent when assessing who the "real" mother is in situations of donor-egg IVF and gestational surrogacy. In addition, Franklin continued to publish valuable scholarship in the aughts and on. Her 2013 book *Biological Relatives: IVF, Stem Cells and the Future of Kinship* addressed the normalization of technologies like IVF and how that shaped their impact on women. *Biological Relatives* attempted to capture all of the contradictions of IVF while pointing out the ways in which it also helped us question older social structures of sex, gender, kinship, marriage, etc. Franklin argued that this is a positive aspect of ARTs, as we can bring these structures into the spotlight and highlight the limitations they imbibe on society. Like the 1990s, the feminist literature of the 2000s began to take a more speculative approach to the structures and preconditions surrounding the ARTs that may have been hindering women. It also crafted a more positive outlook on reproductive technology that allowed women to take ARTs back into their own hands.

Primary Source Archive

Compiled by the online information-content company ProQuest, the *Women's Magazine Archive* is a database of popular women's magazines from the late-nineteenth century to the twenty-first. These publications are recognized as critical primary sources in interpreting the historical and cultural conditions of the past as they display assumptions of gender roles and norms in society at the time they are published. Covering topics such as family life, home economics, health, fashion, careers, etc., this archive provided insight into the time that ARTs were being developed and how they were received. I was able to access this archive through the Colby College Libraries website. For this thesis, I looked at magazine articles portraying ARTs like IVF and tracked how they evolved throughout the decades in comparison with the feminist scholarship. The women who were using the technologies discussed by feminists were often reading publications like *Cosmopolitan, Woman's Day,* and *Ladies' Home Journal*. Since they would be influenced by the ideas in the articles they read, magazine portrayals and

attitudes towards ARTs were valuable sources in investigating the social implications of these technologies on women. As I will argue and show in my discourse analysis, some of the ideas discussed in the feminist literature can be reflected within publications in this archive. A lot can also be extrapolated from what is *not* included or discussed by these magazine articles. The omission or infrequency of certain topics reflected the values of the magazine publications, and therefore what they thought would be attractive to their readership.

Theoretical Frameworks

Sociotechnical Imaginaries

The term "sociotechnical imaginary" was first coined by STS scholar Sheila Jasanoff and has been quickly adopted by the field as a significant theoretical concept. It was first used in an article written alongside Sang-Hyun Kim in 2009, and the definition was later updated in the authors' 2015 book *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*. Jasanoff and Kim defined sociotechnical imaginaries as "collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated and shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology."[10] Therefore, visions for a desired future propelled by innovations in science and technology can be an important tool for institutions to keep up social order and attitudes. The authors saw imagination as a "crucial reservoir of power and action, lodge[d] in the hearts and minds of human agents and institutions."[11] Shared imaginations can unite people to form attachments to specific futures. This collective attachment can then be useful to institutions as they further political, technological, national, and other

[10] Sheila Jasanoff and Sang-Hyun Kim, "Future Imperfect: Science, Technology, and the Imaginations of Modernity" in *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power* (Chicago: The University of Chicago Press, 2015), 4.
[11] Ibid, 17.

agendas. Even if the desired future is never fully achieved, the vision of it still powers technological progress and the movement towards an idealistic social order.

Another important aspect of the sociotechnical imaginary is the idea of coproduction. Jasanoff and Kim stated that coproduction "draws together our scientifically and culturally conditioned perceptions of reality, [and] our capacity to create new collectives through technological as well as social means."[12] People change their expectations of new science and technology when they begin to interact with them. Coproduction is a framework that is "symmetrically concerned with mutual emergences in how one thinks the world is and what one determines it ought to be."[13] Collective visions for the future are shaped by science and technology, just as developments in science and technology are shaped by collective desired futures. Therefore, sociotechnical imaginaries and coproduction work hand-in-hand; we shape technology, and technology shapes us. Both of these concepts will be important in drawing parallels to the work of Sarah Franklin and the study of IVF.

Hope Technologies

The concept of a "hope technology" was coined by anthropologist Sarah Franklin in her 1997 book *Embodied Progress: A Cultural Account of Assisted Conception*. Franklin argued that IVF is a hope technology, as the process has a "promissory logic of rewarding hard work, determination and planning with a future family plays an important role in establishing new narratives and norms for desired and imagined fertility futures."[14] While there are several reasons why someone may decide to go the IVF route for addressing their infertility, Franklin found that one of the main appeals for this technology is how it provides a sense of direction in someone's infertility journey. IVF does not

[12] Ibid, 14.
[13] Ibid.
[14] Sarah Franklin, "Introduction to the Second Edition" in *Embodied Progress: A Cultural Account of Assisted Conception*, 2nd ed. (New York: Routledge, 2022), 8.

promise a baby, but it does promise the feeling of "getting somewhere, doing something and progressing toward a much-desired goal."[15] It offers a more hopeful path forward. Many of the people that Franklin interviewed for her book note that even if IVF fails, many feel better knowing they exhausted all of their options, can move on feeling more at peace with their childlessness, and perhaps pursue other ways to achieve parenthood (such as adoption). Therefore, Franklin argued the decision to pursue IVF is "self-protective" for many people.[16] Developments in ARTs and IVF have shaped the modern-day infertility experience. Additionally, they have changed society's attitudes on the impact of IVF on women, as I will discuss. As stated by Franklin, IVF can be studied as a "revealing microcosm of the social world in which we live."[17] The concept of hope technologies and how they have affected women's experiences with infertility is therefore a valuable framework in looking at the implementation of ARTs and how they impact both the individual users and collective ideas of assisted conception.

Drawing Connections

Looking at these concepts together, it is clear that Jasanoff, Kim, and Franklin were suggesting similar ideas about the impact and development of science and technology. In this paper, I will be arguing that Franklin's concept of "hope technology" is, in essence, a form of Jasanoff's "sociotechnical imaginary." Furthermore, as feminists have been historically ambivalent about reproductive technologies, Franklin's idea provided a positive and empowering view of ARTs and how they can impact the experience of infertility. The sociotechnical imaginary is a powerful tool in how it shapes collective ideals for the future, therefore supporting developments in science and technology. Franklin argued that IVF, or this hope technology, helps many women in their experience

[15] Ibid.
[16] Ibid, 11.
[17] Ibid, 13.

with infertility due to the way it changes the narrative of its users; in the way the sociotechnical imaginary can become a hopeful orientation towards a future goal, IVF acts as a hopeful orientation towards a future child. All those dealing with unwanted childlessness have specific visions of a future with children, and the idea of hope technology helps them move closer to that (or at least feel that they are getting closer). This is why IVF is so popular, and therefore why new assisted reproductive technologies have continued to be invested in and built up as an industry.

Additionally, Jasanoff, Kim, and Franklin all discuss the significance of coproduction in both frameworks of sociotechnical imaginaries and hope technologies. Franklin argued that ARTs and the attitudes and social orders surrounding them are coproduced. She stated that "the relationship between IVF and infertility is not so much a simple one-leads-to-the-other equation but instead a more dialectical reaction."[18] This is further proof that hope technology could be considered a form of the sociotechnical imaginary. Jasanoff and Kim state that "technological systems serve… a doubly deictic function."[19] Furthermore, "the materiality of technoscience… is surely implicated in the stability and instability of social arrangements, but just as important are the belief systems out of which those materialities emerge and which give them value and meaning."[20] The significance of coproduction in both of these theoretical frameworks is indicative of how these scholars were discussing very similar ideas – Jasanoff and Kim more broadly, Franklin specifically in application to IVF. Therefore, the concept of hope technology has created more positive evaluations of ARTs. This technology does not "cure" infertility, but more treats the desire to have a child. Users of IVF who know they have done all they can to try to have a biological baby are better able to cope with their childlessness. This hope technology is a form of the sociotechnical imaginary as it spurs further

[18] Ibid, 9.
[19] Jasanoff and Kim, "Future Imperfect," 22.
[20] Ibid.

advancements in science and technology, while simultaneously helping people move towards a desired vision for their future.

A Brief History of ARTs

Techniques and technology to help people struggling with infertility have been developing for centuries. In the United States, this history usually starts in the mid-nineteenth century with the publication of *Clinical Notes on Uterine Surgery* (1866) by Dr. J. Marion Sims. His descriptions of artificial insemination attempts using a syringe and a cannula "had a distinct technological and practice-based impact on US and European gynecology."[21] However, Sims' accomplishments were all made with unethical practices. This "father of modern gynecology" depended on enslaved Black women in the South – patients who could not give consent – to develop his techniques and procedures. Sims was best known for his artificial insemination technique, the invention of the duck-billed speculum, and his most famous procedure, the vesicovaginal surgery (which repairs vesicovaginal fistulas, a complication that comes from obstructed childbirth).[22] In recent years, many people have worked to rewrite the history of Sims' work (his Central Park statue was removed in 2018) to give more credit to the enslaved women he worked on. Ferber et al. called these women the "moral pioneers" of the field; without having bodies to experiment on, Sims could not have developed the practices that he is most famous for.[23] These nonconsensual practices that enabled men to further their medical careers were not uncommon in the history of gynecology and obstetrics. Before the mid-nineteenth century, childbirth was commonly facilitated by doulas. However, the 1800s brought the medicalization of the

[21] Donna Drucker J., *Fertility Technology* (Cambridge, Massachusetts: The MIT Press, 2023), 18.
[22] Ibid.
[23] Sarah Ferber, Nicola J. Marks, and Vera Mackie, "Towards the Two 1978 Births," in *IVF and Assisted Reproduction* (Singapore: Springer Singapore, 2020), 46, https://doi.org/10.1007/978-981-15-7895-3_2.

field of gynecology, excluding women from the practice and male doctors becoming the knowledge-keepers of the female reproductive system.

Another aspect of this was the criminalization of abortion, also spearheaded by medical professionals. Abortions, legal at the beginning of the nineteenth century, raised fears in the male-dominated medical field that the use of this procedure by white, middle-class women was jeopardizing the white majority of the United States. This then caused concerns over the white man's political power being weakened. As a result, physicians campaigned for antiabortion laws that went into effect in the mid-1800s, but they made one exception: "physicians could perform therapeutic abortions if pregnancy and childbirth threatened the woman's life."[24] This put the legal facilitation of this procedure in the hands of male doctors. This is an essential piece of history in the field of gynecology and shows the history of antiabortion laws in the United States not as the way things have always been but as a racist and sexist set of policies. Formally known as the "Physician's Crusade," this signified a new partnership between medical professionals and the state, who together, "won the power to set reproductive policy."[25] The impact of this moral crusade can still be seen in the abortion politics of today, nearly two centuries later.

More kinds of fertility technologies and techniques were developed throughout the twentieth century. The basal body temperature test (BBT) helped determine the timing of ovulation. Body temperatures rise between two-tenths and one degree above their normal state when ovulation is about to occur; this test taken immediately after waking became popular in the 1930s and familiarized many

[24] Leslie J. Reagan, *When Abortion Was a Crime: Women, Medicine, and Law in the United States, 1867-1973* (Berkeley: University of California Press, 1997), 13.
[25] Ibid, 14.

Figure 1 Courtesy Center for the History of Medicine, Countway Library of Medicine, Harvard University.

people with the importance of ovulation timing.[26] The Rhythmeter fertility planner (as seen in figure one), distributed by Planned Parenthood in 1944, was also designed to help women track their ovarian cycles.[27] Meanwhile, efforts to make artificial insemination (AI) – also known as intrauterine insemination (IUI) – more effective continued. This technique involves directly inserting sperm into the uterus. It is typically used for couples struggling with male infertility due to low-quality/motility sperm or single women and lesbian couples who are trying to get pregnant via donor sperm.

While the term ARTs encompasses a wide variety of fertility technologies, the one that I will be primarily focusing on for this paper is in vitro fertilization, or IVF. This is the process known colloquially for producing "test-tube babies," as *in vitro* is Latin for "in glass."[28] For a heterosexual couple, IVF usually begins with the woman taking hormonal injections to increase egg production. During an oocyte retrieval surgery, doctors try to harvest as many eggs as possible to increase the patient's chances of conception. The eggs are then put in a petri dish with a substance mimicking uterine fluid, along with collected sperm. They are observed for a couple of days, and the lab technicians observe which embryo looks the strongest. Then, one or multiple embryos (depending on

[26] Drucker, *Fertility Technology*, 44.
[27] Ibid.
[28] Drucker, *Fertility Technology*, 59.

the clinic) are then inserted into the woman's uterus for implantation. Other viable embryos can be cryopreserved to be used in future rounds of IVF.

The development of the IVF technique was a long-standing process that was being attempted by multiple doctors worldwide. The very first test-tube baby was Louise Brown, born in the UK in 1978. Her birth marked a new era of infertility technology and launched the doctors credited for making it possible – Patrick Steptoe and Robert Edwards – into medical stardom.[29] Ten weeks later in India, Kanupriya Agarwal became the world's second IVF baby, and first from a cryopreserved embryo.[30] Resulting from the work of Subhas Mukerji, this landmark development was met with skepticism (as opposed to the celebration of achievement for Steptoe and Edwards) and is often left out of the IVF narrative. Mukerji did not seek formal approval for his research and was outcasted by the Indian medical community and government. Due to this, he and his colleagues often still go unrecognized despite their similar achievements to their British counterparts. The first IVF clinic in the United States opened in 1979 in Norfolk, Virginia under the direction of Howard and Georgeanna Jones. The Eastern Virginia Medical School facilitated their first IVF birth (and the first in the country) in December of 1981.

Fertility technology and new techniques for assisted reproduction continue to be developed today. A more recent development within IVF is intracytoplasmic sperm injection, also known as ICSI. This is when the sperm is directly injected into the mature egg, as opposed to combining the gametes in a singular petri dish and letting them fertilize in standard IVF procedures. This is especially useful for those struggling with low sperm quality or amount.[31] Additionally, brand new fertility technologies are being researched all over the world. On example of this is in Japan, where scientists are at the forefront of the development of in vitro gametogenesis, or IVG. This process involves the

[29] Ferber et al., "Towards the Two 1978 Births," 27.
[30] Ibid, 52.
[31] Drucker, *Fertility Technology*, 196.

creation of "artificial" eggs and sperm from any cell in the human body, making it possible for anyone (single, gay, trans) to have a biological child.[32] Already controversial in its development, IVG opens up new possibilities in assisted reproduction and represents a future for fertility technology rife with ethically complicated consequences.

Thesis Overview

I have divided this thesis into four chapters. Chapter one, "The 'Double-Edged Sword' of IVF," discusses how the implications of this technology changes significantly based on the context it is situated in. While ARTs have been a positive development for many people, they have also created some barriers. The intersection of ARTs with race, sexuality, and religion will be explored in this chapter. I also discuss the conversation around "choice" within the landscape of reproductive autonomy and how that excludes many groups of people. This chapter highlights the nuanced ways ARTs exist in our society today and how their social impact cannot be defined as solely positive or negative.

Chapter two, titled "Early Feminist Thinking on ARTs," addresses my findings from my discourse analysis of scholarship and popular media in the 1970s and 1980s. Split into two sections respectively, the section on the seventies addresses conversations around reproduction before the introduction of IVF. The second section on the eighties discusses the popularization of IVF and how feminists took a considerably more critical view of ARTs as IVF became more widely available. In this chapter, I attempt to show how this early scholarship frames ARTs to contrast that with the framing in later decades.

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[32] Rob Stein, "A Reproduction Revolution Is on the Horizon: Vitro Gametogenesis or IVG," *NPR*, September 27, 2023, sec. Science, https://www.npr.org/2023/09/27/1201956964/a-reproduction-revolution-is-on-the-horizon-vitro-gametogenesis-or-ivg.

Chapter three, "A Turning Point," discusses my discourse analysis findings from my research on the 1990s and 2000s-2010s. The first section on the nineties addresses ambivalence about the commercialization of these technologies and the ways in which feminists begin to extrapolate more positive implications of ARTs. The subsequent section on the aughts and tens builds on these ideas, discussing the normalization of ART usage and the slow fade of coverage of IVF in women's magazines.

Lastly, chapter four, called "Coproduction and Changing Definitions," uses the concept of coproduction to pull together my argument on the idea of the sociotechnical imaginary and how ARTs offer us new ways of looking at social structures that could be more inclusive. I conclude with this chapter in order to further glean the opportunities that ARTs offer us and how we can use the sociotechnical imaginary to shape the development of ARTs in the future.

In light of the more recent overturning of *Roe v. Wade* in 2022, my afterword "ARTs Post-Dobbs" discusses ARTs within the landscape of reproductive rights and how the *Dobbs v. Jackson* decision has harmful consequences for many people both trying to have and not to have children.

CHAPTER 1: THE "DOUBLE-EDGED SWORD" OF IVF

Since the first scholarship written on fertility technology, feminists have acknowledged the double-edged nature of ARTs. Reproductive technologies raised many unprecedented new questions for institutions that have had a stake in and/or seek to control reproduction in the United States and globally. This affected how easily for whom, and at what cost, ARTs were made available. Depending on the social context they are used in, this new technology has provided some groups with greater chances for having a child but has created another set of barriers for others. One example of these complexities of the implementation of ARTs was the way in which religious institutions reacted to them. ARTs have been a contested subject in Christianity. Take Ecuador, where many Catholics deemed ARTs socially acceptable on the grounds that God created this technology in order to help people have more children. Without him, reproductive technologies would not exist, and people should use them as he intended in their creation. However, not all Catholics share this perspective. The Vatican has firmly condemned the use of IVF since its increased popularization.[33] Roman Catholicism disapproves of IVF for a number of reasons; it sees the reproductive practice as one that takes place only within a heterosexual marriage, it sees embryos as human beings, and condemns any method of conception that "substitute[s] conjugal sexual intercourse."[34] Therefore, while ARTs have allowed many infertile Ecuadorian Catholics to have children, they simultaneously impose new limitations on Italian Catholics who wish to seek help with their fertility. It is for this very reason that scholar Charis Thompson argued that ARTs can produce both socially liberating conservative and socially liberating conditions at the same time.[35] While some scholars previously depicted the impact

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[33] Giulia Zanini, "Jesus Is in Favor: Catholicism and Assisted Reproduction in Italy," *Medical Anthropology* 38, no. 4 (May 19, 2019): 359, https://doi.org/10.1080/01459740.2019.1570186.
[34] Ibid.
[35] Charis Thompson, 'Strategic Naturalizing: Kinship, Race, and Ethnicity,' in *Making Parents: The Ontological Choreography of Reproductive Technologies* (Cambridge, MA: MIT Press, 2005), 145-178.

of this technology as black and white, Thompson showed it was more complex. Context is hugely important and changes the way technology is viewed, implemented, and legislated. Furthermore, while the white feminist movement centered the effort for reproductive autonomy around choice, this narrative "fail[ed] to address the complexities of reproductive oppression for women marginalized by class, race, nation, and immigration."[36] The LGBTQ+ community also faced struggles when trying to exercise their reproductive freedom, as homophobia and transphobia have prevented them from receiving equal access to healthcare. It is for these reasons that many feminist scholars over the decades have described the impact of ARTs as a "double-edged sword," a concept that I will further explore in this chapter.[37]

ARTs and Race

While ARTs can be life-changing and family-creating, only those with access and resources have benefitted from the treatments that new reproductive technologies have to offer. With the systemic oppression of Black people in the United States, they have not had the same opportunities to benefit from this care, nor have they necessarily been encouraged by the state to pursue means of family-building. One of the leading scholars on the intersection between ARTs and race is Dorothy E. Roberts. The chapter "Race and the New Reproduction" in her book *Killing the Black Body* (1997) discussed the devaluation of Black reproduction and how that has dissuaded the Black population of the United States from seeking ARTs.

For centuries, Black bodies have been controlled, policed, and medically experimented on in the United States. Due to this history (including but not limited to forced sterilizations and the Tuskegee syphilis experiment), "many Blacks harbor a well-founded distrust of technological

[36] Natalie Fixmer-Oraiz and Shui-yin Sharon Yam, "Queer(Ing) Reproductive Justice," in *Oxford Research Encyclopedia of Communication*, 2021, https://doi.org/10.1093/acrefore/9780190228613.013.1195, 3.
[37] Franklin, *Embodied Progress*, 175.

interference with their bodies and genetic materials at the hands of white physicians."[38] This is just one of the contributing factors as to why Black people have sought fertility treatment at a lower rate than their white counterparts – and it is *not* because Black people have less of a problem with infertility. In fact, Blacks have an infertility rate 1.5 times higher than whites.[39] This is due to the systemic racism that Black populations have faced, leaving them with poorer healthcare, working conditions, and less medical attention. Therefore, Black Americans are the population in the United States that would most likely benefit from these fertility services, and yet they are the least likely to seek them. Not only do Black populations have a justified distrust of the healthcare system, but high-tech approaches to fertility treatment are expensive. Women of color have more often faced financial barriers to receiving these services again, due to the systemic injustices.[40] In addition, receiving a fertility treatment like IVF is a long process that can be time and energy-consuming. As Roberts points out, it takes a certain type of lifestyle to be able to devote time to the "daily hormone shots, ultrasound examinations, blood tests, egg extraction and implantation, travel to and from a fertility clinic, and often multiple attempts – a luxury that few Black people enjoy."[41] Black people may not have been seeking IVF or similar treatments due to cost and time commitments that are less often a problem for their white counterparts. The double-sided nature of ARTs is evident when looking at these facts.

Unequal access to this technology has played a part in how ARTs can be co-opted for carrying out overt or covert eugenicist goals. When reproduction can be more closely controlled through the use of ARTs, certain people and institutions, therefore, have the ability to control *who* is reproducing. Just as ARTs can assist with birth, they can also prevent it. American studies scholar Marsha Darling

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[38] Dorothy E. Roberts, "Race and the New Reproduction," in *Killing the Black Body: Race, Reproduction, and the Meaning of Liberty* (New York: Pantheon Books, 1997), 260.
[39] Ibid, 252.
[40] Dorothy E. Roberts, "Race, Gender, and Genetic Technologies: A New Reproductive Dystopia?," *Signs: Journal of Women in Culture and Society* 34, no. 4 (June 2009): 792, https://doi.org/10.1086/597132.
[41] Roberts, "Race and the New Reproduction," 254.

claimed that ARTs are helping develop "eugenical population control strategies especially for low-income and poor women of color globally."[42] The idea that ARTs could be used to produce a baby with certain qualities, especially those associated with elite status (which might mean lighter skin, for instance), reinforces dangerous ideas that genetic traits reside in human beings based on their race. Scholar Amrita Pande – in her article "Mix or Match?: Transnational Fertility Industry and White Desirability" – called this process "strategic hybridization."[43] Through the use of egg donors, patients can choose to create babies that look a certain way in the hopes of making them more advantageous later in life. This ability to choose in the ART industry reinforces ideas about the biological meaning of race. People choosing donors based on specific traits for their babies implies that race is genetically encoded. Roberts then argues that "in a society in which Black traits are constantly devalued, a focus on genetics will more likely be used to justify limiting Black reproduction rather than encouraging it."[44] Since ARTs have been mainly available to the wealthy (and, in the US context, white), they could serve to reinforce existing social inequalities. The widening availability of ARTs and genetic selection has threatened to "intensify this opposition… of the opposing relationships of white women and women of color to reproduction-assisting technologies."[45] Scholar Rayna Rapp called this "stratified reproduction," and has been an evident danger in the unequal accessibility to ARTs.[46]

Even the advertising of ARTs has demonstrated the degree to which for-profit clinics have understood their eugenic potential. Roberts' article "Race, Gender and Genetic Technologies: A New Reproductive Dystopia?" highlighted how the marketing of fertility treatments was highly racialized. For decades, at the start of the popularization of IVF, only white babies were used to show the success

[42] Roberts, "Race, Gender, and Genetic Technologies," 784.
[43] Amrita Pande, "'Mix or Match?': Transnational Fertility Industry and White Desirability," *Medical Anthropology* 40, no. 4 (May 19, 2021): 335, https://doi.org/10.1080/01459740.2021.1877289.
[44] Roberts, "Race and the New Reproduction," 261.
[45] Ibid.
[46] Roberts, "Race, Gender, and Genetic Technologies," 783.

of reproductive technologies. While the images have diversified in more recent years, reproductive technology was first shown to be able to reproduce the "ideal" baby. Advertisements of egg donations boasted "doctoral donors with advanced degrees" and "other donors with special accomplishments and talents" under photos of white babies with blonde hair and blue eyes.[47] The marketing and use of ARTs could, therefore, lead to the continued devaluation of Black traits and the reinforcement of the false ideas that race is biological. Roberts also made an argument for how this reinforcement of the biological meaning of race impacted the ideology of what the American population should look like both in the present and the future. The marketing of fertility technology, along with popular media (as I will discuss further) sent harmful messages about the "relative value of Blacks and whites in America" – an ideology that "has [had] a real effect on social policy and consequently on the material conditions of people's lives."[48] This argument is similar to Jasanoff and Kim's discussion of the sociotechnical imaginary. They have argued that innovations in science and technology support a specific social order in the minds of a collective people. If fertility treatments like IVF are marketed to value white lives more than Black lives, this bolsters a vision of society where "white people deserve to procreate while Black people do not," meaning "the new reproduction may worsen racial inequality."[49] This is an example of the entanglement of ARTs and the sociotechnical imaginary as it specifically pertains to race. One can also see the potential harmful impacts of this technology on Black populations. While, as stated previously, there has been a diversification of fertility treatment marketing since Roberts published her scholarship, this does not address the fact that ARTs remain out of reach for so many Americans.

The inequity of ART usage was made visible not only in scholarship like that of Dorothy Roberts but also in women's magazines. These magazines and fertility treatments had something in

[47] Ibid, 788.
[48] Ibid, 283.
[49] Ibid.

common: they were primarily aimed at middle-class white women as a consumer base. The magazine *Essence* made up the small percentage of articles on infertility aimed at Black women that I found in my research. Their discussion of this technology did not omit the disparities of equal access at hand. A 1970 *Essence* article, "Danger Zone: Fallopian Tubes" by author Carl G. Rollins, discussed the issues of Black female infertility. He named pelvic inflammatory disease as a main culprit for infertility, with Black females as "its chief victims."[50] Furthermore, he went on to discuss how this was *not* a problem due to race but precisely due to socioeconomic inequality, recognizing that Black women "remain poorly informed… on the cause and proper treatment of this disabling female infection."[51] Rollins calling out this issue in a magazine was significant since, as discussed later, much of the articles written for a white female audience had little mention of socioeconomic status. Similarly, in "Coping with Infertility," published in 1994 by Martha Southgate, like Dorothy Roberts, Southgate pointed out how "Blacks don't seek out services to treat infertility as frequently as Whites."[52] Despite this, she urged Black women to seek support, both in fertility treatments and counseling to manage the emotions of it all. In a featured interview with fertility patient Crystal Lewis, she discussed her initial embarrassment over her fertility but later gave a hopeful

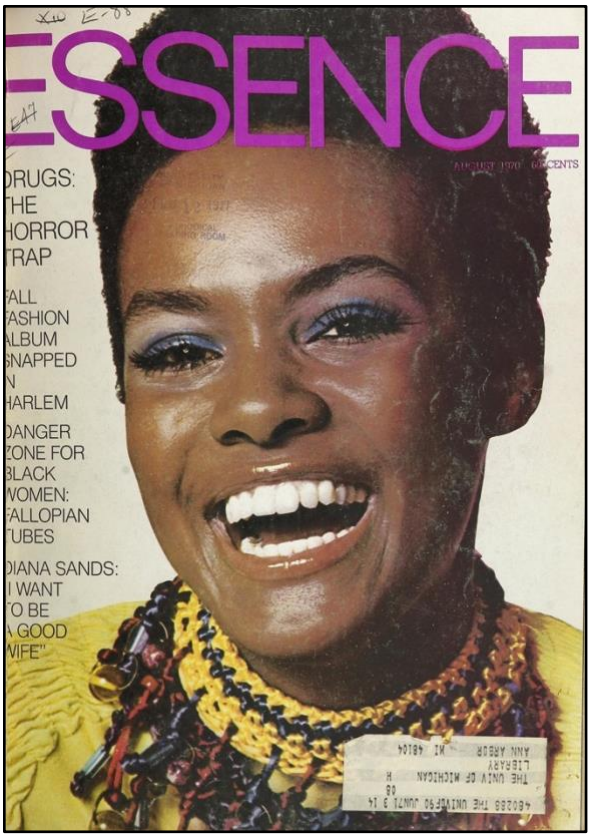

Figure 2 "Covers," *Essence* (New York, United States: Essence Communications, Inc., August 1970).

[50] Carl G. Rollins, "Danger Zone: Fallopian Tubes," *Essence* (New York, United States: Essence Communications, Inc., August 1970), 58.
[51] Ibid.
[52] Martha Southgate, "Coping with Infertility," *Essence* (New York, United States: Essence Communications, Inc., September 1994), 28.

statement to those with similar struggles: "Infertility is not something people should be ashamed of. See a doctor and find out what's going on. If you give it your best shot, that's all you can ask of yourself."[53] Southgate's article was one of encouragement for Black women to speak up about their infertility struggles. It is important to highlight that the articles I will discuss in later chapters largely leave Black women out of the conversation, making the work of *Essence* extremely valuable. While the reproductive technology discourse has diversified since the publication of these articles, there is still a long way to go in making ARTs an equitable tool for family-building of all races.

ARTs and Sexuality

Another context in which ARTs can be both constraining and socially liberating is in the use of ARTs by the LGBTQ+ community. While these technologies have had the possibility to help many people build biological families that could not previously, homophobic regulations have also prevented people from accessing them, creating more social barriers for the queer community.

Used in the right context, ARTs could be a liberating tool for queer people who previously had a more difficult time starting families. While ARTs developed rapidly and regulation of them lagged behind, it is true that in some countries, queer women may be implicitly or explicitly excluded from access to them. For example, in Japan, only married couples are allowed to legally undergo treatment. While the law does not overtly state that same-sex couples cannot access ARTs, gay marriage is illegal. Therefore, the Japanese LBGTQ+ community is not legally allowed to receive fertility treatment.[54] However, when implemented in a context where ARTs are equally accessible to all, members of the LGBTQ+ community have increased opportunities for becoming parents. This technology has the power to "[unseat] traditional notions of heterosexual parenthood by creating

[53] Ibid, 139.
[54] Tokyo Fertility Clinic, "Fertility Clinic Tokyo," Fertility Clinic Tokyo, https://fert-tokyo.jp/english/.

previously inconceivable offspring for same-sex couples."[55] With ARTs, queer couples have had more options than just adoption in order to build their families. Methods like donor insemination for lesbians and gestational surrogacy for gay men have led to a "queering of reproduction" in the United States.[56] For example, the use of ARTs by queer women have been life-altering. An article in a 2004 issue of *New York Times Magazine* told a story from 1979 of a lesbian couple who had a child through artificial insemination. They used "a syringe, sperm donated by a gay friend of a friend and the instructions on a mimeographed pamphlet circulating in the lesbian community at the time," and they achieved their dream of starting a family.[57] Even when this technology was not widely accessible, it was still highly valuable to the lesbian community who were able to build families with it. Increasing access to ARTs for all who seek it would only increase its impact. This is yet another example of how ARTs were not being used as a tool for social control by men, and in the right contexts and under equitable circumstances, this technology made parenthood possible for many who desired it.

As seen through the lens of queer women, ARTs could be a powerfully liberating tool for groups of people seeking fertility treatment, but the regulation around its implementation and the social context which it lies in matters significantly. Corea's argument that ARTs could be a tool for social control is not unfounded; as previously mentioned, there are numerous "structural, ideological, and practical obstacles" that "serve to limit access to these technologies."[58] However, context changes the way technology is formed and looked at, and ARTs are no exception. Fertility technology can produce both socially conservative and liberating conditions at the same time.[59] By investigating the cultural and social orders that these technologies are situated in, "we can begin to unpack the

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[55] Inhorn and Birenbaum-Carmeli, "Assisted Reproductive Technologies," 183.
[56] Ibid, 183.
[57] Laura Mamo, "From Whence We Came: Sex without Reproduction Meets Reproduction without Sex," in *Queering Reproduction: Achieving Pregnancy in the Age of Technoscience* (Durham: Duke University Press, 2007), 44.
[58] Ibid, 180.
[59] Marilyn Strathern, *Reproducing the Future: Essays on Anthropology, Kinship, and the New Reproductive Technologies* (Manchester: Manchester University Press, 1992).

multifaceted and cultural transformations currently being induced by ARTs around the world."[60] Despite the barriers they faced in accessing fertility technology, queer women have adapted their own attitudes towards reproduction since the introduction of ARTs. For example, Giulia Zanini's ethnographic work on the use of ARTs in relation to Catholicism in Italy proved that even in contexts that did not yield open access to this technology, individuals still found their own justifications for their use. Scholars have detected the use of a "situational morality" in these situations, which is when "people fabricate their own ethics in relation to their incidental needs through the creative selection and combination of beliefs, norms, and practices."[61] While the Vatican is opposed to the use of reproductive technologies, for many lesbian women it is a viable option for having children, and they, therefore, have had to think autonomously about ARTs. Fertility treatment patients have created "individual modern ways of approaching medical technologies" outside of the Catholic church to ground their decisions.[62] This example shows that even when queer women faced situational barriers, like those imposed by the Vatican, they were resilient and changed their own individual contexts for the use of ARTs to fit their needs. This reemphasizes the importance of the context that these technologies reside in.

Furthermore, the feminist discourse surrounding ARTs could sometimes exclude genderqueer people from the conversation. Scholar Gena Corea argued against ARTs on the basis that they allowed the patriarchy to keep women tied to motherhood, but this argument exists within very limiting definitions of gender and gender roles. In her influential work *The Mother Machine* (1985), she stated that "in controlling the female generative organs and processes, doctors are fulfilling a male need to control women's procreative power," or the "magical force of the female."[63] However, this was an

[60] Inhorn and Birenbaum-Carmeli, "Assisted Reproductive Technologies," 178.
[61] Zanini, "Jesus Is in Favor," 362.
[62] Ibid.
[63] Corea, "Reproductive Control," 303.

oversimplification and was suggestive that women were only defined by their reproductive capacities. There is more to women than just their procreative power that makes them a "magical force." This argument also laid within an outdated concept of gender roles – one that was reductive of all the positions that women could take on in society. Contemporary understandings of gender roles have changed, moving away from the binary division and have de-linked womanhood from motherhood, for instance. Feminist theorists now reject the idea of motherhood as a fixed category that all women naturally possess. Instead, "being a mother is rather seen as part of a woman's identity," equal to other facets of identity that need to be acquired.[64] Furthermore, not only did this argument lie within limiting definitions of gender roles, but also of gender itself. Those who identify as women are not the only ones with reproductive capacities. New fertility technology (for example, uterine transplants paired with IVF) "makes pregnancy across and beyond genders a possibility," as non-binary, transgender, and genderqueer people can benefit from them too.[65] Therefore, it is through the lens of queer patients that we see the shortcomings of Corea's argument. It is not just heterosexual or cisgender women who use these technologies. This caused scholars like Olivia J. Fischer, author of "Non-Binary Reproduction: Stories of Conception, Pregnancy, and Birth," call for a movement to "disentangle gender from the acts of conception, pregnancy, and birth."[66] While Corea's argument may have had merit in the 1980s, her ideas are no longer applicable to the current body of patients who are seeking the help of ARTs. It is clear that reproductive technologies can both help and hurt the effort for reproductive justice of the LGBTQ+ community, further proving the importance of evaluating the situational context of ART implementation.

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[64] Gerda Neyer and Laura Bernardi, "Feminist Perspectives on Motherhood and Reproduction," *Historical Social Research / Historische Sozialforschung* 36, no. 2 (136) (2011): 162–76.
[65] Drucker, *Fertility Technology*, 187.
[66] Ibid.

The Paradox of ARTs and Choice

Through the previous examples of the intersection of ARTs with race, sexuality, and religion, we see that these new technologies exist paradoxically. This points to the reasons why the feminist debate over ARTs, as I will show in the following chapters, has not resulted in a value judgment but in ambivalence. The negative and positive impacts of reproductive technologies are difficult to quantify, as the user experience and success rates are so dependent on individual patients. In the 1979 article "Test-Tube Babies: Joyful Break-through or Sinister Portent?" published for the Canadian magazine *Chatelaine*, author Barbara Moon interviewed a fertility doctor to get his perspective on IVF. Dr. Leon Kass argued that providing a child through IVF for "a woman with blocked oviducts is not a treatment (as a surgical reconstruction of oviducts would be). She remains as infertile as before. What is being "treated" is her "*desire*" to have a child (my emphasis).[67] This idea that it is the pregnant person's desire being treated, and not their actual infertility, spoke directly to Franklin's concept of IVF as a hope technology. The hope that ARTs give of the potential to have a child is what entices people to go through multiple expensive and exhausting rounds of IVF. However, we saw IVF's double-edged character come out in the fact that it offers potential with no end. There is no limit to how many rounds of IVF you can go through if finances are not a concern. This aspect of the technology has left people in what Franklin called a reproductive "limbo", which she defined as a state of being so attached to the hope of an IVF baby that they keep trying, but after multiple rounds not having any success. While ARTs bring people hope, this aspect of IVF in particular can sometimes be harmful when there is no stopping point. Franklin argued this can compound the infertility struggle:

> "The hopelessness of never having children, the condition IVF 'responds to,' may be compounded by a hopelessness about ever coming to terms with this condition at all. If IVF offers resolutions to some women, it can also take away any hope of resolution for others. What IVF is seen to offer, in other words, *may be precisely what it takes away*. Nearly succeeding

[67] Barbara Moon, "Test-Tube Babies: Joyful Break-through or Sinister Portent?," *Chatelaine* (Toronto, Canada: St. Joseph Communications, February 1979), 144.

> can be even worse than never coming close to success, as the hope has become even closer to becoming a reality, and the resulting loss is that much more devastating."[68]

It is in the emotional sense as well as the social sense that IVF revealed itself as a paradoxical technology. While this is not the case for everyone, it is important to note the potential negative effects that IVF can have on people who are seeking pregnancy. Another notable aspect of the impact of this technology that Franklin discussed in *Embodied Progress* is the way that the IVF treatment creates a kind of "desperateness" that patients did not express harboring before beginning the IVF process. While many media accounts discussed in her book depicted women seeking IVF due to their desperateness for a child, her interviews with women undergoing treatment revealed that "IVF is *the cause of* many women's increasing 'desperation.'"[69] It is the hope that ARTs offered that resulted in the desperation that the technology was invented to relieve.

This chapter has been an attempt to reveal the many ways in which ARTs have paradoxical impacts on people who can reproduce in society. It is for this very reason that feminists, for decades, have debated their true value. The discourse has evolved since its introduction in the seventies. In the next two chapters, I will explore this evolution in feminist judgements and how it could impact the use of ARTs going forward.

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[68] Franklin, *Embodied Progress*, 176.
[69] Ibid, 187.

CHAPTER II: EARLY FEMINIST THINKING ON ARTs

The birth of Louise Brown in 1978 attracted attention and media coverage from all around the world. Subsequently, feminist publications on ARTs began to surface during the 1980s. However, this does not signify a lack of feminist scholarship on women's reproduction in the 1970s. With the wider availability of birth control across the nation and off the coattails of the various social justice movements of the 1960s, discussions about lower-level technology, such as artificial insemination, circulated during the seventies. Furthermore, questions around the institution of motherhood, about pregnancy, and their relations to gender roles were widely discussed in this decade. In the seventies, feminists like Adrienne Rich and Shulamith Firestone published literature on gender roles, women's reproductive capacities, and motherhood. In the eighties, formal arguments for the social implications of ARTs were published by scholars such as Gena Corea, Robyn Rowland, and Michelle Stanworth. It was clear in their work that feminists were originally highly skeptical of new ARTs like IVF, associating them with the furthering of the patriarchy and the control of women. The popular media of these decades complemented some of these arguments. In the seventies, women's magazines showed adherence to the strict gender binaries that Rich and Firestone criticized. The articles from the eighties showed uncertainty about how to receive the newly available IVF treatment, reflecting the skepticism of feminist publications. This chapter will explore early feminist perspectives on new ARTs and how they contributed to the public discourse.

The Seventies

During this decade, both scholarship and popular media focused mainly on the social implications of infertility, as well as the main form of fertility technology of the time: artificial insemination, also known as intrauterine insemination (IUI). The feminist movement in the seventies

was in its second wave, fueled by the work of writers like Simone de Beauvoir, author of *The Second Sex*, and Betty Friedan, author of *The Feminist Mystique* – the latter revealed a collective dissatisfaction among housewives in America. In addition, the feminist movement played an integral part in bringing the Equal Rights Amendment to Congress in 1972, which prohibited sexual discrimination under the law, and in the passing of *Roe v. Wade* in 1973, which conferred the right to abortion. Furthermore, the scholarship of the seventies called for a feminist revolution, a shift away from the stereotypical female roles of society, and more freedom for women's reproduction. Women's magazines of the time were very representative of the culture that feminists were trying to rebuke. In articles from magazines, including but not limited to *Woman's Day* and *Cosmopolitan,* there is a strong representation of the binary gender roles that were the norm of the previous decades. Therefore, the women's magazines of the seventies were prime examples of the exact discourse and attitudes feminists called to move away from.

A formative text published in 1976 on women and the responsibilities they carried due to their reproductive capacities was Adrienne Rich's *Of Woman Born: Motherhood as Experience and Institution*. She contextualized her own experience as a mother through the societal pressures that all women face when they begin motherhood. In the seventies, there were still widespread beliefs that all women should want to be mothers. This put pressure on so many women who struggled to raise children, had feelings of inadequacy, and desired more independence, as the stereotypical idea of motherhood was that her love should be unconditional.[70] Indeed, as Patrick Steptoe, one of the doctors who was instrumental in the birth of Louise Brown in the UK, remarked: "there is biological drive to reproduce" within all women.[71] Coming from the doctor facilitating the very first IVF birth, it is

[70] Adrienne Rich, *Of Woman Born: Motherhood as Experience and Institution*, First (New York: W.W. Norton & Company, Inc., 1976), 23.
[71] Ferber et al., "Towards the Two 1978 Births," 43.

evident that those responsible for the creation of this technology harbored these beliefs, putting more pressure on women to have children.

This idea that Rich discussed was also evident in the women's magazines of the decade. A 1978 article in *Parents* quoted Dr. Albert Decker, the then executive director of the Fertility Research Institute in New York; he claimed that "the profound desire of a woman to bear children is innate," and "there is no stronger drive than that of a woman to become pregnant."[72] Given that the past two quotes were given by doctors working in the infertility field, it is also clear that they were developing this technology to help all women see out what they believed should be encoded in them. Feminists of the seventies pushed back on this idea in many ways. They criticized the idea that all women are destined for reproduction. Simone de Beauvoir and Shulamith Firestone saw "women's maternal function as, quite simply and precisely, the root of [women's] oppression."[73] They believed that the maternal power of reproduction had been domesticated and turned into a source of powerlessness. Firestone specifically was famous for her claim in *The Dialectic of Sex* that "pregnancy is barbaric," and that every woman deserves freedom from "the tyranny of reproduction by every means possible."[74] Her vision to achieve this was through

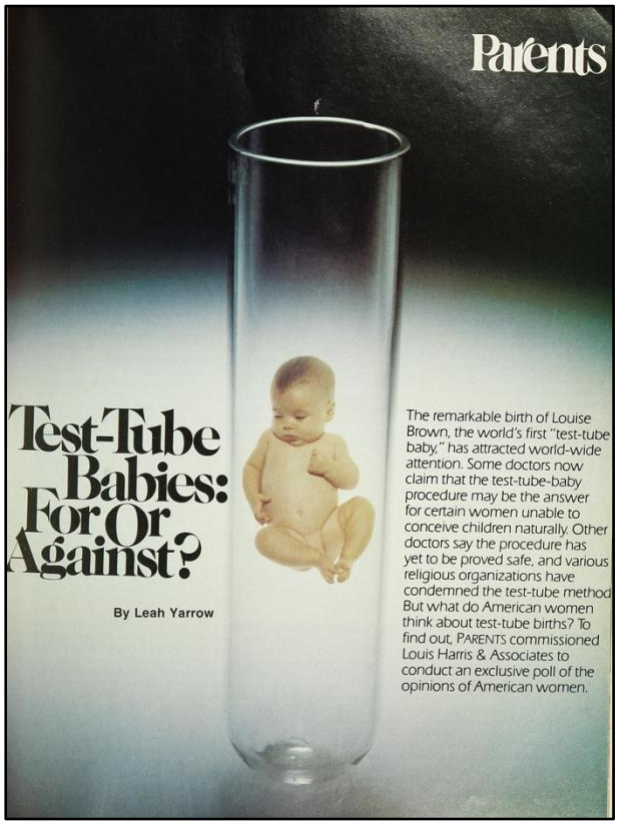

Figure 3 Leah Yarrow, "Test-Tube Babies: For Or Against?," *Parents* (Des Moines, United States: Meredith Corporation, November 1978).

[72] Leah Yarrow, "Test-Tube Babies: For Or Against?," *Parents* (Des Moines, United States: Meredith Corporation, November 1978), 82, 135.
[73] Rich, *Of Woman Born*, 72.
[74] Firestone, *The Dialectic of* Sex, 188-193.

ectogenesis – the growing of an embryo in an artificial womb from conception to birth. In this sense, Firestone was not unequivocally anti-ART, as she believed that this technology could be the next step in liberating women from maternity. While this was a controversial argument, it showed the degree to which feminists of the decade vied for the deconstruction of the idea that the desire to reproduce is innate in all women. It also showed the nuances in the arguments of feminists as ARTs like IVF began to come on the scene.

Rich also discussed the strict gender stereotypes that persisted in the seventies – a theme that was abundantly evident in the women's magazines of the decade. She spoke to her own experience to get this point across, noting that when she became visibly pregnant, the "atmosphere of approval" she received, even from strangers on the street, made her feel (for the first time in her life) "not-guilty," as she was following in the footsteps of women before her.[75] According to societal norms, this is what she was supposed to do; "*This is what women have always done.*"[76] Furthermore, when she later decided she did not want to have any more children and started looking into birth control options, she was questioned. Expressing a desire to get her "tubes tied" (the informal term for tubal ligation, a procedure where the fallopian tubes are cut and cauterized to prevent an egg from moving from the ovaries to the uterus), her husband "asked whether [she] was sure it would not leave [her] feeling 'less feminine.'"[77] In this testimony, Rich pointed out a link between infertility or sterilization and gender identity. Other women who wrote or were interviewed for magazines in the seventies shared similar feelings. Doris Del-Zio, well-known for her court case against a doctor who destroyed her embryos in an early IVF attempt, recalled in a 1979 *Good Housekeeping* article that her infertility left her feeling "as if [she] were only half a woman," and unworthy of her husband.[78] In the same year, the author of

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[75] Rich, *Of Woman Born*, 26.
[76] Ibid.
[77] Ibid, 29.
[78] Doris Del Zio and Suzanne Wilding, "I Was Cheated of My Test-Tube Baby," *Good Housekeeping* (New York, United States: Hearst Magazine Media, Inc, March 1979), 202.

the article "Why Can't I Have a Baby?" for *Ladies' Home Journal*, Eileen Williams Theim, claimed that seeing other women who were pregnant or with children was "a constant reminder that [she] had no tangible proof of [her] own womanhood."[79] Clearly, the seventies were a decade that tied reproduction to womanhood very closely. Not only did women report feeling like less of a "real woman," but men also felt emasculated upon the discovery that their inability to conceive could be their fault.

In a 1977 article for *Cosmopolitan*, the author wrote the story of a couple, Greg and Anne, who experienced trouble having a child. Anne, thinking their infertility was her own fault, shared feelings that "[she]'d failed as a woman," or "wasn't a whole woman" because she could not get pregnant.[80] But when the couple went to a fertility clinic and underwent a series of tests, they discovered that it was actually a problem with Greg's sperm, not Anne's eggs. Upon this diagnosis, Greg recalled that he "thought that [he] wasn't a man anymore," as his masculinity, "sexuality [and] fertility… were the same in [his] mind."[81] This testimony revealed the ways that society connected fertility to gender stereotypes. In an article published in 1973 for *Good Housekeeping* called "Sterility: A Husband's Story," the author confessed that his infertility diagnosis left him with "feelings of diminished manhood."[82] He also claimed that to any man, "the word that he will never father his own child stabs him to his core."[83] In a 1971 article for *Woman's Day* called "Treating Infertility," author Jane E. Brody discussed her and her husband's discovery that they were dealing with male infertility. When her husband's

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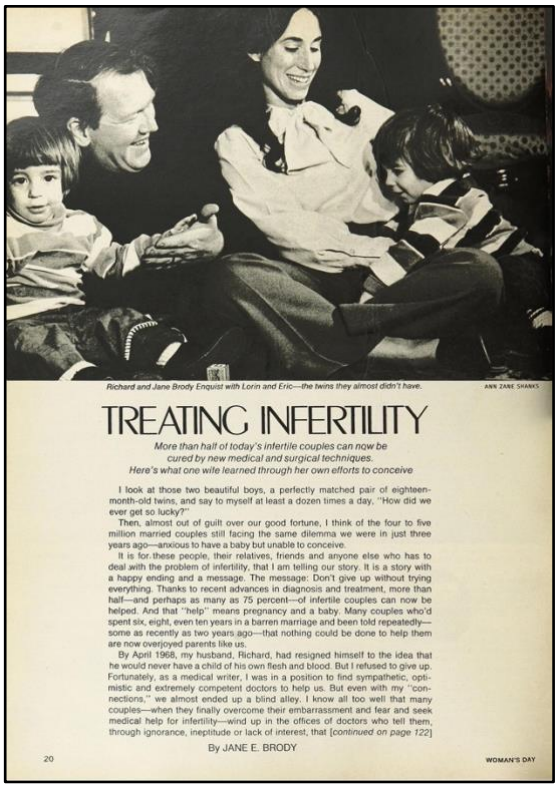
[79] Eileen Williams Theim, "Why Can't I Have a Baby?," *Ladies' Home Journal* (New York, United States: Meredith Corporation, October 1979), 20.
[80] Carla Fine, "Artificial Insemination: Brave New Way to Pregnancy," *Cosmopolitan* (New York, United States: Hearst Magazine Media, Inc, September 1977), 130.
[81] Ibid, 131.
[82] "Sterility: A Husband's Story," *Good Housekeeping* (New York, United States: Hearst Magazine Media, Inc, January 1973), 128.
[83] Ibid, 73.

sperm tests came back reporting "poor semen quality" as the reason for their trouble conceiving, Brody claimed it was an "assault on her husband's ego."[84] These testimonies showed that fertility was not just linked to feelings of femininity, but masculinity as well, showing a strong influence of gender stereotypes in the seventies. This is interesting in relation to Rich's discourse on motherhood. She highlighted the way in which "woman's status as a child bearer has been made into a major facet of her life," so much so that the terms "barren" or "childless" are used to castigate infertile women.[85] However, she noted that "the term 'nonfather' does not exist in any realm of social categories."[86] Despite this, the stories in the magazine articles made it clear that men feel troubled when their sperm is found not to be viable. Yet the fact that there is no popularized and condescending term for an infertile man is telling of the weight of responsibility on women in terms of reproduction. Still, it is evident that gender binaries heavily influenced situations of infertility in the seventies.



Richard and Jane Brody Enquist with Lorin and Eric—the twins they almost didn't have. ANN ZANE SHANKS

TREATING INFERTILITY

More than half of today's infertile couples can now be cured by new medical and surgical techniques. Here's what one wife learned through her own efforts to conceive

I look at those two beautiful boys, a perfectly matched pair of eighteen-month-old twins, and say to myself at least a dozen times a day, "How did we ever get so lucky?"

Then, almost out of guilt over our good fortune, I think of the four to five million married couples still facing the same dilemma we were in just three years ago—anxious to have a baby but unable to conceive.

It is for these people, their relatives, friends and anyone else who has to deal with the problem of infertility, that I am telling our story. It is a story with a happy ending and a message. The message: Don't give up without trying everything. Thanks to recent advances in diagnosis and treatment, more than half—and perhaps as many as 75 percent—of infertile couples can now be helped. And that "help" means pregnancy and a baby. Many couples who'd spent six, eight, even ten years in a barren marriage and been told repeatedly—some as recently as two years ago—that nothing could be done to help them are now overjoyed parents like us.

By April 1968, my husband, Richard, had resigned himself to the idea that he would never have a child of his own flesh and blood. But I refused to give up. Fortunately, as a medical writer, I was in a position to find sympathetic, optimistic and extremely competent doctors to help us. But even with my "connections," we almost ended up a blind alley. I know all too well that many couples—when they finally overcome their embarrassment and fear and seek medical help for infertility—wind up in the offices of doctors who tell them, through ignorance, ineptitude or lack of interest, that [*continued on page 122*]

By JANE E. BRODY

Figure 4 Brody, Jane E. "Treating Infertility." Woman's Day, New York, United States: Hearst Magazine Media, Inc, March 1971.

The other major topic discussed in feminist literature and women's magazines of the 1970s is IUI or artificial insemination by donor (AID). As AID is mostly used for heterosexual couples experiencing male infertility, this also led to men feeling emasculated. Interviews showed that men experienced feelings of inadequacy if IUI, and especially AID, is needed for the couple to conceive.

[84] Jane E. Brody, "Treating Infertility," *Woman's Day* (New York, United States: Hearst Magazine Media, Inc, March 1971), 122.
[85] Rich, *Of Woman Born*, 11.
[86] Ibid.

Diana Davenport recalled discussing AID with her husband Ralph in her 1974 article "I Was Artificially Inseminated" for *Cosmopolitan*. She recalled him telling her: "I don't want my wife waltzing around with another man's semen inside her. What about my pride? Suppose someone finds out the child isn't mine?"[87] This backlash to Davenport's suggestion showed that AID was seen as an emasculating threat. Sperm viability was closely linked to masculinity during this time. There was another interesting facet of the discussion around AID in the magazines that revealed attitudes of the time toward women. In the 1977 article for *Cosmopolitan* about the infertility struggle of a couple Greg and Anne (mentioned earlier), the author Carla Fine's tagline for the piece was: "Even if your man is sterile, there's a way for you to get pregnant – without risking the emotional tiger-trap of an affair."[88] And further, she introduced Greg and Anne as harboring a secret, that "Greg is not the father of his son," but "No, it is not the obvious – Anne didn't have an incautious affair with another man."[89] It is interesting that in this article, Fine implied that the *obvious* answer to Greg not being the father of Anne's son was because Anne had an affair, which is a misogynistic claim. These themes of threatened masculinity and female promiscuity show how rigid gender roles were during this decade. In addition, the magazine articles reported that most couples kept it a secret if they conceived through AID, some of them were even encouraged to do this by their doctors. Brody, in another article for *Woman's Day* magazine, revealed that "AID couples are advised to tell no one how their baby was conceived."[90] This showed an insecurity of society around struggles of infertility. Fine for *Cosmopolitan* also reported that "Anne and Greg plan[ned] to tell no one of their use of artificial insemination, including Josh,

[87] Diana Davenport, "I Was Artificially Inseminated," *Cosmopolitan* (New York, United States: Hearst Magazine Media, Inc, March 1974), 131.
[88] Fine, "Artificial Insemination," 130.
[89] Ibid.
[90] Jane E. Brody, "New Hope for Infertile Couples," *Woman's Day* (New York, United States: Hearst Magazine Media, Inc, February 3, 1978), 114.

their son."[91] They were so insecure about Greg's infertility that they planned to never reveal to their son who his true father was.

In an article for *Woman's Day* in 1979, a beaming mother holding her infant appeared on the cover page. It was a photo of Lesley Brown, holding her child Louise, the "first baby to be conceived outside her mother's body."[92] The article, titled "Are Test-Tube Babies the Answer for the Childless?" by David Zimmerman signified the future of the discourse around ARTs in both scholarly literature and popular media. Once Louise Brown made headlines worldwide, people began to wonder if this technology could be the answer to infertility that many had been wishing for. The subheading describes this wonderment: "Until recently adoption was the only route to motherhood for women suffering from tubal infertility. Now, radical methods of conception offer them hope."[93]

Are Test-Tube Babies the Answer for the Childless?

Until recently adoption was the only route to motherhood for women suffering from tubal infertility. Now, radical methods of conception offer them hope. For some people, the controversial new methods are an outrage . . . for others, desperate for a child, they promise a miracle.

By DAVID ZIMMERMAN

Lesley Brown smiles happily as she holds her daughter, Louise, the world's first baby conceived outside her mother's body.

The National Enquirer

■ "Dear God, she's so lovely!" exulted Lesley Brown, as she held her daughter, Louise, the first baby ever conceived outside a woman's body. "She's so beautiful, and she's mine!"

For Lesley, Louise's birth last July is a personal miracle. Without *in vitro fertilization*, the so-called test-tube baby procedure through which Louise was conceived in a laboratory dish, Lesley was hopelessly infertile. She lacks fallopian tubes, the organs in which conception normally occurs.

The birth of baby Louise has wider meaning, however. The in vitro method is one of three dramatic experimental procedures that represent a scientific revolution in the treatment of infertility. They offer real hope, for the first time, that millions of childless women one day will carry and deliver babies of their own.

These radical and controversial new methods are designed for women who cannot be helped by conventional infertility cures—women, for example, whose fallopian tubes, or *oviducts*, have been blocked, damaged, severed or surgically removed. One of the methods may also help women who are unable to ovulate or afraid to conceive because they carry a severe genetic disease.

The first experimental method—in vitro fertilization—has already resulted in the birth of at least two healthy babies. More may be on the way. The second method of relieving tubal infertility, which has not yielded a viable pregnancy as yet, is *fallopian tube transplantation*. The infertile woman is given—surgically—another woman's oviduct within which to conceive. The third, soon-to-be-tried method is *artificial embryonation* (AE). It is a simpler technique that closely parallels *artificial insemination with donor sperm* (AID), the method widely used when a couple is childless because the male is infertile.

The fallopian tubes are essential for normal child-bearing. A woman ordinarily has two such tubes, each about four and one-quarter inches long. At one end of each tube is an ovary. When the woman ovulates, around the fourteenth day of her menstrual cycle, a fertile egg, or *ovum*, is released and enters the tube. It travels slowly toward the far end, which opens into the uterus. When a sperm cell that has entered the tube from the uterus encounters and unites with the egg, conception occurs.

The fertilized egg normally requires about three days to reach the uterus. It floats there, unattached, for a few days while its cells divide rapidly. About the eighth or ninth day after conception, when it consists of one to two hundred cells, the embryo burrows into the uterine wall. A placenta soon forms, and the embryo develops on nutrients provided through the mother's bloodstream.

Recent research has shown that the oviduct is not simply a passageway in which the two essential elements of conception chance to meet. Rather, fertilization depends on hormonal and biochemical balances within the fallopian tube. English obstetrician Patrick Steptoe, M.D., and *(continued on page 20)*

Figure 5 David Zimmerman, "Are Test-Tube Babies the Answer for the Childless?," *Woman's Day* (New York, United States: Hearst Magazine Media, Inc, May 22, 1979).

The 1980s is when judgments around IVF and deeper conversations around ARTs began to surface. As mentioned previously, these are ongoing conversations that can ultimately be defined as ambivalent towards ARTs. Scholars and patients alike quickly recognized their double-edged nature. The last line of the subheading perfectly captured this uncertainty – "For some people, the

[91] Fine, "Artificial Insemination," 144.
[92] David Zimmerman, "Are Test-Tube Babies the Answer for the Childless?," *Woman's Day* (New York, United States: Hearst Magazine Media, Inc, May 22, 1979), 18.
[93] Ibid.

controversial new methods are an outrage… for others, desperate for a child, they promise a miracle."[94]

The Eighties

Feminist scholarship on ARTs increased in the 1980s with the development of IVF. While scholars did not seem to agree on any single judgment of the new technology, I argue that the literature became considerably more critical about ARTs with the widening availability of IVF. One of the first major works of scholarship that came out on ARTs is Gena Corea's book *The Mother Machine,* published in 1985. As discussed earlier, Corea was largely critical of reproductive technologies, because she believed they were, first and foremost, a vehicle for the patriarchy to exhibit greater control over women. She believed the new ARTs like IVF would only further men's control of the obstetrics and gynecology field. She highlighted the language of Lesley Brown after the birth of Louise – when Brown turned to Steptoe and said, "Thank you for my baby."[95] Corea feared this signified a primitive control over reproduction by men. This idea was echoed in another major work that came out of the eighties: Michelle Stanworth's anthology *Reproductive Technologies: Gender, Motherhood, and Medicine*, published in 1987. She summarized in the introduction that "feminists have increasingly seen in the new reproductive technologies nothing less than an attempt to appropriate the reproductive capacities which have been, in the past, women's unique source of power."[96] Due to the fact that the medical field in the eighties was male-dominated (and still is today), many feminists felt that ARTs gave medical practitioners, or men, more power over women's reproduction.

Stanworth also worried about the medicalization of infertility. She claimed that the development of ARTs went hand in hand with the agendas of doctors and not the patients; this

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[94] Ibid.
[95] Corea, "Reproductive Control," 310.
[96] Stanworth, "Introduction," 3.

technology helped in "furthering medical professionals' status and control," as well as created "a dynamic where male doctors 'know more' about women's bodies and health."[97] Furthermore, if doctors *believed* they "knew more" about women's health, it may have resulted in them dismissing women who actually knew their own bodies better. Scholar Robyn Rowland agreed, reporting women speaking of the "lack of dignity of the process, the lack of information given to them," and "the fact that doctors ignore women's experiences."[98] This idea was found in the women's magazine articles of the decade. A 1980 article for *Ladies' Home Journal* told the story of couple Claudia and John Franson's struggle with infertility. Over and over again, Claudia was told nothing was wrong with her. The doctors told them to "just keep trying" and "*relax*," although she truly believed it was not her nerves that kept her from getting pregnant.[99] Although she felt something was not right, the doctors disagreed, and so she and her husband tried to accept that nothing was wrong (she later found out through a different doctor she had a restricting adhesion on her fallopian tube). In a similar story, an anonymous author for *Good Housekeeping* wrote an article in 1980 titled "My Doctor Didn't Believe Me." After being told there was nothing abnormal about her reproductive system, she did some research of her own and believed that she may have had endometriosis. When she brought it up

My Problem and How I Solved It

MY DOCTOR DIDN'T BELIEVE ME

He kept telling me I was fine, but I knew he was wrong. I had to find the answer or lose the man I loved

Nine years ago the big decision to have a child came easily. I had almost finished my graduate studies in art history and my husband's residency training in psychiatry was to end in six months. Frank and I had been married for seven years. The time seemed right to begin our family and we smiled shyly at each other, like young lovers, as we began to calculate my probable ovulation dates in the coming months.

"Let's wait until we go on vacation next month," I said eagerly to my husband. "Maybe it will bring some special kind of luck!"

When, on July 20, 1969, the Americans made the first successful landing on the moon, Frank and I decided that was the night to have a baby.

We were certain there'd be no problems with my getting pregnant, and we laughed together as we thought how special our child would be—conceived on the night of the first moon walk!

The moon landing was a success, but our baby-making, I am sorry to say, was a fizzle.

The summer dragged into fall, vacation gave way to work, and I still had not become pregnant. But I refused to admit to any real problem. Instead, I made excuses.

In August I said, "We must have missed the right day this month." In September I suggested that maybe I'd gotten up too soon after making love. In October I decided that my upcoming oral exams for my Ph.D. were getting me so terribly upset that I just wasn't ovulating.

At my regular gynecological checkup in October everything seemed normal. When the doctor heard that we had been trying to conceive for only a few months, he said it wasn't soon enough for us to begin worrying.

"You're 29?" he asked, looking over my records. I nodded.

For the first time I began to wonder if my pursuit of a career had closed the door to motherhood. The doctor must have sensed my anxiety because he smiled comfortingly and told me not to panic, but to wait and see what happened.

I left the office wanting to feel reassured, but somehow I knew the situation would be the same the next time I saw him. Neither of my sisters had had problems having children. Something had to be the matter with me.

After my oral exams were over, I decided to do some research on my own. I went to a medical library and took out a gynecology textbook so that I could learn more about conception. The text described how to tell whether or not you are ovulating. I recorded my temperature each morning for one menstrual cycle and compared my charts with the ones in the book. Everything seemed normal.

Then I read an article about endometriosis, a disease which can occur in women who put off childbearing until their late twenties. Sometimes, it has no symptoms at all—except infertility.

That night at dinner I asked Frank if he thought I might have endometriosis.

"I don't know. I'm a psychiatrist," he said. "Why don't you ask your gynecologist?"

What we had begun on vacation with the tender enthusiasm of young lovers was now turning into

continued on page 32

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Figure 6 "My Doctor Didn't Believe Me," *Good Housekeeping* (New York, United States: Hearst Magazine Media, Inc, July 1980), 32.

[97] Stanworth, "Reproductive Technologies," 13.
[98] Robyn Rowland, "Technology and Motherhood: Reproductive Choice Reconsidered," *Signs* 12, no. 3 (1987): 521.
[99] Nancy C. Baker, "The Secret of Our Very Special Baby," *Ladies' Home Journal* (New York, United States: Meredith Corporation, August 1980), 46.

with her doctor, he claimed he "[did]n't see anything evidence of endometriosis" despite her reporting cramps more painful than average.[100] It was not until a year later, when they got an appointment with a top fertility doctor, that he performed a culdoscopy (an endoscopic procedure to examine the posterior vaginal wall) and diagnosed her. When she heard the news, she "exploded," saying "I *knew* it!" and felt angry "that it had taken so long to discover" when she had previously voiced her concerns.[101] These articles reflected the fears of feminists that reproductive technologies increased male control of gynecology. Ann Oakley worried that reproductive technology helped the obstetrics and gynecology field "move to reduce women's reproductive status to that of objects."[102] The fear was that men having greater control over a woman's pregnancy made it possible to ignore her as a human being and be seen only as a vessel for reproduction.

Another topic of ARTs found in both the 1980s literature and popular media was the physical impact that fertility treatments could have and the toll they could take on women's bodies. Rowland's article "Technology and Motherhood" discussed how the "cost to participating women [of the IVF process] is more difficult to quantify" as "their bodies are used as living laboratories."[103] While couples undergoing ART treatment are both emotionally impacted, women have the weight of the emotional and physical burdens to bear. Women writing or giving interviews for magazine articles attested to this. Laurie Neff, writing for Parents in 1985, pointed out that "these procedures require daily trips to the hospital," a "rigorous protocol" that "can be overwhelming" and difficult to follow, especially for working women.[104] Not only does IVF require many trips, but the treatment itself of hormone injections and multiple surgeries is taxing. In a 1987 article for *Ladies' Home Journal*, the authors

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[100] "My Doctor Didn't Believe Me," *Good Housekeeping* (New York, United States: Hearst Magazine Media, Inc, July 1980), 32.
[101] Ibid, 36.
[102] Ann Oakley, "From Walking Wombs to Test-Tube Babies," in *Reproductive Technologies: Gender, Motherhood, and Medicine*, ed. Michelle Stanworth (Minneapolis: University of Minnesota Press, 1987), 51.
[103] Rowland, "Technology and Motherhood," 521.
[104] Laurie Neff, "Test-Tube Baby: A Mother's Diary," *Parents* (Des Moines, United States: Meredith Corporation, October 1985), 187.

CASE HISTORY

The miracle baby

Gary and Monique had visited one infertility specialist after another. Little did they dream that they would become medical pioneers—their son was the first baby born in America from a frozen embryo

The proud father comes to the door of his family's Southern California home and greets his visitors cheerfully. In his arms are twenty pounds of squirming, gurgling, drooling baby boy, whom he promptly hands to his guests. "Here," he says, smiling. "He doesn't feel frozen, does he?"

Indeed he doesn't. Baby Phillip, now ten months old, feels warm, cuddly, soft . . . and is blissfully unaware that he's a modern medical miracle—the first baby born in the United States from a frozen embryo. With his chubby cheeks and beatific grin, Phillip is a real charmer.

His parents didn't set out to be medical firsts either; they just wanted to have a baby. Ever since they married, three years ago—a second marriage for both—they had known they'd want to have a family. In fact, a love of children was one of the things that brought the couple together. "What endeared Gary to me was how much he loved children, and how he didn't think his career was *(continued)*

By Beth Weinhouse and Frank Feldinger

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Figure 7 Beth Weinhouse and Frank Feldinger, "The Miracle Baby: The Medical Facts," Ladies' Home Journal (New York, United States: Meredith Corporation, April 1987).

described couple Gary and Monique's multiple IVF rounds, and "each attempt took its toll."[105] The process required Monique to have "general anesthesia every time her eggs were collected, and the procedure would have her exhausted for days afterward."[106] There also seemed to be concern about an insensitivity to women's pain while undergoing these treatments, as all the focus could often be put on the success of the conception of a baby. Author Robin Green in 1987 wrote a piece for *Cosmopolitan* discussing the IVF process. She recalled the experience of getting her and her husband's embryos implanted, and that "despite my physical comfort upon awakening from the general anesthesia, I was given no painkillers that might interfere with the implantation of embryos in the uterus."[107] While IVF offers the hope that so many couples seek for having a child, the physical effects impact so many other facets of life. Feminists feared that the physical costs may not outweigh the benefits, especially with IVF's low success rate.

There was another major topic of the feminist literature of this decade that was not found as part of the discourse in women's magazines, and that was the danger of ARTs' potentially harmful eugenic nature. This was one of Rowland's major concerns regarding the technology that she voiced in "Technology and Motherhood," warning that all ARTs "form an interlocking chain leading us from

[105] Beth Weinhouse and Frank Feldinger, "The Miracle Baby: The Medical Facts," *Ladies' Home Journal* (New York, United States: Meredith Corporation, April 1987), 174.
[106] Ibid.
[107] Paula Dranov and Robin Green, "The Infertility Epidemic: I Had a Test-Tube Baby," *Cosmopolitan* (New York, United States: Hearst Magazine Media, Inc, July 1987), 177.

the test-tube baby to eugenics and genetic engineering."[108] IVF and gamete donation allowed people to hand-pick the traits they want for their child from a catalog. The introduction to Stanworth's anthology outright stated her concern that ARTs "allow a greater scope for the application of eugenic policies that would place a higher value on some human lives than on others."[109] Sperm donor banks still to this day advertise their donors as tall, athletic, intelligent, and Ivy League graduates. This feeds into ideas of biological determinism, which upholds racial discrimination. Furthermore, author Carol Smart argued that "the new technologies themselves extend the influence of the state" as the new laws regulating ARTs dictated who had access to them.[110] The state, having a vested interest in its population, can then make it easier for certain populations (i.e., white upper-middle-class women) to reproduce. In addition, sex predetermination technology could be especially dangerous in cultures where sons are preferred for future inheritance. The creation of ultrasound technology allowed the parents to know the sex and subsequently use it as grounds for abortion. With the use of IVF, specific embryos are chosen to be implanted in the person's uterus. Although it is usually chosen based on viability, preimplantation genetic testing (PGT) can now identify the sex of an embryo, creating the ability for sex selection before implementation.[111] In the United States, this practice is not encouraged by medical professionals, but it is not illegal. There is no legislation surrounding the use of PGT, and fertility clinics dictate their own sex selection policies. Therefore, this fear of ARTs for eugenic purposes first came out in the eighties with the introduction of IVF. This is still a large part of the debate happening today.

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[108] Rowland, "Technology and Motherhood," 513.
[109] Stanworth, "Introduction," 1.
[110] Carol Smart, "'There is of course the distinction dictated by nature': Law and the Problem of Paternity," in *Reproductive Technologies: Gender, Motherhood, and Medicine*, ed. Michelle Stanworth (Minneapolis: University of Minnesota Press, 1987), 100.
[111] Vitaly A. Kushnir, Eli Y. Adashi, and I. Glenn Cohen, "Preimplantation Sex Selection via in Vitro Fertilization: Time for a Reappraisal," *F&S Reports* 4, no. 3 (May 26, 2023): 241, https://doi.org/10.1016/j.xfre.2023.05.006.

Big strides in both the women's movement and reproductive technology came out of the seventies and eighties. The arguments of feminist scholars from this decade show that although IVF promised exciting new possibilities, it also created conditions that caused many scholars to have reservations. I argue that the attitudes regarding ARTs of the seventies and the eighties are more negative than positive. In the next chapter, I will track a shift in the discourse to show how feminists start to frame the technology in a way that is more positive and empowering for women.

CHAPTER III: A TURNING POINT

By the 1990s, about a decade after the birth of Louise Brown, IVF had become the most common fertility treatment sought out by patients. Furthermore, the IVF industry grew rapidly in many developed countries around the globe, making these infertility treatments more normalized. The commercialization of the ART industry also contributed to this wider acceptance of assisted reproduction in society. Patients no longer approached these services with as much speculation as before. However, as the world became accustomed to the idea of this kind of assisted reproduction, feminists stayed largely ambivalent. The work of Marilyn Strathern and Sarah Franklin – some of the most prominent scholars of the decade – showed the ways in which feminists were still not sold on ARTs due to their social implications. This has been a consistent theme since the start of feminist publications on fertility technology. However, while Strathern and Franklin still addressed this ambivalence, they also displayed more optimistic attitudes towards treatments like IVF than previous feminist discourse.

In this chapter, I will argue that the turn of the twenty-first century marked a shift in sentiments on ARTs by feminists. While ambivalence was still largely present, more positive aspects of their social repercussions began to be parsed out and analyzed. In the 1990s, Strathern and Franklin pointed out that kinship structures and ideas of how we relate to one another began to change with the widening availability of IVF. The articles from women's magazines provided insight into these changes and affirmed the feminists' speculations. In the 2000s and on, the scholarship on ARTs did not diminish. Given so many people used it by this time, the naturalization and normalization of this technology were therefore added to the discussion. Franklin, with the addition of Charis Thompson in the aughts, published valuable literature on this topic, along with how the normalization of reproductive technology developed in tandem with how it became its own major economic industry. This

normalization and concurrent commercialization of ARTs is shown in the women's magazine articles that came out of this time period. People became less hesitant to use these technologies, and there is evidence of ART companies marketing heavily to young people, especially those who identified as women in their more fertile years. However, it is significant to note that my findings for articles portraying ARTs also significantly weaned after the turn of the century. Therefore, their normalization is shown in the magazines that both came out and *did not* come out of the aughts, as I will argue that this lack of coverage signified that the novelty of ARTs had worn off.

The Nineties

As more and more people in the United States and abroad began to use IVF for family building, feminist scholarship on ART usage continued to be published. Two of the most prominent scholars of ARTs emerged in the field during this decade: Marilyn Strathern, known to be the founder of the scholarly field of ARTs, and Sarah Franklin, one of the now leading experts on the social implications of reproductive technology. Two of the main aspects of Strathern's work that I will be focusing on are her arguments on the commercialization of fertility technology and the separation of biological and social parenthood. The rise of IVF/ARTs as an industry is no surprise in the context of our current neoliberal society, which has yielded the deregulation of labor markets and increased privatization for economic growth. Furthermore, this commercialization of fertility technology did not make feminists privier to supporting the use of ARTs. Strathern made this especially clear in her 1992 publication *Reproducing the Future*. However, this book not only discussed the growing ART market but in addition, presented a positive consequence of this technology's implementation that painted ARTs in a more optimistic light. This references the rethinking of kinship structures that ARTs pushed along, as they made way for more inclusive ideas of how we relate to one another. But first, I will address her ideas of the marketization of fertility treatments.

A significant portion of Strathern's book discusses the marketing and commercialization of the IVF industry in a free-market capitalist culture. The second chapter, titled "Enterprising Kinship," looked at the ways ARTs opened up reproductive options for people, but options that are preselected by social institutions and are only options to those who have the money to reach them. For example, the choice to even receive fertility technology was already made for you if you did not have the finances to pay for treatment. Here, we see Strathern critiqued the idea of "choice" in the neoliberal society as a false pretense. She argued that choice became prescriptive due to cultural pressures that were put on people to make certain decisions. This idea is in line with a common critique of second-wave feminism, which pointed out that the second-wave's focus on the importance of choice in reproductive autonomy neglected a whole demographic of people who did not have the privilege of choosing due to their socioeconomic conditions. While ARTs enabled many people to have children that could not without aid by technology, they needed money to access these aids. This means, as Strathern highlighted, "money is thus literally enabling of the enabling devices."[112] In "Enterprising Kinship," Strathern pointed out flaws in the white feminist discourse of the second wave that became mainstream in conversation of reproductive rights within the broader feminist movement.

This commercialization of infertility was also reflected in popular media of the time. For example, the 1996 article "Infertility, Inc.: The Stork Market," published in *Ladies' Home Journal* highlighted how the infertility business during the nineties remained largely unregulated, allowing capital gain to sometimes be put in front of patient outcomes and experience. The author, Ford Fessenden, claimed that "extensive publicity about new, high-tech treatments convince[d] couples that doctors can solve any infertility problem, no matter how tough."[113] He argued that ART companies played on parental desire with the safety of the technology because it replicated human reproduction,

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[112] Strathern, *Reproducing the Future*, 5.
[113] Ford Fessenden, "Infertility, Inc.: The Stork Market," *Ladies' Home Journal* (New York, United States: Meredith Corporation, April 1996), 69.

so therefore could be seen as "natural." Strathern touched on this point as well, highlighting a quote from a booklet produced by Organon, a research-oriented pharmaceutical company that promoted IVF:

> "*You have a natural desire* for children and may have been trying for some time without success. Don't despair, there is still hope; thanks to major advances in medical science, many couples who were previously considered infertile can now produce healthy babies."[114]

Instilling promise within medical technologies and stressing the "naturalness" of parental desire was an attempt to increase public interest and trust in ARTs. In addition, the Organon booklet also stated:

> "This booklet focuses attention upon one technique, in particular, in vitro fertilization (fertilization that takes place outside the human body). It must be stressed that although fertilization occurs outside the body, the development and formation of a child takes place, *naturally, inside the womb*."[115]

Here, Organon was trying to get patients comfortable with the idea of IVF by emphasizing that the gestational period still takes place within the pregnant person's body. This "naturalization" of reproductive technologies was a theme that begins in this decade and became very visible in the 2000s, as I will discuss later in this chapter. In this period, marketing became a large part of the fertility industry (and it still is today). Fessenden warned *Ladies' Home Journal* readers that "despite the lack of scientific understanding, emotionally fragile couples are often lured into clinics by bullish marketing. The desire to capture a portion of the sizeable profits… has ignited intense competition in clinics."[116] This competition breeded further commercialization and inaccessibility of reproductive technologies. Other marketing tactics tried to capitalize on the emotions that most women feel when they have fertility struggles. In a 1995 *Cosmopolitan* article titled "What to Do If You Can't Get Pregnant," the author Nancy Intrator discussed both low-tech and high-tech fertility treatments on the market. The

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[114] Strathern, *Reproducing the Future*, 57.
[115] Ibid.
[116] Fessenden, "Infertility, Inc.," 70.

subheading, "Your eggs still aren't captivated by his sperm?" insinuated a problem with female reproductive capacities, and the article proceeded to present options for women to fix it. A similar sentiment is expressed in the 1990 *Cosmopolitan* article "In Vitro Fertilization: Here's How It Works," when the authors discussed the number of fertilized eggs inserted into the uterus versus the amount that actually implant. They said, "These figures drop as a woman ages and generally becomes less fertile. Considering the number of fertilized eggs that fail to implant in fertile couples, it isn't surprising that implantation is the weak link in infertile IVF patients."[117] This language placed blame on the productivity of the female reproductive system as women age and painted this decrease in fertility as objectively negative. This could raise anxiety in female readers and incentivize them to seek out fertility treatment earlier in life.

While the commercialization of the IVF industry certainly kept feminists feeling ambivalent about new reproductive technologies, a more positive social consequence that began to be identified in this decade was ARTs' ability to open up a space for redefining kinship relations. As Strathern pointed out, in the nineties, the predominant kinship structures were "imagined as social arrangements not just imitating but based on literally deploying processes of biological reproduction."[118] However, with the development of these technologies that allowed direct intervention in the reproductive process, ARTs called for a necessary questioning of these structures and their limitations. Strathern argued that by the nineties, ARTs had already "introduced into regular parlance the distinction between 'social' and 'biological' parenthood."[119] Historically, biological parenthood has been especially important for defining kinship in the West. Social parenthood refers to the validity of parental identity without blood relations being involved. With gamete donation, IVF, and gestational surrogacy,

[117] Robert Franklin and Dorothy Kay Brockman, "In Vitro Fertilization: Here's How It Works," *Cosmopolitan* (New York, United States: Hearst Magazine Media, Inc, March 1990).
[118] Strathern, *Reproducing the Future*, 3.
[119] Ibid, 19.

Labor of love

For years, Linda Schaper had tried desperately to have a baby. Then, her younger sister proposed a daring solution. The result: one set of triplets born to the two women—in two different cities and in two different years

Nearly six years into their marriage, the couple had endured unspeakable disappointment and tragedy in their efforts to become parents. But last year, Linda's younger sister Barb persuaded them to try something radical: Why not improve their chances of having children, she asked, by implanting embryos in both herself and Linda?

The unprecedented procedure, performed in May 1993, resulted in Linda's giving birth to a boy and a girl on Christmas Day in St. Louis, and Barb's delivering the Schapers' third child—a girl—in January in her hometown, Columbia, Missouri. Which means these unusual triplets were not only born to two women in different cities, but they also were born in different years.

But making medical history is less important to thirty-four-year-old Linda than the fact that she is now a mother. "I still can't believe it," she says, cradling one of her three babies and gazing at the others *(continued)*

Earlier this year, a woman stopped Linda and Marty Schaper on the street to admire their two newborns. "What beautiful twins!" the woman gushed. "They're so cute!"

"Thank you," replied the babies' proud father. "But, actually, we're having triplets. My wife's sister is having our third baby for us any day."

By now, the Schapers have become accustomed to quizzical looks and head-scratching, so extraordinary is their story.

BY DEBORAH DIAMOND

Figure 8 Deborah Diamond, "Labor of Love," *Ladies' Home Journal* (New York, United States: Meredith Corporation, September 1994), 173.

questions surrounding the categories of biological and social parenthood were put under a spotlight and could become more easily separated. This expansion of kinship relations was evident in magazine articles – an example being Deborah Diamond's 1994 piece "Labor of Love" for *Ladies Home Journal*. In this article, Diamond told the story of a couple struggling with infertility after a miscarriage from an ectopic pregnancy (where the embryo begins to grow in the fallopian tubes instead of the uterus). After going through this painful experience, the wife's sister, Barb, offered to be their surrogate and carry their baby through the use of IVF. In the nineties, this was considered an unorthodox proposal, but they found a doctor who would do it. The doctor said he felt confident in his decision because he could tell Barb "would view herself as aunt and not mother, even though she carried the baby."[120] This showed an evolving view of kinship relations as Barb could share bodily substance and give birth to the baby, but not view herself as the mother. Strathern was not the only author during the nineties to comment on the inadequacy of the biological model for kinship definitions. This topic was discussed of Franklin's 1997 book *Embodied Progress: A Cultural Account of Assisted Reproduction*. She stated that "'kinship' can no longer be defined as a question of 'natural,' 'biological' or 'reproductive' fact, as these criteria are no longer 'given.'"[121] Building off Strathern's

[120] Deborah Diamond, "Labor of Love," *Ladies' Home Journal* (New York, United States: Meredith Corporation, September 1994), 229.
[121] Franklin, *Embodied Progress*, 213.

work, Franklin supported her argument on the opportunity that these redefinitions present, as I will discuss further in chapter four.

What I find to be of paramount importance in Franklin's *Embodied Progress* is the way she wrote about the experience of new fertility technology, which was much more sympathetic to how real IVF patients felt about the process and how these views could influence future ART developments. I argue that Franklin's scholarship represented a turning point in the feminist discourse surrounding assisted reproductive technologies. While she recognized that the conversation around them was still largely ambivalent, Franklin also presented a new way of analyzing their impact that was more optimistic. In *Embodied Progress,* she introduced the concept of IVF as a '"hope technology' because it is the hope it promises, as much if not even more than a 'successful' outcome."[122] While, as discussed in chapter one, this hope could become harmful if a patient cannot recognize when to stop trying the IVF process, this depiction of it as a "hope technology" also reflected some of its positive social consequences for its future. Franklin argued that IVF, even if unsuccessful, could help people reach a point of acceptance regarding their infertility. For example, for people who were struggling to build families, Franklin argued that "what women look to IVF to provide *may be exactly what it takes away from them*. In other words, attempting IVF may initially be seen to be essential in order to feel that 'everything possible was done,' all routes were tried and no options were neglected."[123] While IVF may not bring people the actual baby they sought, they will likely have felt more confident in the fact that they would finish the process knowing they would not look back and feel they had not done all they possibly could to have a biological child. This attitude was also seen in women's magazine articles surrounding IVF since the technology became popularized. In the 1985 article "Test-Tube Baby" discussed in chapter two, author Laurie Neff ended the piece on an optimistic note, saying "Even if

[122] Ibid, 195.
[123] Ibid, 179.

I'm not pregnant, I know that my decision to go through IVF was the right one for me. I feel good knowing that I did the best I could."[124] Therefore, while some argued that ARTs took power away from women, this argument gave power back to women, as they had the knowledge and peace of mind that they tried their best to have a child.

Similarly, a notable aspect of the interviews conducted for Franklin's *Embodied Progress* were how positively the patients speak of IVF. While the process can be exhausting and time-consuming, most women seemed grateful to have had the opportunity. Even if IVF failed, women reported feeling "a sense of having contributed to something larger than themselves."[125] They felt good that they participated in something that could eventually develop to be more successful and help even more women achieve pregnancy. This belief in the possibility that IVF brings spoke a great deal to the hope that scientific progress brings to society. Here, we see how the sociotechnical imaginary plays a part in the development of reproductive technologies, and further proves my argument that Franklin's hope technology can be seen as a form of the sociotechnical imaginary. She argued that this "coping with failure by renewing hope for success might well be described as exemplifying a modernist attitude towards the possibility of an enhanced future through ingenuity and innovation."[126] IVF success rates are still low, meaning that undergoing the process requires a certain amount of faith in technology. Franklin claimed that "this 'leap of faith' may be facilitated by a strong belief in scientific progress."[127] The testimonies of these women having a collective vision for a future with more effective reproductive technologies for infertile couples spoke to the presence of a sociotechnical imaginary, and a positive future for IVF that will benefit and bring children to a greater number of people.

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[124] Neff, "Test-Tube Baby," 197.
[125] Franklin, *Biological Relatives*, 191.
[126] Ibid, 213.
[127] Ibid, 191.

The Aughts and the Tens

Feminist scholarship and popular media surrounding ARTs during the 2000s continued to build off of the new forms of relationality and kinship that began to circulate in the nineties. Scholar Charis Thompson built on the work of Strathern to discuss how the IVF clinic was a potent site for the flexibility of kinship relations. The chapter "Strategic Naturalizing: Kinship, Race, and Ethnicity" (2001) discussed the role of ARTs in what is perceived as "natural" familial relationality. Thompson argued "against a fixed or unique natural base for the relevant categories of kinship."[128] To support this claim, she used the examples of the ways in which "natural" parenthood was traced in different ways in the use of donor-egg IVF and gestational surrogacy to undermine the traditional kinship categories:

> "The two procedures draw on substance and genes as natural resources for making parents and children, but they distribute the elements of identity and personhood differently… whereas donor-egg IVF traces motherhood through the substance half of this separation, gestational surrogacy traces it through the genetic half."[129]

These forms of reproductive technologies constructed parenthood differently. In order for this process of reproduction to feel "normal" or "natural" to mothers, they found ways to biologically relate themselves to the child through blood relations or the sharing of bodily substance. A mother who underwent donor-egg IVF saw natural kin to her child because she still carried the baby for nine months, even if the egg was not hers. A mother who donated an egg for a gestational surrogate to bring to term felt natural kin to her child because although she was not carrying the baby, it was genetically her egg that produced the embryo. These different constructions of kinship showed the ways in which patients who use new reproductive technologies have found ways in which to make these societally unconventional modes of reproduction more normal to them. As Thompson pointed out, "ARTs, by definition, involve 'assisting' human reproduction," something that has historically

[128] Thompson, "Strategic Naturalizing," 149.
[129] Ibid, 148-155.

been seen as a natural process.[130] This compulsion to frame the use of these technologies as natural began to be ubiquitous at the turn of the twenty-first century, but also persists into today.

This "natural" or "normalization" became a large part of major scholarship in the aughts and the tens. Sarah Franklin discussed the normalization of ART usage in her book *Biological Relatives: IVF, Stem Cells, and the Future of Kinship* (2013). She argued that reproductive technologies, IVF especially, have been normalized in today's culture, in part because "it already belongs to techniques of normalization – including, among others, those of marriage, kinship, gender, scientific progress," etc.[131] Since IVF is related to so many of these already familiar narratives, it very quickly became a normal part of the process of reproduction. She pointed out that "IVF stages or performs exactly the same process… through which substance is stylized to produce the appearance of a 'natural sort of being'" (addressing the substance mimicking uterine fluid for embryo growth used in IVF).[132] Making it similar to the actual substance fertilization would normally happen in substantialized "a naturalized origin that then appears as if it were prior to the cultural expectations it confirms."[133] The naturalization of ARTs was one of the reasons the technology was able to grow in popularity. Fears of playing God or intervening in the reproductive process went away when the patient was able to frame the treatment as natural.

This process of normalization could also be found in the women's magazine articles of the aughts. In a 2001 article for *Ladies' Home Journal*, author Carol Lynn Mithers discussed how more women began sharing their infertility struggles and experiences with treatment. Instead of remaining "a hidden problem," today, "sufferers are beginning to speak up."[134] One woman she interviewed

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130 Ibid, 147.
131 Franklin, *Biological Relatives,* 6.
132 Ibid, 183.
133 Ibid.
134 Carol Lynn Mithers, "'Why Can't I Have Another Baby?': The Newest Infertility Treatments," *Ladies' Home Journal* (New York, United States: Meredith Corporation, August 2001), 68.

discussed how she found "an online support group that she calls 'a huge help'" in accepting her infertility and finding the courage to seek medical treatment for it.[135] In articles from earlier decades, women were secretive about their fertility struggles. This recognition that more people were talking about it and forming online support groups was a testament to the normalization of ART usage. Another article that demonstrated this normalization was "Longing for a Baby" by Beth Johnson. Published for *Good Housekeeping* in 2001, Johnson put together testimonies by famous women who used IVF, employing the idea of "celebrities, they're just like us!" to normalize IVF treatments. Introduced to the readers with catchy taglines, the women in the article all gave their vow of support to the use of ARTs. Courteney Cox – "From 'Friend' to mom" – discussed her struggles getting pregnant due to a condition where the antibodies in her blood attacked the fetus as a foreign presence.[136] Beginning the process of IVF, she stated, "In vitro is a

The Dixie Chicks: Finally singing sweet lullabies

Though still in their early 30s, two of the three Dixie Chicks had problems getting pregnant. Guitarist and banjo player Emily Robison, 32 (married to country singer Charles Robison), and her sister, fiddler Martie Maguire, 34 (married to Gareth Maguire, an actor), both had to seek medical help.

FERTILITY CHALLENGE Both Emily and Martie found themselves unable to conceive naturally, though in Emily's case, a cause was never identified. For Martie, a surprisingly common medical condition required surgery before her attempts to conceive could continue.

HOW THEY OVERCAME Emily went through more than two years of fertility treatments, including exploratory laparoscopic surgery (in which a tube with a small camera attached is inserted in the area of the navel) to determine if there were any blockages or scarring within her uterus or fallopian tubes. After doctors found nothing, Emily underwent several rounds of artificial insemination before finally turning to IVF. Martie found it difficult to see her sister go through all that. "It's tough having to watch your sister give herself injections, worry about a million medications, and see different doctors in different cities on the road," Martie said at the time. Martie herself then spent two and a half years trying to conceive. Ultimately, she required laparoscopic surgery to remove growths caused by endometriosis (see "The Infertility Epidemic," page 121). She then went through several rounds of fertility drugs to increase her chances of conceiving. "I'm 33, and I realize fertility's not a given, it's a gift," Martie wrote on the band's Web site when she announced her pregnancy. "I can't tell you what an emotional ride this road to getting pregnant has been. I know that compared to some couples' struggles, ours has been relatively easy, but I will say that we have an all-new appreciation for the miracle of life."

HAPPY ENDING On November 22, 2002, Emily delivered her son, Gus, eight pounds 13 ounces, with sister Martie in the room videotaping the entire event. Last year, while touring, Martie learned that her attempts to conceive had finally paid off. On April 27, 2004, she gave birth to beautiful twin daughters, Eva and Kathleen, whose photos were posted on the Chicks' Web site only hours later.

Martie Maguire proudly carried twins

Emily Robison showing off her pregnancy glow

Emma Thompson: A long journey to motherhood

The Oscar-winning English actress, now 45, and her actor husband, Greg Wise, 38, starred together in the film *Sense and Sensibility*. They have been together since 1996, and their relationship survived Emma's miscarriage in 1997, when she was 38.

FERTILITY CHALLENGE After her miscarriage, Emma was diagnosed with polycystic ovary syndrome, a condition in which the ovaries are enlarged and have many small follicles or cysts, which can prevent ovulation or cause infrequent ovulation. PCOS is a leading cause of infertility and is the most common reproductive syndrome in women of childbearing age.

HOW THEY OVERCAME Emma pulled back from her film career to focus full-time on having a child. To combat the effects of PCOS, she underwent a grueling two-year regimen of infertility treatments and IVF. Finally, her efforts paid off.

(SEMI-)HAPPY ENDING In December 1999, at age 40, Emma gave birth to daughter Gaia. Last summer, Emma and Greg were married, with little Gaia in tow. However, the actress recently revealed that further IVF attempts have failed. "I would have desperately liked to have more children, and it's been a great agony for me," she has said. Yet she's grateful for all she does have, acknowledging that "there are thousands and thousands of women like me who can't have children [at all]."

Emma and husband Greg were all smiles as they awaited their baby.

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Figure 9 Beth Johnson, "Longing for a Baby," Good Housekeeping (New York, United States: Hearst Magazine Media, Inc, August 2004), 119.

[135] Ibid.

[136] Beth Johnson, "Longing for a Baby," *Good Housekeeping* (New York, United States: Hearst Magazine Media, Inc, August 2004), 117.

wonderful thing people can do in this day and age, and I'm lucky enough to be able to afford it."[137] As seen in figure two, Martie Maguire of the country band The Chicks – "Finally singing sweet lullabies" – became pregnant after getting a laparoscopic surgery to remove growths formed by her endometriosis that inhibited her from conceiving.[138] This article was a stark contrast to those that I analyzed from the seventies and eighties, when couples admitted to keeping their ART use a secret from everyone in their life. In 2004, Johnson's article showed how ARTs like IVF became a more mainstream and widely accepted mode of reproduction.

The normalization of this technology, in conjunction with the commercialization of the ART industry I discussed in the nineties, led to direct marketing to women, encouraging them to think about their fertility at an early age. Egg freezing through cryopreservation is, in comparison to IUI and IVF, a recent technology. It only became possible for women to plan for future pregnancies by freezing their eggs from the early to mid-2000s. A *Cosmopolitan* article in 2002 titled "Are You Waiting Too Long to Have a Baby?: Scare Tactics?" (as seen in figure ten) addressed how cryopreservation companies attempted to incentivize young women to use this technology to increase their chances of having kids before it is "too late." Author Gina Zucker stated that the

ARE YOU WAITING TOO LONG TO HAVE A BABY?

Experts are warning that if you put off getting pregnant, it may not happen at all. To help you avoid a full-blown fertility freak-out, we've uncovered what you need to know to master your biological clock. By Gina Zucker

■ The morning she turned 30, Laura* woke up in a panic. "I was convinced that before I knew what hit me, it would be too late for me to have kids," she recalls. "I became terrified of finding myself in the same situation as Charlotte from *Sex and the City*, who wanted to get pregnant but couldn't."

Though Laura's fears were probably premature, they weren't without some basis. It's a fact that each year after the age of 35, the average woman's chances of conceiving decline by 5 to 10 percent, according to Michael Soules, M.D., recent president of the American Society for Reproductive Medicine (ASRM). But while that has always been the case, lately, fertility doctors have been putting more pressure on young women not to wait to start a family. The ASRM—an organization of fertility specialists—has even launched an ominous public-service campaign warning women that "advancing age decreases your ability to have children." The not-so-subtle reminder, says Dr. Soules, is justified since "so many women come to us when they're 40 and infertile, saying 'Nobody told me.'"

STALLING FOR TIME

Nonetheless, young women today seem to be pretty aware—and somewhat worried—about the fact that the longer they wait to have kids, the more remote their chances of becoming a mother might be. In a Cosmo Web poll of nearly 700 readers, 58 percent said they felt anxious about not being able to get pregnant one day. At the same time, however, an overwhelming 81 percent feel it's important to establish a career before having kids. "Ideally, I'd like children by age 29, but that seems unlikely since I'm still searching for the right guy *and* the right job," admits Jill, 24.

*Some names have been changed.

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Figure 10 Gina Zucker, "Are You Waiting Too Long to Have a Baby?: Scare Tactics?," *Cosmopolitan* (New York, United States: Hearst Magazine Media, Inc, January 2002).

[137] Ibid.
[138] Ibid, 119.

"ASRM – an organization of fertility specialists – even launched an ominous public-service campaign warning women that 'advancing your age decreases your ability to have children."[139] They justified it by saying many women have come to them in their forties and seemed unaware of this fact. Campaigns like this assured young women that by freezing their eggs at a young age, they would have the "security" of viable eggs once they were ready to have children (something they did not market: the success rate of IVF using cryopreserved eggs still being relatively low). Zucker commented that "while there are numerous role models who reinforce that idea that mature motherhood is not only possible but cool (Madonna, Susan Sarandon, and Melanie Griffith, to name a few)," – another use of celebrity culture to encourage a form of reproduction – "the scientific community is cautioning that procrastination may result in an inability to get pregnant."[140] This article, which described a push for young women to think about their fertility earlier so they would invest in services, is significant. It showed the rapid normalization and market orientation of ART technology in the 2000s.

Another notable finding from my archival research was, in fact, the articles I *did not* find. As I worked my way first from the 1970s up to the 2000s, I found fewer and fewer articles addressing reproductive technologies as time went on. My research into articles for the aughts came up shorter than all the previous decades I had researched. Conclusions can also be drawn by looking at this negative space in the archive. I argue that this lack of coverage of ARTs in women's magazines closer to the present day speaks to the normalization of reproductive technologies after the turn of the twenty-first century. This further supports Franklin's claims of the normalization of IVF in recent years. When ARTs were new and novel, magazines covered them widely, knowing it would attract a large readership. As the magazines of the late seventies and early eighties showed, women were still hesitant at the beginning of its implementation. Reading about it in familiar and popular publications

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[139] Gina Zucker, "Are You Waiting Too Long to Have a Baby?: Scare Tactics?," *Cosmopolitan* (New York, United States: Hearst Magazine Media, Inc, January 2002), 135.
[140] Ibid.

was a useful way to gain information. In addition, the controversy that it brought over whether these practices were moral or ethical attracted more people to read about them. However, after the widespread popularization of ARTs in the eighties, publishers gave it less and less attention as the years went by. This could speak to a loss of curiosity in ARTs since they became such a normal part of reproductive practices in the United States. It is interesting how the increased commercialization of ARTs correlated with the decreased popular media coverage. This could be associated with the increase in marketing of reproductive technologies by ART companies and clinics themselves (seen in the Organon example earlier), making the need for promotion of ARTs in women's magazines unnecessary for the growth of the industry. This negative space in the archive can tell us just as much about the normalization of ARTs as the articles themselves.

This chapter has explored the rapid growth in the use of IVF and the ART industry at the turn of the century. In addition, it showed a new perspective of feminist scholarship on ARTs. Sarah Franklin's hope technology and other scholars' visions of opportunity for new, more inclusive definitions of kinship harbor a more positive feeling for IVF than seen in earlier feminist scholarship. Furthermore, the employment of the sociotechnical imaginary helped craft this optimistic view of what assisted reproductive technologies could become in our future. The normalization of ARTs contributed to this since they were no longer treated with hesitation and ambivalence as most new technologies in society are. The magazine archives reflected this shift as well, with more positive associations being made with the technology in articles. For example, a woman's surrogacy is described as a "labor of love." The family dynamics in the same article also showed new ideas of kinship being formed with the use of ARTs. Lastly, the lack of magazine articles in more recent years covering ARTs is telling of their more solidified position as a common mode of reproduction.

In my next chapter, I will explore the entanglement between Franklin, Jasanoff, and Kim's concepts, bringing in the idea of coproduction from the sociotechnical imaginary to the discussion of

ARTs as hope technologies. In addition, I will address in more specificity how ARTs have changed the perspective we can have on social structures that we see as closely related to reproduction, such as kinship, motherhood, and sexuality. Through these final discussions, I will strengthen my argument around the perspective shift of ARTs over time, and how the sociotechnical imaginary has been used, and still is used, in looking at the social consequences of ARTs and how society could shape these in the future.

CHAPTER 4: COPRODUCTION AND CHANGING DEFINITIONS

As I've explored in this thesis, the attitudes around the ever-evolving field of reproductive technologies have seen many changes in just the last few decades. The more positive perspectives of ARTs in recent years have allowed women to gain more ownership over their infertility experience, which is a step in the right direction for reproductive autonomy. This does not mean that ARTs do not exist without their limitations. Large strides must be made in order to provide equal access to these technologies that every person in the United States is entitled to. However, since ART usage does not look to be slowing down any time soon, I think it is also valuable to investigate the good aspects they have brought to society and the conversation around reproduction. The ART scholarship of the nineties to the present day showed us that feminists could agree on one thing: a positive outcome of reproductive technologies was the way they have helped us reevaluate our society's ideas of procreation, kinship, and parenthood. The rethinking of these concepts could help us extend these ideas to include more nontraditional forms in our mainstream culture. This reevaluation also plays into the sociotechnical imaginary around ARTs, what the future may hold for the industry, and how we imagine social structures surrounding reproduction.

This thesis has attempted to draw connections between the sociotechnical imaginary and Sarah Franklin's concept of ARTs as hope technologies. The shift in the framing of ARTs shown in popular media helps to link these concepts together, as they show a more positive attitude towards this technology both over time and what they could bring to the future. As discussed in my introduction, an important aspect of the sociotechnical imaginary is the idea of coproduction. In this final chapter, I will use this concept in application to the emergence of ARTs to show the ways in which they have impacted the evolution of society and, simultaneously, how society has impacted their development. This will further solidify the connection between the sociotechnical imaginary and hope technology,

as well as be a useful framework for the ways in which ART's have influenced our cultural definitions of kinship, gender, and motherhood.

Coproduction

In their 2015 book *Dreamscapes of Modernity*, Jasanoff and Kim defined coproduction as the way in which "knowledge and its material embodiments are at once products of social work and constitutive forms of social life."[141] Technology and society do not shape our cultural norms and values any more than our norms and values shape technology and society. These things are coproduced; it is a two-way street of social and technological development. This approach is especially applicable to projects in STS because it "calls attention to the social dimensions of cognitive commitments and understandings."[142] Historians and technological analysts have continuously reminded society that no technology can be made without humans and the powerful cultural and social institutions that influence their decisions on what to make, how to make them, and when. Is it easy to think of the social repercussions of the technology we create, but it is equally as important to consider the conditions under which it was created.

An example that showed the importance of looking at the context in which technology is created is the development that many robots and AI programs have shown racial biases. The 2020 film *Coded Bias*, directed by Shalini Kantayya, explored this issue. The documentary followed the story of Joy Buolamwini, a researcher at the Massachusetts Institute of Technology Media Lab, and her discovery that facial recognition software could not accurately read dark-skinned faces.[143] When she dug deeper into this issue, she found that the software had a built-in bias that reflected the biases of

[141] Sheila Jasanoff, "Future Imperfect," 3.
[142] Sheila Jasanoff, "The Idiom of Coproduction," in *States of Knowledge: The Co-Production of Science and Social Order*, ed. Sheila Jasanoff (New York: Routledge, 2004), 3.
[143] *Coded Bias*, Documentary (7th Empire Media, 2020).

its human creators. The team that created the facial recognition technology was primarily white men, and the algorithm had trouble detecting Black and female faces. While we normally think of science and technology as impartial or neutral, this example demonstrated how the context which it is created can have a large influence on the end result. Subsequently, this end result has the danger of exacerbating preexisting social issues. In the film, Buolamwini emphasized that this flawed technology was having real impacts on marginalized communities. The corporate businesses and law enforcement branches that employed this biased software were therefore discriminating against those with dark-skinned or feminine faces, even if they were not aware of it. If more Black or female engineers were recruited to help build this technology, maybe this bias would not have existed. Therefore, this is an example of why it is so important to not only assess both the outputs *and* the inputs for the making of technology.

This idea of coproduction is useful when discussing the development of assisted reproductive technologies as it allows us to see how they came to be so double-edged. As Sarah Franklin pointed out in *Biological Relatives*, philosopher Raymond Williams urged "us to read technological change neither as an inevitable process of historical invention nor as a response to human needs, but 'in terms of its place in an existing social formation' – taking into account both the intentions that produced it and its changing role as it evolves over time."[144] Robert Edwards and Patrick Steptoe, the two scientists credited for the birth of Louise Brown, developed IVF with specific beliefs and worldviews about how the technology should be used and what it could lead to. It is notable to mention that Robert Edwards, for a large portion of his career, was a member of the British Eugenics Society.[145] For him, developing IVF was not just about curing infertility, but working towards a larger goal for reproductive practices. This was one of the reasons why author Susanne Kummer claimed that "historically, it is

[144] Franklin, *Biological Relatives*, 4.
[145] Susanne Kummer, "Made, Not Begotten: IVF and the Right to Life Under Conditions," *The Linacre Quarterly* 89, no. 4 (November 2022): 425, https://doi.org/10.1177/00243639221116160.

evident that the ethical conflicts of IVF have not been a consequence of later methodological improvements or emerging technologies, but have been inherent to the procedure from the beginning."[146] This quotation perfectly captures Jasanoff and Kim's idea of coproduction; Edwards' personal beliefs and scientific goals had an impact on the implementation of IVF, making the context of its creation important to study. In 1999, Edwards declared that a time would come when "we will have to examine the quality of our children" and believed IVF would enable humans to "improve the genetic pool of mankind."[147] While stratified reproduction is often seen as an outcome of ARTs, it may, in fact, have already been in mind during its creation, proving the co-constitutive argument about the development of ARTs. These ideas that ARTs were created with can even be found in the lack of articles on fertility technology in publications aimed at a Black, female readership. Again, by looking at the negative space in the archive, we see the ways in which reproductive technologies have evolved to a particular position in society, and not by chance. Though the sociotechnical imaginary of ARTs by the public (curing infertility) took on a different vision than Edwards' (genetically improving human society), this history suggests forces at play from the beginning that could have pushed IVF to encourage reproduction for certain populations. It is for these reasons that many scholars believe ARTs themselves should not be put under a moral and ethical lens, but rather, the conditions that they were created and currently exist. In the United States, ARTs have flourished into a society built on inequitable structures. Historians of science and technology have shown us that these racist and patriarchal systems are often reproduced in the technology we develop. Addressing the systemic inequities of the US would then, hopefully, yield more unprejudiced technology. Therefore, coproduction is a key concept in investigating the history of ARTs.

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[146] Ibid, 424.
[147] Ibid, 425.

Kinship

Another aspect of ARTs that the coproduction framework supports is the development of our kinship relations. As I have addressed in this thesis, one of the new questions that ARTs have raised is how we define kinship, as new ways of relating to each other are made possible by assisted reproduction. Many feminist scholars today not only believe that kinship definitions are changing, but they also recognize how these concepts are coproduced with technology. For example, in "Strategic Naturalizing," Thompson argued that "the facts and practices of biomedicine and the social meanings of kinship are used to generate and substantiate each other."[148] Her take on the nature versus nurture debate in psychology is one of coproduction. Without trying to diminish either influence, she simply stated that the "coproductive thesis about nature and culture is no more a 'culturalist' position than it is a 'naturalist' one."[149] Marilyn Strathern echoed Thompson's ideas on the coproductive nature of kinship. She argued that kinship is what connects society and nature:

> "Human kinship is regarded as a fact of society rooted in facts of nature. Persons we recognize as kin divide into those related by blood and those related by marriage, that is, the outcome of or in prospect of procreation. However, the process of procreation as such is seen as belonging not to the domain of society but to the domain of nature. *Kinship thus connects the two domains*."[150]

When discussing kinship, one is discussing the social construction of what we take to be natural. ARTs have caused us to rethink this domain and, therefore, have influenced the way we relate to one another socially.

These changing ideas of kinship are one of the positive aspects of ARTs that feminist scholars have identified around the nineties and the aughts. But how exactly are they changing, and how is this positive? Strathern claimed that "unless a relationship is grounded in some intrinsic or natural connection, then Euro-Americans are likely to think of it as artificial, and to be thought artificial is to

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[148] Thompson, "Strategic Naturalizing," 147.
[149] Ibid, 176.
[150] Strathern, "Reproducing the Future," 16.

be open to uncertainty."[151] However, this uncertainty may not necessarily be a bad thing as it has created space for redefinition. The kinship structures and ideals of the late twentieth century were exclusionary towards many types of families who did not adhere to mainstream definitions of kin. For example, before the invention of IVF, many gay and lesbian couples who built their families through adoption relied on ideas of social parenthood to prove their validity to society. However, as ARTs made social parenthood more popular, this larger definition of family relations as both biological and social encapsulated more types of families feel legitimate in their relationality. Barbara Moon's 1979 article (discussed in chapter two) speaks to this change:

> "The very slogan… 'Every woman has the right to have a child' – was already being used to justify unmarried motherhood; in the decade to come, it would be pressed into the campaign for artificial insemination by donor (AID) on demand: by lesbians wanting children but not husbands, and by at least one nurse from Arizona who simply didn't want the complications of a mate. Given the right cultural climate, artificial insemination was being perceived by at least some women as the ultimate emancipation from the bullying logic of male-female relationships."[152]

In this excerpt, we see that the use of AID made new family structures more common and could be seen as a liberating tool for people. The use of AID by lesbians was viewed positively. Cathy Herbrand's article "Co-Parenting Arrangements in Lesbian and Gay Families: When the "Mum and Dad" Ideal Generates Innovative Family Forms" discussed how queer families have always challenged the traditional nuclear family model. Herbrand highlighted how lesbian and gay parents can be considered "postmodern family pioneers" as they "play a key role in social change by contesting mainstream values."[153] However, her article also pointed out that although this is true, queer parents often still have felt compelled by society to try to recreate the traditional family model. Interviews with

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[151] Ibid, 30.
[152] Moon, Barbara. "Test-Tube Babies: Joyful Break-through or Sinister Portent?" *Chatelaine*, Toronto, Canada: St. Joseph Communications, February 1979, 112.
[153] Cathy Herbrand, "Co-Parenting Arrangements in Lesbian and Gay Families: When the 'Mum and Dad' Ideal Generates Innovative Family Forms," *Families, Relationships and Societies* 7, no. 3 (November 1, 2018): 450, https://doi.org/10.1332/204674317X14888886530269.

queer parents confirmed "the pressure experienced by gay and lesbian people to 'fit in' when children are involved, and thus to acquire social and political inclusion and legitimacy."[154] Therefore, the use of ARTs, their promotion of all different kinds of parenthood, and the way they yield a reexamination of our kinship structures, could eventually lead to a more inclusive definition of kinship and family that would not leave queer people pressured to build their families in a certain way. Through a lens of queer justice, this expansion of kinship relations is highly valuable.

Motherhood

As discussed in chapter three, ART scholarship in the nineties brought to light the distinction between biological and social motherhood. However, the nature of motherhood under the patriarchy was not a new topic of conversation to feminists in the nineties but has been prominent since the beginning of the feminist movement in the United States. In the 1980s, when Gena Corea published *The Mother Machine*, she (and other feminists of the time) argued that ARTs have put more pressure on women to have children. As I discussed in chapter two, more accessible ARTs created a society that gave hope for every woman to become a mother. However, this idea "reinstates the assumption of a universal maternal desire as a part of women's nature," when that has never been the case.[155] Reproduction and motherhood being so closely entangled suggested that motherhood, like reproductive capability, was a part of every woman's experience. This idea is echoed in the magazine articles of the early seventies that displayed strict gender roles in conversations about reproduction and infertility. Therefore, feminists raised worries about "assisted-reproductive technologies… reinforcing the 'cult of motherhood.'"[156] Our society has been socialized to see all women wanting children as the norm. For example, Steptoe also believed that "women who deny [the biological drive

[154] Ibid, 462.
[155] Neyer and Bernardi, "Feminist Perspectives on Motherhood and Reproduction," 170.
[156] Mamo, "From Whence We Came," 50.

to reproduce], or in whom it is frustrated, show disturbances in other ways."[157] Within this ideology and as ART usage has increased, a question emerged among those with beliefs like Steptoe's: why are women and AFAB people *not* utilizing this technology? There was now no excuse for being childless, as there was a whole host of technology to help one conceive. In other words, increased "universal access to ART may weaken a woman's struggle against social sanctions of infertility."[158]

Through this perspective, Corea's argument may have had some value. However, it is in this topic that the double-edged nature of ARTs came out once again, as ARTs have created more paths for women *away* from motherhood as well as towards. Abortion access allows women to not become mothers if they do not want to or do not feel ready. Birth control allows women more sexual freedom without the fear of becoming pregnant. ARTs help both in making people parents and keeping people from becoming parents. The increased use of birth control services made women who did not seek children more normalized, which was of benefit to queer women who were historically outcasted for being childless, whether they wanted to be or not. ARTs also made it easier for women to have children at older ages, enlarging "women's choices of voluntary and 'willed' motherhood, that is, to have as many children as they want at the time when they would like to have them."[159] Cryopreservation technology allowed women to increase their chances of getting pregnant later in life. Therefore, not only did ARTs create ways for women to stay childless, but they created ways for women to stay childless until they no longer wanted to be. Fertility technologies like gamete donation and artificial insemination also threw the traditional ideas of parenthood into question. Surrogacy especially raised questions surrounding perceptions of motherhood. The process "threatens dominant Western ideologies that presume an indissoluble mother-child bond" that had historically been seen

[157] Ferber et al., "Towards the Two 1978 Births," 43.
[158] Neyer and Bernardi, "Feminist Perspectives on Motherhood and Reproduction," 170.
[159] Ibid, 169.

as essential to the experience.[160] Surrogacy deconstructed "motherhood into genetic, birth, adoptive, and surrogate maternities, with the potential for three 'biological' mothers to a single parent."[161] It begged the question: who is the "real" mother? An argument could be made for each, but overall, this expansion of the idea of motherhood was a step towards a more inclusive culture.

Looking Forward

As I have shown, ARTs have resulted in the evolution of definitions for social structures such as kinship and motherhood, which, while creating uncertainty, also provides an opportunity for progressive change. Additionally, the discourse around ARTs has shifted from a techno-pessimistic view during the late twentieth century to a techno-optimistic one at the start of the twenty-first. Despite recent changes to the US landscape of reproductive autonomy that have hindered access to technologies like abortion and IVF, people still see a future where ARTs are more accessible and more effective.

It is clear that legislation to regulate the ART industry still has a long way to go. This does not just apply to the US; ARTs around the globe have an extensive variety of usage standards, all existing in their own specific social, political, economic, and religious contexts. Furthermore, the public health inequities in the US must be addressed. This country's private, decentralized healthcare system is incredibly dysfunctional and is disappointing for a nation that claims to be a global power at the forefront of medical and scientific progress. Today, when reading the news, it is hard not to become anxious and discouraged by the many crises happening worldwide. One of these events was the overturning of *Roe v. Wade*, which was a massive setback for reproductive autonomy in the United States. It also was a representation of the politicization of fundamental human rights that seem to be

[160] Ibid.
[161] Ibid.

so common in recent years. If the analysis of ARTs in the seventies and the eighties was the dominant narrative of today, I believe it would be much more difficult to grapple with recent events. The current tense political climate and widespread injustices happening are hard enough on their own. In the context of the *Dobbs* decision, if we looked at the impact of ARTs on women's reproductive autonomy through the techno-pessimistic lens of the seventies and eighties, the effort to secure reproductive rights for people in the United States – no matter their class, race, or gender – would seem insurmountable. However, outlooks are changing. I argue that the positive shift in the narrative of ARTs paired with the concept of the sociotechnical imaginary can help us look toward a more positive future for the landscape of reproductive rights in the United States. Jasanoff and Kim's concept outlined how techno-optimism can be used as a tool for social progress. With the attitudes surrounding ARTs and their social consequences already beginning to take a more optimistic turn, I believe that there is hope for the future development of assisted reproductive technologies. While efforts by conservatives in government have tried to take these fundamental human rights away from people, I believe this optimistic perspective of ARTs in recent years leads us one step closer to reproductive justice in the United States.

AFTERWORD: Reproductive Technologies Post-Dobbs

The term "reproductive justice" combines "reproductive rights" with "social justice" to create a more defined concept and political movement. This framework, founded by a group of Black women at the 1994 International Conference on Population Development, takes a human rights-based approach. It draws attention to laws and policies that deny people the human right to bodily autonomy. Reproductive justice relies on three primary pillars: "(1) the right *not* to have a child; (2) the right to *have* a child; and (3) the right to *parent* children in safe and healthy environments."[162] By these principles, equitable access to ARTs is integral to reproductive justice in the United States. The *Dobbs v. Jackson Women's Health Organization* decision on June 24, 2022, was a deliberate setback for reproductive rights. This decision held that the Constitution does not confer the right to an abortion, overturning the 1973 *Roe v. Wade* ruling. Quickly after, conservative states began to criminalize abortion care, and some threatened to prosecute any people who helped those travel out of state to seek services. Additionally, it is evident that already this case has had an impact on the use of assisted reproductive technologies across the country.

The *Dobbs* decision did not specify a viability standard for fetuses, which has created room for different interpretations of when "life" begins.[163] As a result, some states have enacted personhood laws that threaten IVF practices. For example, in February 2024, the Alabama Supreme Court ruled that frozen embryos should be considered children.[164] The case was brought by couples whose embryos were accidentally destroyed at a hospital in Mobile. The court ruled that the couples could

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[162] Ross and Solinger, "A Reproductive Justice History," 9.
[163] Ashley Ulker, M. Blake Evans, and LaTasha B. Craig, "The Impact of the Dobbs Decision on In-Vitro Fertilization and Fertility Care," *Current Opinion in Obstetrics & Gynecology* 35, no. 4 (August 1, 2023): 306–10, https://doi.org/10.1097/GCO.0000000000000888.
[164] Roni Caryn Rabin and Azeen Ghorayshi, "Alabama Rules Frozen Embryos Are Children, Raising Questions About Fertility Care," *The New York Times*, February 21, 2024, sec. Health, https://www.nytimes.com/2024/02/20/health/ivf-alabama-abortion.html.

sue for the wrongful death of a minor, applying this statute to "'unborn children,' with no exception for 'extrauterine children.'"[165] Fearing civil and criminal liability, many doctors and clinics throughout the state halted their IVF practices. This is due to the standard in the IVF process to extract as many eggs as possible, fertilize them, and then freeze the embryos. In many clinics, "only one embryo is transferred at a time into the uterus in order to maximize the chances of successful implantation and a full-term pregnancy."[166] Depending on the success of the implantation, this means that some frozen embryos are no longer needed for treatment and are disposed of as medical waste or donated to research. This ruling, therefore, could result in the criminal charging of IVF clinics for the wrongful death of a minor.

News of the ruling caused eruptions of criticism throughout not only the state but all over the nation. Barely two weeks later, Alabama lawmakers passed legislation to protect IVF providers from civil and criminal liability, which also extended to patients receiving these services.[167] It turns out that Republicans use IVF too, and their own reproduction was then impacted by this court ruling. This quickly enacted legislation showed urgency among the Republicans "to protect I.V.F. treatments, even if that meant sidestepping the thorny contradictions between their pledge to protect unborn life and fertility treatment practices."[168] While this measure has allowed clinics to reopen and fertility treatments to continue, it completely ignores the question of fetal personhood, making future use of IVF in Alabama a trepidatious process. It will limit future infertility patients' ability to sue when accidents with embryos happen.[169] This legislation is simply a band-aid for the issue as legislators scramble to justify their contradictory rulings.

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[165] Ibid.
[166] Ibid.
[167] Jan Hoffman, "Alabama's I.V.F. Protection Law Will Reopen Clinics but Curb Patient Rights," *The New York Times*, March 6, 2024, sec. Health, https://www.nytimes.com/2024/03/06/health/ivf-law-alabama.html.
[168] Emily Cochrane, "Alabama Passes Law to Protect I.V.F. Treatments," *The New York Times*, March 7, 2024, sec. U.S., https://www.nytimes.com/2024/03/06/us/politics/alabama-ivf-law.html.
[169] Ibid.

Therefore, this detrimental overturning has more of an impact on reproductive rights than just abortion access. The repercussions of the *Dobbs* decision impact not only those who seek abortions so as *not to have* children, but also those who seek fertility treatments in order *to have* children. An important message of the reproductive justice movement is that *Dobbs v. Jackson* did not ban abortions, it only banned safe abortions. The history of ART usage shows that no matter the political or legal context, people will still find ways to access abortion care. Similarly, Drucker points out that "when a country reduces or forbids access to fertility technologies and procedures… those circumstances do not change its citizens' desires for children."[170] The *Dobbs* decision impacting access to ARTs will only cause patients to travel out of state or out of the country to seek these services. As a result, Drucker argues that this ruling not only impacts the United States but also the global ART industry.[171]

While the impact of *Dobbs* on fertility technologies should not be diminished, it is significant to note that decreased access to abortion care increases pregnancy risks. The 2022 ruling has left millions without access to essential healthcare. A fact sheet by the Biden administration states: "Today, more than 23 million women of reproductive age—one in three—live in one of the 18 states with an abortion ban currently in effect."[172] With this statistic in mind, here are some ways readers can help the reproductive justice movement in the US:

Learn about abortion policies in your state so you can participate in dialogue about and protests for reproductive rights. Abortion bans disproportionately impact people who already face discriminatory obstacles to healthcare. Therefore, abortion funds and independent providers need support. These can be found at abortionfunds.org and abortioncarenetwork.org. Another way of

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[170] Drucker, *Fertility Technology*, 191.
[171] Ibid, 192.
[172] The White House, "Fact Sheet: Biden-Harris Administration Highlights Commitment to Defending Reproductive Rights and Actions to Protect Access to Reproductive Health Care One Year After Overturning of Roe v. Wade," The White House, June 23, 2023, https://www.whitehouse.gov/briefing-room/statements-releases/2023/06/23/fact-sheet-biden-harris-administration-highlights-commitment-to-defending-reproductive-rights-and-actions-to-protect-access-to-reproductive-health-care-one-year-after-overturning-of-roe-v-wade/.

supporting the rights of women and AFAB people is by electing individuals from these groups; pay attention to candidates' stances on reproductive justice when going to the polls. Contact your state representatives and urge congressional representatives to support the Women's Health Protection Act (WHPA), which would create new legal protections for the right to abortion care.[173] Planned Parenthood provides sexual health care all across the United States; learn how you can give support at www.plannedparenthood.org/get-involved.

[173] Justin Goldberg, "Women's Health Protection Act (WHPA)," Center for Reproductive Rights, June 23, 2023, https://reproductiverights.org/the-womens-health-protection-act-federal-legislation-to-protect-the-right-to-access-abortion-care/.

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