Chapter 5

Optimization within Disrupted Reproduction

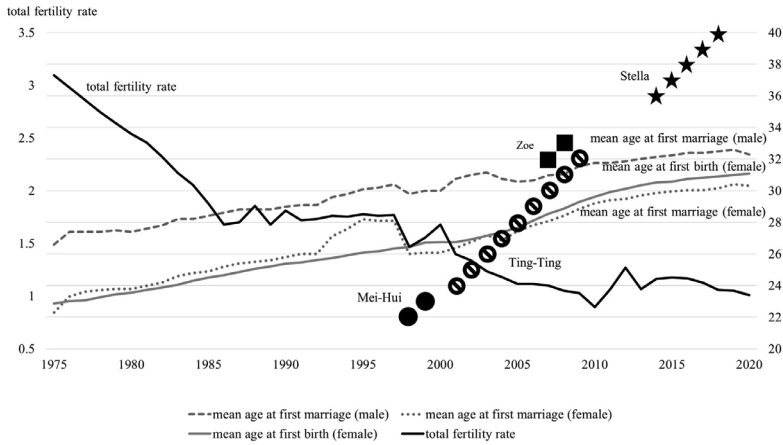
Legislator Lu: "One at a time." Isn't implanting one embryo at a time better than implanting three embryos?
Dr. Chen: The issue is that *patients hope to get pregnant by one time*. The success rate is 20 percent for one-embryo transfer. If one at a time, they would need to come to the hospital many times.
Legislator Lu: You hope that they can achieve success just by one time?
Dr. Chen: Yes. … Those countries who can have single embryo transfer have insurance coverage, *so that they can endure failure*. However, most countries do not have insurance coverage for IVF.
(Legislative Yuan Gazette 2006: 157, emphasis added)

No laywomen were invited to present their IVF expectations and experiences at the Legislative Yuan during the stipulation of the Assisted Reproduction Act in 2006. Instead, it was left mostly to the legislators, the governmental officials, and the invited doctor to express what women wanted. As shown in chapter 4, the feminist legislator Shu-Ying Huang articulated the various risks that women may meet: failure to become pregnant, fetal reduction, and multiple pregnancy. To balance the needed success rate and the risks to women's health, Legislator Huang proposed four as the maximum number of embryos to transfer, which was supported by Dr. Shee-Uan Chen, chair of the ART center at the prestigious

National Taiwan University Hospital. When another legislator, Mr. Tien-Lin Lu, raised the question of single embryo transfer (SET), Dr. Chen acted as a spokesperson for women and revealed their hope: to get pregnant from their first round of IVF. He also implied that, in the absence of health insurance coverage for the procedure, neither women nor their doctors could afford failure. The issue was quickly settled. Legislator Lu agreed that implanting more embryos to increase the success rate meant fulfilling women's reproductive desire, although he still advised paying attention to the risks of multiple embryo transfer (MET). "No more than four" was written into the law, in the name of women's best interests.

Fast-forward to 2020, and Taiwanese doctors were still voicing women's urgent need to become pregnant the first time they underwent IVF. I interviewed the young Dr. W (at least one generation younger than Dr. Chen) in a café. I asked him why the use of SET remains so low in Taiwan—only around 20 percent of all IVF procedures, possibly the lowest in the world. He cited pressure from patients as the primary reason. He vividly described the suffering that women face: "You know how their hearts break when they see their menstruation has come again." Although he also mentioned the lack of public financial support, and the requirement of reaching certain success rates from the monitoring agency, he saw women's emotional disturbance as the key force that makes doctors reluctant to practice SET. Dr. W reminded me that women request not only quick success but also twins: "People in Taiwan accept 'dragon-phoenix twins' (i.e., one boy and one girl) very much. They do not see twin pregnancy as causing complications, and even praise doctors who can make twins as having superb skills." In Dr. W's words, multiple embryo transfer can "enhance the cp value" (a popular abbreviation for "cost-performance ratio") of IVF.

Women not only want speedy success but also prefer twins? So-called patient demand has been an important angle in figuring out why multiple pregnancy remains popular and whether or not SET works (e.g., Leese and Denton 2010; Adamson and Norman 2020). Dr. Chen and Dr. W implied that women regard multiple embryo transfer as valuable optimization—a way of making their reproductive goal as fully effective as possible. Optimization is an essential part of anticipation work (Adams, Murphy, and Clarke 2009; Clarke 2016). This chapter contextualizes women's optimization within their various experiences of "disrupted reproduction," shaped by medical, social, cultural, legal, and gender politics (Inhorn 2007). Instead of repeating doctors' representations of women's wants and



GRAPH 5.1. Changes in Year of First Marriage and Birth in Taiwan, 1975–2020, Showing the Reproductive Trajectories of Four Interviewees (Mei-Hui, Zoe, Ting-Ting, and Stella). Sources: "Demographic Data GIS" 2021; "Population Projection Inquiry System" 2021. © Chia-Ling Wu

needs, I present women's (and a few men's) own voices, focusing on how they seek to achieve their reproductive goals—conflicting and confusing as they may sometimes be—through ART.

The women and men I interviewed anticipated having children at some point in their lives. When they show up at reproductive clinics, they intend to use ART as a tool to solve their perceived reproductive problems. Why do they come to the clinic at this point? What does ART mean to them in terms of achieving their best possible futures? What are their futures? In what follows, I link their personal biographies with the larger social transformation in Taiwan. Only when we understand the different and changing reproductive goals and hurdles these aspiring parents have faced can we know how they view IVF procedures and what the prescribed number of embryos transferred (NET) can mean to them.

Based on interviewing data and participant observation, I present four different anticipatory trajectories of making parents, as well as the optimization to respond to their disrupted reproduction. Graph 5.1 shows the trajectories of Mei-Hui, Zoe, Ting-Ting, and Stella, with Taiwan's dramatic transformation as the backdrop: a declining fertility rate, late marriage, and late birth. Some started their reproductive journey early, and some late. Some took a short period to reach their goal, and others wandered for a longer time. I emphasize

that the women's diverse anticipation of becoming parents entailed diverse optimizations of ART, which may differ from what medicine and the media present. Let's meet Mei-Hui first.

"All I Wanted Was to Succeed": Desired Motherhood and Biological Disruption

Mei-Hui became pregnant with triplets by IVF in 1997. Before marrying, she had been pregnant once. It was an ectopic pregnancy, in which the fertilized egg implanted not in the womb but in the fallopian tube. This dangerous situation necessitated termination of the pregnancy and also revealed that her fallopian tube had been damaged. Soon thereafter she married, at twenty-two years old (much sooner than twenty-six, Taiwanese women's average age of first marriage in 1997). At the same time, she quit the job she held as a shop accountant since her high school graduation in order to fully prepare for the couple's fertility plan. She first went to see a doctor of Chinese medicine for about a year. There was no sign of pregnancy, so she went to a medical center for infertility treatment. "We are quite traditional," she told me. "Marriage meant to have children soon." Although Mei-Hui's husband was not the eldest son in his family, her father-in-law emphasized that everyone should have offspring.

Mei-Hui started an IVF cycle immediately because her damaged tube was a clear indication that she should use this advanced infertility treatment. A total of eighteen eggs were retrieved, leading to thirteen embryos in the lab. The doctor transferred eight embryos "to increase the pregnancy rate," Mei-Hui remembered quite clearly. One IVF cycle cost 100,000 NT dollars (roughly 3,000 USD in the late 1990s), and the perseveration of the remaining five embryos cost another 20,000 NT dollars. All the costs were paid by her father-in-law. After the first implantation, there was some sign of pregnancy by testing, but it soon disappeared. Mei-Hui said she was extremely distressed: "The suffering of not getting pregnant was much more serious than the hardship of triplet pregnancy."

In the second attempt, all the remaining five embryos were transferred, leading to triplet pregnancy. All the family were excited. Her mother-in-law joyfully announced: "Triplets are totally fine; we can afford raising three kids altogether." From paying for IVF to paying for childcare, Mei-Hui's in-law family was financially worry free, unlike some other families I met. The doctor did not mention fetal reduction as an option. Mei-Hui, a Christian, said that she would

not have opted for fetal reduction in any case due to her religious beliefs. She went through a lot of serious conditions during pregnancy, being hospitalized several times. At one point her father-in-law declared that if Mei-Hui's situation worsened, saving the mother was more important than saving the babies. Mei-Hui gave birth to the triplets around the thirty-fifth week, by cesarean section. All the babies weighed around fifteen hundred grams, the threshold of very low birthweight; two were in incubators for twenty days, and the third for forty days. When I interviewed Mei-Hui at the church she attended, the three teenagers were naughtily playing with each other, waiting for the Sunday school to start.

Mei-Hui's trajectory epitomizes the optimal use of multiple embryo transfer to fix the biological disruption of fertility. For a woman with such a strong desire to bear children, it made sense to pursue methods to increase the success rate of IVF. If multiple embryo transfer (MET) would optimize the chances of becoming pregnant, it was welcomed, not challenged. Mei-Hui was implanted with eight embryos, which was already not permitted in countries such as Sweden, the UK, and Germany in the late 1990s, discussed in chapter 1. However, implanting eight embryos was not rare in Taiwan at that time: according to the registry data, although the mode (the most common value) was four embryos, 5 percent of transfer cycles implanted eight and nine embryos in 1998 (ROC Department of Health 2003). Mei-Hui was in the youngest age group of aspiring mothers, which on average has the highest rate of success; fewer than 2 percent of IVF cycles in the late 1990s were undergone by women who were Mei-Hui's age or younger. Still, the doctor implanted eight embryos on the first round and the remaining five on the second, and Mei-Hui did not object. Not getting pregnant was more torturous than bearing multiple babies. Achieving triplets was a joy that was shared by her family members.

The risks of a multiple birth are not easily registered on the cognitive map of some women's infertility treatment journeys. Some interviewees told me that doctors did tell them that taking fertility drugs and implanting multiple embryos could increase the chances of multiple birth. However, for women who felt frustrated with their failure to conceive even a singleton, the possibility of multiple pregnancy "was for others, [but] impossible for me," as several women told me. As one woman put it, "It is hard to move zero to one, [so] how is it possible to think of two or three?" Instead, it was the failure to conceive that dominated women's minds. When a multiple pregnancy was announced, often after taking an ultrasound image, most women were pleasantly surprised. Gloria, for

example, had begun her reproductive journey right after marrying, and when she experienced miscarriage, she told me, "My tears fell like rain." She eventually became pregnant with twins after interuterine insemination (IUI) and compared her excitement to "winning the lottery." This analogy signifies both her perceived low chances of success and a reward beyond all her expectations.

Even though these women show firm determination to become mothers, this does not mean they initially turn to ART. Almost all my interviewees first went through the stage of taking Chinese medicine. As already mentioned, despite Mei-Hui's clear diagnosis of a damaged fallopian tube, she still tried Chinese medicine before moving to IVF. Even women with the strongest desire to bear children tend to first use methods that are perceived as more "natural." Vivian, a customer service staff member at a technology company, got married at twenty-five years old in 1991 and wished to have kids as soon as possible. She said that, because she was a Christian, an "unnatural" method like a test-tube baby was not on the agenda in the beginning. After failure to conceive through sexual intercourse, Vivian took Chinese medicine for a year. Seeing no improvement, she went to see obstetrician-gynecologists and took egg stimulation drugs, but in vain. Then she tried four rounds of IUI, which required her husband to provide sperm that was injected into her womb during her medicated ovulation. IUI failed. Finally, she was persuaded to go to an IVF center where her cousin was working. Due to her preference for naturalness, Vivian had not mobilized her personal network to use the most advanced assisted reproductive technology. The medical center was among the twenty-seven centers in the accredited ART system since 1996. Vivian soon had six embryos ready for use, and the doctor implanted three of them. When I asked whether she was concerned about the possibility of having triplets, she replied:

> Not at all. No such image. *All I wanted was to succeed*, no matter how many fetuses. I tried for so many years, and I felt really bothered. … I was young, so I did not care much [about the burden of child-raising]. All I wanted was to have a successful pregnancy. (emphasis added)

Vivian became pregnant with twins and went through a very difficult pregnancy (discussed in chapter 7).

Vivian's feeling that "All I wanted was to succeed" was often portrayed in media presentations of the time. In reports seeking legalization of or financial support for surrogacy, for example, the media

tended to emphasize how women would take any steps at any cost to achieve their reproductive goals (e.g., Hong 1994), similar to the discourses of desperateness analyzed by Franklin (1990).[1] However, Vivian's case demonstrates the coexistence of strong reproductive desire ("All I wanted was to succeed") with ambivalence toward ART ("It was not natural"). The ideal cultural script was to conceive the natural way: by becoming pregnant through intercourse with one's husband. One woman stressed in her interview with me that although she took a fertility drug to become pregnant, this was much more "natural" than having to go through IUI or IVF. Other things also explained users' hesitancy about IVF. A survey showed that women's top three reasons for not considering IVF were that they thought it was "harmful to health," the "procedures [were] too complicated," and it had a "low success rate"; men's top three were that they thought it was "unnatural," "too expensive," and "against morality" (T.-H. Chen et al. 2009). IVF was not perceived as a magic solution by the general public. The health risk, the financial burden, and the low efficacy were behind this known hesitancy.

Even though my interviewees were concerned about the unnaturalness, intrusiveness, and potential harmful effects of IVF, its leading complication in the medical literature—multiple pregnancy—was scarcely on their mental radar. In Mei-Hui's treatment year (in the late 1990s), although there were some news reports on the controversy of quadruplets, neither a guideline nor informed consent on the risk of multiple birth was in routine practice. In the mid-2000s, the upper limit of number of embryos to transfer was set, and warning signs were listed on the consent form, but the possibility of becoming pregnant with multiples remained hardly a worry during the trajectory to assist conception. Women such as Vivian, who married early and started the reproductive project early, had time to attempt pregnancy using the least intrusive methods first (such as taking Chinese medicine), and gradually moving to fertility drugs, IUI, and finally IVF. Yet these step-by-step strategies were not necessarily appealing to those who began the reproductive project late.

"Take the High-Speed Rail": Rushing toward Delayed Parenthood

Zoe, a middle-tier public servant, used the metaphor of transportation to compare the different methods of infertility treatment she underwent. After failing to become pregnant through a normal

sexual life, she went to see a doctor of Chinese medicine but quickly moved to infertility treatment at a medical center, where she began on what she called the "regular train" of taking egg stimulation drugs while having intercourse. After a few cycles, she moved on to what she called the "high-speed rail" (the fastest mode of train travel in Taiwan): IUI, which involved taking egg stimulation drugs and then having washed sperm injected into her womb. She became pregnant with twins after taking her first ride on this "high speed rail."

"We got married late, so we wanted to speed up our schedule to have children," Zoe said in explaining to me why she got off the "slow train." She had married at age thirty-two in 2007, three years older than the mean age of marriage for Taiwanese women in that year. When Zoe stated that she and her husband were a bit behind the ideal schedule, she was referring to the ideal age to become parents, particularly for her husband: "I am already thirty-two, and my husband is three years older than me, so we need to hurry." "Fast" was the keyword for Zoe—and for most of my other interviewees.

Delayed Parenthood

Zoe exemplifies what Lauren Jade Martin (2020) calls "delayers," who want to bear children but start the trajectory late. Much literature has noted that women and men are postponing so-called milestone events, such as marrying and having kids. Taiwan is no exception, and the change there is one of the most drastic in the world. Graph 5.1 (see above) shows that in the last four decades, late marriage, increasing singlehood, and the world's lowest birth rate have become characteristic of Taiwan. Whereas in 1975 the average age at first marriage was twenty-two and twenty-six for women and men, respectively, now it is thirty and thirty-two. For a country with an extremely low rate of births out of wedlock, it is not surprising that, with the postponement of marriage, women are tending to give birth later and later: in 1975 the mean age at which a Taiwanese woman first gave birth was twenty-three, whereas in 2020 it was thirty-one. Moreover, although both Mei-Hui and Zoe planned to have babies, in the 1990s Mei-Hui quit her job early to become a full-time wife/mother, whereas in the 2000s Zoe pursued the goal of becoming a working mother. These two different family/work patterns may partly explain why Mei-Hui began the fertility project early and Zoe began late. In the context of Taiwan today, however, Zoe's approach has become more prevalent than Mei-Hui's.

Studies have shown that many social factors contribute to delayed parenthood in most postindustrial countries, including Taiwan. The subjective evaluation of bodily capacity, the availability of birth control technology, the extension of education duration, the balance of work and family, the worry about inadequate resources for supporting a family, and the changing cultural norms for ideal parenthood—all these lead to late parenthood in many parts of the world today (Sobotka 2010; Brinton 2016; Brinton et al. 2017; Martin 2020). In the specific context of Taiwan, scholars have noted that long working hours, financial instability of the young generation, inadequate family policies, and gender inequality have contributed to late marriage, increasing singlehood, and late parenthood (Raymo et al. 2015; Y.-h. Cheng and Yang 2021). Still, the two-child fertility ideal has persisted in Taiwan (Y.-h. Cheng and Hsu 2020), as it has in Japan, Sweden, Spain, and the US (Brinton et al. 2017). The gap between this ideal and Taiwan's lowest or second lowest fertility rate in the world (less than 1.0 live births per woman over the reproductive years) reflects the struggle and ambivalence of young Taiwanese today.

One consequence for delayers is increasing infertility. Much biomedical literature has emphasized that infertility, miscarriage, maternal complications, and newborns' birth defects increase with women's age (Klein and Sauer 2001). Viewing the trend of increasing numbers of patients in their late thirties and early forties, infertility specialists in Taiwan have warned about starting reproductive action too late. For example, in 2006, the Taiwanese Society for Reproductive Medicine (TSRM) conducted a survey of one thousand men and women aged twenty-five to forty-four to discover their reproductive knowledge and attitudes. The survey found that respondents felt the ideal age to wed is thirty-two years old, and the ideal time to begin a family is two or three years after marriage. When asking, "Compared with 20-year-olds, which age group starts to have decreased fertility capacity?" the TSRM regarded "35-year-olds" as the correct answer but found that about 40 percent of respondents answered "Do not know" or "After 50 years old" (T.-H. Chen et al. 2009). TSRM president Chih-Hong Liu told the press that couples may not be aware that the capacity to conceive declines after age thirty-five, and they may also be misled by some celebrities giving birth in their late forties and early fifties, not realizing that they have done so by using donated eggs (C.-J. Shih 2006).

The TSRM's "deficit model," testing laypeople's knowledge about reproduction, may not be able to fully encompass the complexity of

fertility decision-making. Rich social studies of delayed parenthood emphasize a biosocial approach to understanding people's reproductive trajectories (Martin 2017). Whereas Zoe was worried that late parenthood might not be the ideal parenthood, Jane, a PhD student in history, clearly singled out thirty-five (the perceived beginning of "advanced maternal age") as the deadline by which that she wanted to achieve pregnancy. Thinking that "pregnancy should not be a difficult task," she started her pregnancy plan at thirty-four, only to find that she needed to see ob-gyns for medical assistance. Another interviewee, Yi-Fen (details below), insisted that she was voluntarily childless and had even refused parenthood by pursuing graduate study. Facing an intimacy crisis in her eighth year of marriage and passing the age of thirty-five, she finally embarked on a reproductive plan. Various biosocial factors lead people to delay the project—and later speed up the timeline.

The magic number thirty-five was the benchmark among some delayers among my interviewees. Jane, Yi-Fen, and some other women I interviewed used thirty-five as the reference point to calculate the timing of marriage and conception. The deadline for women's fertility plans in Taiwan was quite similar to that in the US (see Martin 2017, 2020). However, as a mark of "advanced maternal age," thirty-five not only denotes declining fertility and increasing health risk for newborns but also exposure to intrusive medical procedures such as amniocentesis. In addition to anticipating infertility (e.g., Martin 2020), women I interviewed attempted to avoid another medical intrusion: amniocentesis. When amniocentesis became available in the early 1980s in Taiwan, it was advised that pregnant women over thirty-five years old undergo the genetic testing. The government offered a subsidy for women above thirty-four, which became a cutoff point for advanced maternal age. Several tragic events happened, such as the harm to the fetus and miscarriage, and were widely reported. This cast a shadow over use of the selective technology. Although advanced maternal age could be associated with infertility and birth defects, avoidance of intrusive risks such as amniocentesis became a matter of women's risk calculation.

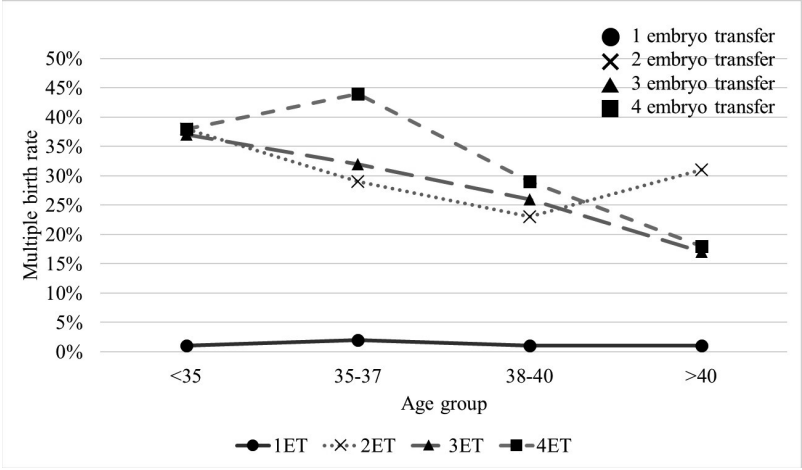
The action of "taking the high-speed rail" is not simply one of racing against a woman's biological clock but often a strategy to reassemble various life resources and events. Monica, an elementary school teacher, planned to make full use of the maternity leave resources in Taiwan, for which one must apply within the first three years after the child is born. Therefore, she started her reproductive

project when her first child reached one year and seven months, and anxiously calculated whether she could become pregnant and give birth to her second child before her first maternity leave ended. Hsiao-Yen, a lawyer who married at age thirty-eight, started seeing the ob-gyn at a medical center just three months after her wedding, not due to any worry about infertility but because her husband was going to work abroad. And when Yi-Fen began to pursue pregnancy to save her marriage, she made only a two-month attempt to conceive via a regular sexual life before quickly moving on to IVF. As she put it, "I am already at the advanced age. I am thirty-six years old. I did not want to waste time [trying various methods]. *I wanted the fastest one*." If we use Zoe's transportation metaphor, IVF should be ranked as the *super*-high-speed rail.

Implanting More Embryos with Age

Both delaying parenthood and preferring to speed up the process lead to the increasing use of ART, as well as to increased chances of multiple pregnancy. Taiwan's registry data do not include use of fertility drugs and IUI, so I only discuss IVF here. Taiwan's annual number of IVF cycles performed increased sixfold over twenty years, from around seven thousand cycles in 1998 to forty-four thousand cycles in 2019. In addition, the main users of IVF have become women of advanced reproductive age. In 1998, the median age to undergo an IVF cycle was thirty-two, but by 2019 it had moved up to thirty-eight. The latest data show that 73.3 percent of IVF cycles come from women above thirty-five years old, and, unprecedentedly, more than one-third of the cycles come from women over forty years old (ROC Ministry of Health and Welfare 2021a). If using a woman's own eggs rather than donated eggs, the live birth rate decreases significantly with age after thirty-five. For women above forty years old, the live birth rate per treatment cycle is lower than 10 percent. Therefore, doctors tend to implant more embryos for women over thirty-five as a strategy to prevent the success rate from being too low, often exceeding the TSRM's recommended upper limit, which is already one of most lenient in the world.[2]

The age-specific guideline and practice to implant more embryos for women older than thirty-five increases not only the success rate but also the multiple pregnancy rate. Graph 5.2 shows that among the live birth cycles (except for those using SET, of course), implanting two to four embryos can lead to a multiple birth rate near or over 20 percent, regardless of age group. The highest multiple birth rate is 44 percent, for implanting four embryos for women aged



GRAPH 5.2. Multiple Birth Rate of Live Birth Cycles with Number of Embryos Transferred (NET) among Four Age Groups in Taiwan in 2019. Source: ROC Ministry of Health and Welfare 2021a. © Chia-Ling Wu and Wei-Hong Chen

thirty-five to thirty-seven. For those who are more than forty years old, implanting two embryos can lead to a multiple birth rate of 31 percent, possibly due to using donated eggs or taking PGT-A. Viewing the high multiple pregnancy rate for the older women, Doctor Q, an opinion leader of the TSRM, told us in an interview in 2021 that there should be a SET requirement for those who used a donated egg or for taking PGT-A. Such opinions might be discussed informally among medical professionals but are not yet a guideline. Overall, for those who had decided to speed up the timeline, multiple embryo transfer (or a strong dose of fertility drugs) was often viewed as the best strategy for efficiently achieving success. When racing against several biological and social clocks, implanting one embryo at one time did not seem reasonable, and twin births were often welcomed.

Optimization with ART often deals with time too, but in a different way. Like egg freezing, ART is utilized by delayers to optimize their life plan. But unlike egg freezing, using ART is not often in people's original plan. Egg freezing slows down the reproductive clock by "freezing time" (Myers and Martin 2021), whereas ART helps aspiring parents hurtle toward their goal by catching the "super-high-speed rail." Nevertheless, high-speed rail does not guarantee

that people will reach their expected destination. Several countries set the age limit for ART subsidies between forty and forty-three (Keane et al. 2017), indicating the stopping point for pursuing a goal that has a low success rate. However, optimization also offers the promise of some new ART innovations. Donated eggs and PGT-A now mean that people can extend the deadline to a much later age. These new technologies targeting women of advanced reproductive age reveal an important aspect of optimization—namely, that "the pursuit of the 'best possible' is legitimately infinite in its scope and always ongoing" (Adams, Murphy, and Clarke 2009: 256). But what if the best possible future is to remain childless? And how does ART relate to such a future?

Minimizing Compulsory Motherhood

Ting-Ting was one of the few people I interviewed who straightforwardly declared she had been forced to undergo ART. I interviewed Ting-Ting in a meeting room of the business building where she worked as an administrative assistant. Ten minutes into the interview, in the middle of describing her experience of a clinic visit, she suddenly told me, "I did not tell you in the beginning. In fact, I did not want to have kids in the first place. I was forced to do so." Ting-Ting had polycystic ovary syndrome (PCOS), a hormone disorder that can lead to infrequent menstruation periods. Since girlhood, she had needed to take medicine in order to have regular periods. PCOS is one of the most common factors to cause infertility, so Ting-Ting anticipated this biological barrier to conception, but may have welcomed it. Married at twenty-four years old to a man thirteen years older than she was, she did not plan to have a baby. She explained that this was partly because she did not want to go through the painful infertility treatment: "I hate taking shots and seeing blood." She also regarded taking care of kids as a burden. I am not sure whether this aversion to childcare came from her girlhood or only became clear after she needed to take care of her twins. She stressed that she would have liked to remain voluntarily childless.

"At least I tried," Ting-Ting said, explaining why she had started the infertility treatment after nine years of marriage. The pressure from her parents-in-law had grown over the years. Ting-Ting's husband was the only son in the family. Although he employed the notion of *yuan*—"a cultural idea that congenial and understanding

relationships between interdependent people can thrive both within and outside marriage and family" (Huang and Wu 2018: 142)—to support flexibility concerning the couple's reproductive goal, the pressure from his parents became stronger when there were no signs of pregnancy. Ting-Ting's plan of voluntary childlessness was challenged, and she adjusted her strategy:

> I thought that I could just postpone until having kids became impossible [due to biological aging], and then they would understand that nothing can be done. Nevertheless, family members pressured so strongly that I thought, at least I would try once. I thought that I might not succeed the first time anyway.

Ting-Ting delayed the starting time of infertility treatment in order to enhance the chance of *failure*. She expected that ART might not work easily during her early thirties. The doctor implanted four embryos, and Ting-Ting became pregnant with quadruplets. She requested fetal reduction from four to one, but both the doctor and her husband suggested at least keeping two. (Fetal reduction is discussed in detail in chapter 6.) Ting-Ting's twins turned out to have some health problems from birth and needed extra care. Ting-Ting told me that the burden of caring for them exhausted her as well as her husband. She repeatedly lamented that "I did not want to have kids in the first place." Ting-Ting did look tired and depressed to me, but she said that her husband's family was very happy with the twins and that all the in-laws' nagging had finally ended.

Ting-Ting's anticipated voluntary childlessness has become both a practice and a respected choice in twenty-first-century Taiwan. The norm of marriage and parenthood has changed drastically. In 1991, according to the Social Change Survey, around 60 percent of people agreed that married life was not satisfactory without children, and that those who never had their own offspring had empty lives (H.-y. Chiu 1999). However, as table 5.1 shows, support of singlehood, marriage without kids, and same-sex marriage had become majority opinions by 2015. Overwhelmingly, 75 percent agreed that life without marriage can still be fulfilling. Scholars argue that this dramatic change in "family values" not only reflects the preference of the younger generation but also results from the changing values of the older generation, the so-called intracohort effect (Y.-s. Cheng and Yang 2021).

Still, intergenerational conflicts exist. Although Ting-Ting, Hsiao-Yen, and Yi-Fen all welcomed voluntary childlessness, they faced pressure to reproduce from their parents-in-law. ART became

TABLE 5. 1. Changes in Attitude toward Marriage and Parenthood in Taiwan, 1991–2015. Sources: H.-y. Chiu 1999; Fu 2017. © Chia-Ling Wu

Questions (% agree)	1991	2005	2010	2015
People can enjoy a satisfactory and successful life even without getting married	-	63.3%	69.5%	75%
Homosexuals should have the right to get married	11.4%	-	-	54.2%
A marriage without children is not unsatisfactory	27.5%	50.3%	55.7%	59.5%
N	2,488	2,146	1,895	2,034

the concrete recommendation of family members when expressing their concern. The typical advice was, "Why not go to see the doctor?" "If needed, don't hesitate to use ART." The advancement of ART broadens the scope of hope, as if biotechnology can fix any biological problems. Feminists have long argued that ART leads to the medicalization of infertility and also intensifies compulsory motherhood (Corea 1985; Crowe 1987). The availability of new reproductive technologies may lead to a wider range of traps in the name of "choices." Whereas Hsiao-Yen and Yi-Fen changed their reproductive projects and incorporated motherhood into their life agendas, Ting-Ting persisted in her ideal of childlessness and planned to attempt ART only to fulfill her marital and filial duty. New cultural norms could become resources for women such as Ting-Ting in resisting the use of ART against their will.[3]

These "debaters," as Martin (2021) calls those who struggle with the fertility decision, may sometimes withdraw from ART. The changing cultural norms have provided people with more cultural tools for moving away from ART and putting into practice different ideas about what a new kind of future can hold. As early as the 2000s, during my first wave of study on infertile men and women, it was quite frequent to meet working women who wished to withdraw from the treatment journey (Wu 2002b). One approach is to build "social parenthood." After a few failed attempts with ART, one elementary school teacher told me that she wanted to regard her students as her kids; she did not regard biological motherhood

as a must. Another approach is to protect loved ones from medical risk. One university professor, who had a low sperm count and witnessed how his wife needed to go through some painful procedures during ART, reflected that "the most rewarding experience was that I witnessed how harmful ARTs are for women … and [that] made me contemplate why I would like to have kids in the first place. If having a kid is at the expense of my wife's health, I would rather not do it." The nationally well-known politician Chien-Shun Wang and his wife Fa-Chao Su went through infertility treatment but failed. In 2011, they started a nonprofit organization for so-called "seedless watermelons" like themselves to collectively arrange life for elders who do not have offspring.[4] ART is not the effective site to relieve people from compulsory biological parenthood; but building more cultural tools might be. However, while heterosexual couples may have created new cultural scripts for being happily married without children, some other groups are excluded from using ART and strive to find access to it so as to fulfill their reproductive goals.

Queer Reproduction and Twin Pregnancy

Stella was pregnant with triplets, conceived in Bangkok. She and her partner (now wife) Jackie were excluded from Taiwan's 2007 Assisted Reproduction Act, which stipulates that only married couples have access to infertility treatments such as IVF and donor insemination.[5] Like some single women and some lesbian and gay couples, Stella and Jackie had achieved their family-building plan abroad. They had a division of reproductive labor: Stella had a problem producing eggs, so she would carry and give birth to the baby, while Jackie contributed her eggs. On their first trip to the clinic in Bangkok in 2014, thirty-five eggs were retrieved from Jackie, leading to twenty-seven day-five blastocysts created with donor sperm. Stella was then implanted with three embryos and became pregnant with a singleton. They stayed in Bangkok for twenty days, and the total cost was about 20,000 US dollars (three or four times the cost if they had been able to access ART in Taiwan). To control the budget, they did not include the preimplantation genetic testing (PGT) to further select the embryos. Stella and Jackie paid the annual fee to freeze the remaining embryos.

When their child reached two years old, in 2017, the Thai government started to tighten its policy on cross-broader use of ART. Thailand had no specific laws to regulate ART (Whittaker 2015).

The change in policy was mainly due to a widely publicized case, dubbed the "'baby factory' mystery" by the BBC (Head 2018): a rich young Japanese man had hired nine women surrogates to bear his children and had been raided by the police in 2014. Stella felt it was urgent to use the couple's remaining embryos because "I was going to be forty years old, and I needed to do it now." Stella and Jackie went to Bangkok again, attempting to best use those frozen embryos and create new family members.

Stella asked the Thai doctor to implant four embryos, the upper limit according to Taiwan's legal regulation. "I had three embryos last time, and only one embryo succeeded. And I am older now, so I should implant more embryos," Stella explained, hoping to maximize her chances of success. The Thai doctor refused and suggested implanting three embryos; plus, he used "embryo glue," a kind of adhesive medium to help the embryo stick to the wall of uterus. The couple only stayed abroad five days this time because the procedure was mainly the embryo transfer. Soon after they went home, they joyfully saw the "positive" sign appear on a pregnancy test kit. In the sixth week of pregnancy, Stella had some bleeding and went to the hospital for care. She found out she was not pregnant with twins, as her earlier ultrasound check had showed, but with triplets.

Stella and Jackie showcase a new wave of queer reproduction in Taiwan.[6] The legal exclusion of unmarried women and men in Taiwan did not prevent them from pursuing ART. To be self-included in the system, the earlier strategy for some lesbians included a marriage of convenience with a gay man to become qualified to use ART in the medical system.[7] Since the early 2000s, some lesbian activists have stopped recommending a marriage of convenience as a way to gain access to ARTs, in view of the unbalanced gender division of labor between the gay father and lesbian mother. Importantly, Taiwan LGBT Family Rights Advocacy (2010) published *When We Build a Family: A Childbearing Guidebook for Lesbians*, the first such book ever to be published in an East Asian country, which warns readers of the troubles that lesbian mothers face in the "heterosexual regime of family" (ibid.: 29).[8] Instead, the guidebook promotes self-insemination. It lists the "Do it ourselves" groups in the US and UK, the successful practices in Taiwan, as well as detailed steps (ibid.: 34–50).[9] It is difficult to know how prevalent this practice was and is, except for a few high-profile cases. Its low success rate and lack of monitoring have caused some concerns within the lesbian community.[10] Cross-border reproductive care has become more visible among the lesbian community in Taiwan since the early 2010s.[11]

The preference for IVF over donor insemination (DI) when lesbians travel abroad leads to higher chances of making multiples. The so-called Tea Tree Moms are often referred to as Taiwan's first lesbian couple to have ART abroad; they have twins. They got married in Canada and gained legal access to use ART there. They shared their reproductive journey in detail in their blog to help other lesbians better understand the situation.[12] Some aspiring parents followed the Tea Tree Moms to Canada, some tried the US, and others built a new network in Thailand, Cambodia, and Japan. Like the Tea Tree Moms, when going abroad, Taiwan's lesbians have preferred IVF to donor insemination. In the beginning, I was puzzled by this preference. IUI has been single women and lesbians' top choice in some Western countries, and I wondered why it wasn't the same for Taiwanese women seeking treatment abroad. Women have their own eggs and womb, so with donated sperm, the simple procedure of IUI—injecting the sperm into the woman's womb during the period of ovulation—can be carried out. Well aware that DI is less intrusive and less expensive than IVF, my interviewees hastened to remind me that its success rate is lower, which matters to them tremendously. I had neglected to consider the constraints that these excluded users have faced, especially the difference between "local use or going abroad."

There are at least three obstacles that women need to face in seeking fertility treatment abroad. First of all, it takes time and courage to build the sense of legitimacy to use a technology that is legally prohibited in one's motherland. These women were moral pioneers to break the norms to fulfill their reproductive desire. Second, traveling abroad takes time, money, and energy. They told me that although IVF costs more, they could not afford to try DI several times first and then move to IVF, like lesbians in Australia, Spain, the US, and the UK who had access to ART locally (Fiske and Weston 2014; Carpinello et al. 2016; Nazem et al. 2019). Third, due to the moral, legal, and financial constraints, by the time Taiwanese lesbians are fully prepared to undergo ART, they tend to be in their thirties, or often in their late thirties, like Stella and Jackie. Hence, like those delayers, they would like to do it fast, with strong measures, such as multiple embryo transfer, with PGT-A, or with the questionable embryo glue that Stella agreed to. These measures tend to enhance chances not only of success but also of multiple pregnancy. Although in Taiwan no systematic data on cross-border ARTs exist, the high prevalence of twin pregnancy is very visible in Taiwan's lesbian and gay community. The Tea Tree Moms have

twins—a girl and a boy, often called "dragon and phoenix babies" in Taiwan, indicating the best combination. Chou-Chou and Da Kui, who filed a lawsuit in Taiwan to gain legal parenthood of the nonbirthing partner, also have twins conceived in Canada.[13]

Lesbians' specific practices of Co-IVF also lead to higher chances of making multiples. Taiwan's lesbian couples, such as Stella and Jackie, started to take the "A-egg, B-birth" approach in recent years: A provided the egg, and B carried out the pregnancy. The practice is called ROPA (reception of oocytes from partners) by the Spanish IVF team (Marina et al. 2010), Co-IVF by teams in the US (Yeshua et al. 2015), and "shared motherhood IVF" by British teams (Bodri et al. 2018). In some cases, it is done for medical reasons, such as A not being able to carry the baby to term and B having problems producing eggs. However, many who employ this approach do so to build a biological connection with the children on the part of both parents: A has the genetic linkage through her egg, and B is the birth mother (Machin 2014). In the context of Taiwan, as well as many other countries, "combining gestation and genetics" (Pennings 2016) is also a strategy to maximize the legal rights of the non-birthing partner (Y.-J. Tseng 2013). Taiwan's civil law only recognizes the birth mother as the legal parent, but not the other partner, both before and after the legalization of same-sex marriage in 2019. Recent studies show that shared-motherhood IVF has a higher success rate than autologous IVF and heterosexual couples, possibly due to "the best combination between two oocyte providers and two gestational mothers" (Nunez et al. 2021: 371; also see Hodson, Meads, and Bewley 2017). This is because lesbian couples are "socially infertile," so they often do not have reproductive health problems. The maximization of success by the best combination may also increase the chances of making multiples whenever two or more embryos are chosen to transfer.

Overall, in the face of multiple constraints, lesbian couples may not oppose multiple embryos or strong fertility drugs to reach success quickly, which may increase their multiple pregnancy rate. To reach their goal of having a child, a lesbian couple may need to prepare their reproductive body for IVF by visiting a clinic in Taiwan, order sperm from a commercial bank in Denmark, arrange the medical procedure with a Thai agent, and then take a flight to the IVF destination. After so many troublesome preparations, using Zoe's metaphor of transportation, requesting a supersonic jet—such as the implantation of four embryos in Stella's case—may well be rational thinking.

Surrogacy for gay parents may best illustrate how undergoing hardships to reach a reproductive goal, including high costs, can lead to a preference for multiple embryos. Taiwan's gay men have been traveling abroad to seek parenthood through surrogacy. After Taiwan legalized same-sex marriage in 2019, the international organization Men Having Babies (MHB) came to Taipei to build the link actively. It is estimated to cost 150,000 to 200,000 US dollars for the whole process, and there is no guarantee of taking a baby home. At some point, the elective single-embryo transfer (eSET) policy was brought up during an MHB meeting. One doctor, running an IVF center in California, explained to the aspiring gay parents that with PGT-A, the success rate can be as high as 60 percent, so SET should be fine. The doctor continued to stress that twin pregnancy carries too much health risk for a female surrogate, so it is not encouraged. One Taiwanese gay father offered a recent case of premature twins to support the idea of SET. The babies needed intensive care right after the birth, and medical costs could skyrocket, as in the US. I can easily see that it takes much deliberation to persuade participants to use eSET rather than MET and thus aim for a singleton, not twins. What Dr. W calls the heterosexual couples' "cp value," i.e., getting twins from a single pregnancy, is openly discouraged here. Gays face the most constraints, pay the most money to become parents through ART, and at the same time confront the most demanding requests to practice eSET.

Conclusion

This chapter presents diverse anticipatory trajectories of becoming parents in order to grasp how women and men perceive ART practices and multiple birth. These complex trajectories differ from the simplified representations in the mainstream medicine and media, which tend to highlight those who keep on hoping but may lack knowledge about aging motherhood. Table 5.2 summarizes the major findings. My fieldwork shows that only a small portion of users, such as Mei-Hui, make the reproductive project their life priority. Most interviewees delay, debate, or resist the fertility project or are excluded socially and legally from becoming parents. By the same token, the forms of disrupted reproduction that people face differ greatly, ranging from biological infertility and competing biological and social clocks to social pressure to conceive and legal exclusion from access to ART. As a result, ART is not only a remedy

TABLE 5.2. Anticipation Trajectories with Different Optimizations within Disruptive Reproduction in Taiwan. (ARTs = assisted reproductive technologies.) © Chia-Ling Wu

Type of disruptive reproduction	Exemplar	ARTs as a tool to reach the best possible future	Affective state for multiple pregnancy
Desired motherhood encountering biological obstacles	Reproductive project as main life goal	Fix biological infertility	"Winning the lottery"
Competing biological and social clocks	Delayed parenthood	Speed up the timeline	Efficiency
Pressure against voluntary childlessness	Pressured daughter-in-law	Fulfill the duty	Hesitance
Legal exclusion	Lesbian couples	Remedy for social infertility	Justice

for physical dysfunction but a strategy to speed up an aspiring parent's timeline, fulfill familial duty, and/or fight social discrimination.

When people face the most constraints—such as lack of time and cross-border burdens—they welcome or even require strong measures so as to reach the goal of having a child. Still, what they want most of the time is successful conception, not twins or triplets. "Taking the high-speed rail" means accelerating the timeline, not doubling the results. Aspiring parents' affective states when responding to the announcement of multiple pregnancy range from "winning the lottery" and "efficiency" to "hesitance" and "justice," echoing their anticipatory trajectories. These are mostly responses to surprising pregnancy results, not to their preplanned goal.

While using ART to optimize their reproductive plan, people are aware of various health risks, but not necessarily the risk of making multiple babies. They seek Chinese medicine to find less intrusive treatment. Some withdraw from ART due to its invasiveness. They even worry about the harm caused by amniocentesis. However, the risk of multiple pregnancy is rarely on the list. It is hard for people who are worried about failing to become pregnant to register the possible consequences of bearing twins and triplets who may need ongoing medical care. All the measures to increase the chances of

success—such as strong fertility drugs and multiple embryo transfer—also increase the chance of multiple pregnancy. Therefore, it should be the task of medical professionals, not their patients, to initiate the preventive measures required. And conception is only the first step. When an ultrasound shows triplets or quadruplets, women face another challenge: how will I bear them? As shown in chapter 6, their anticipation moves to a new stage: fetal reduction.

Notes

1. In my first wave of interviews in the early 2000s, I found that full-time housewives and daughters-in-law in their husband's family business felt the strongest pressure to try ART until they experienced success (Wu 2002a: 27–28). However, for the second wave of interviewees around 2010, the pattern is less clear
2. The latest data show that over one-fourth of the cycles for the thirty-five-to-thirty-seven-year-old group exceed the TSRM's recommended upper limit of two embryos transferred, and nearly 10 percent are over the upper limit of three for the thirty-eight-to-forty-year-old group. In addition, SET is not the norm even among the younger group in Taiwan, although strong evidence has shown that the cumulative success rate of elective single-embryo transfer (eSET) is as good as that of DET (Kamath et al. 2020).
3. Paradox exists. Lack of financial support can create stratified reproduction because only the affluent can afford to pay for IVF out of their own pockets, yet when the subsidy is generous, as in the case of Israel, this may create new pressure to "keep trying" (Balabanova and Simonstein 2010: 196).
4. See the official website: http://www.nokids.org.tw/.
5. Legally, from Taiwan's first ethical guidelines in 1986 to the Assisted Reproduction Act in 2007, all the ethical and legal regulations continued to prohibit unmarried women and men from using ART. Globally, the regulations addressing access to ART are moving toward liberalization, and increasing numbers of countries do not restrict its use to married, heterosexual couples alone. However, after the Muslim world, (South)East Asia is the second most prominent region where ART eligibility criteria are based strictly on marital status. According to the latest survey by the International Federation of Fertility Societies (IFFS 2019), among the sixty-two countries and regions surveyed, only fourteen countries specify married couples as the only eligible treatment group by law or guideline, and Taiwan is one of them.
6. ARTs such as IUI, IVF/ICSI, and surrogacy separate heterosexuality from reproduction and thus create new opportunities to become par-

ents for single women, lesbians, and gays. However, their utilization depends on complex social, cultural, and legal contexts. In the 1970s, insemination of a friend's sperm or donated sperm to achieve pregnancy, particularly with self-insemination, was a token practice in the women's health movement in the UK and US (Wikler and Wikler 1991). Part of the activist spirit was to reproduce without having sex with men and to stay away from the medical institution. Still, requests to be included in the system of ART increased. By the late 1990s, donor insemination (DI) had become more openly available to single women and lesbians in several Western countries (Moore 2007). By comparison, although DI was equally technically feasible in Taiwan, it was not advocated by feminists there as a way to build an alternative family; instead, fighting against compulsory motherhood by advocating for abortion rights was the main agenda (Wu 2017a).

7. Among my interviewees, Terresa's was the earliest case in which the subject arranged a marriage with a gay man, in the 1990s, to gain legal access to ART, using intrauterine insemination (IUI) to become pregnant. However, the lesbian community gradually found that a marriage of convenience—to secure a marriage license as well as the sperm to conceive through ART—often led to an ongoing burden of care within the patriarchal family, including serving parents-in-law and caring for babies all by oneself. Terresa, for example, got divorced later because she found that the gay father of her child was often absent for childcare. Several interviewees told me a well-circulated story of a mother of triplets to highlight the burden of care: caring for multiple babies intensified the unbalanced gender division of labor between the gay father and lesbian mother. The marriage may have been fake, but the care required was real.
8. Taiwan's gay and lesbian movement had boomed in the early 1990s and soon took on a leading role in Asia (Jackson, Liu, and Woo 2008; Kong 2019). A number of young student activists from the gay and lesbian rights movement initiated the Lesbian Mothers Alliance, which was transformed in 2007 into the Taiwan LGBT Family Rights Advocacy. The organization was intended to offer social support and record the oral histories of lesbian mothers who had mostly become pregnant from previous heterosexual marriage.
9. The activists started to include ART in their agenda of social reform after meeting Vicky, who did DI and self-insemination to have two kids (Wu 2017a).
10. Still, activists' promotion of self-insemination does democratize the use of ART by extending it to these legally excluded persons through sharing simple technology.
11. Scholars prefer to term this "reproductive exile" rather than "reproductive tourism" to emphasize the constraints that force members of the excluded minority to go abroad (Inhorn and Patrizio 2009).

12. When they were invited to write the preface of *When We Build a Family* in 2010, they noted that they wished they had had such guidance at the time, so as to avoid much hesitation and ambivalence. Although cross-border reproduction was not an option listed in the pioneering guidebook, it soon became the most visible strategy.
13. Only a few studies show the multiple pregnancy/birth rate among lesbian couples using IVF or Co-IVF, ranging from 21.3 percent in a medical center in the US (Carpinell et al. 2016) to 14 percent in a British clinic (Bodri et al. 2018).