

From

Live the Truth, Proceedings of the
Twentieth Workshop for Bishops,
Edward J. Furlon, Ed. NCBC: Philadelphia
2006: 203-231.

THE ETHICS OF INFERTILITY TREATMENT

AN UPBEAT UPDATE

Sr. Renée Mirkes, O.S.F.



All of us recognize the importance of finding moral solutions to infertility. We are acutely aware that we rise and fall collectively with the health of our social infrastructure. And since society's infrastructure rests squarely on the foundation of the family, the issue we take up here—appraising the moral character of the means by which infertile couples build their families—takes on critical importance.

The good news is that I have something genuinely innovative to report in the area of infertility treatment. Its moniker is NaProTechnology (an acronym for Natural Procreative Technology, or NPT for short). This comprehensive, versatile approach to women's health care has been developed and refined during twenty-eight years of clinical research conducted by Dr. Thomas W. Hilgers and his colleagues at the Pope Paul VI Institute. NPT protocols are aimed at the diagnosis and treatment of the diseases that cause infertility, so that infertile couples might achieve pregnancies naturally. You are about

ried women in the United States who have compromised fertility.⁴

Second, the etiology of infertility⁵ can be female factors, such as pelvic pathology (intrinsic tubal diseases, peritubal adhesive disease, or endometriosis), which may occur alone or in combination with other female factors (ovulatory dysfunction, hormonal deficiencies, diminished ovarian reserve, and immunological disorders); male factors (oligospermia or poor sperm motility or morphology); or both. The etiology of some infertility is simply unknown.

Third, the Centers for Disease Control,⁶ in its 2001 report *Assisted Reproductive Technology Success Rates*, measured the risk of having multiple-infant births through ART cycles, including gamete intrafallopian transfer (GIFT), zygote intrafallopian transfer (ZIFT), and IVF cycles. In the year 2000 in the United States, 26,550 reported pregnancies resulted from ART cycles using fresh, non-donor eggs: 4,525 of these resulted in either miscarriage, stillbirth, or induced abortion, and 212 pregnancy outcomes were not reported. The remaining 21,813 pregnancies resulted in live births, with 32.0 percent twins and

⁴ The 1995 National Survey of Family Growth (NSFG), in Stephen EH, Chandra A, "Updated Projections of Infertility in the U.S.: 1995–2025," *Fertility and Sterility* 70.1 (July 1998), 30–34, cited in Thomas W. Hilgers, *The Medical Applications of Natural Family Planning: A Contemporary Approach to Women's Health Care* (Omaha, NB: Pope Paul VI Institute, 1991), 477.

⁵ Hilgers, *Applications of NPT*, 480.

⁶ The CDC is very upfront in describing the increased risks of multiple births with ART: "Multiple-infant births are associated with greater problems for both mothers and infants, including higher rates of caesarean section, prematurity, low birth weight, and infant disability or death." It is less straightforward with the way it describes selective reduction, i.e., implying that induced abortion and miscarriage are morally indistinguishable: "Triplet (or more) pregnancies may be reduced to twins or singletons by the time of birth. This can happen naturally (e.g., fetal death), or a woman and her doctor may decide to reduce the number of fetuses using a procedure called multifetal pregnancy reduction." (Centers for Disease Control and Prevention and American Society for Reproductive Medicine, "ART Cycles Using Fresh Nondonor Eggs or Embryos," *2001 Assisted Reproductive Technology Success Rates: National Summary and Fertility Clinic Reports*, section 2 [Atlanta, GA: CDC, December 2003]: 20, <http://www.cdc.gov/ART/ART01/PDF/ART2001.pdf>.)

to discover why NPT and its disease-based approach to infertility is one-and-a-half to three-and-a-half times more effective than in vitro fertilization (IVF) in assisting infertile couples to achieve a pregnancy.¹

As the phrase “*upbeat* update” suggests, I believe NPT is good news squared. It not only makes eminently good medical sense; it also makes elegant ethical sense.

My thesis, then, is this: When analyzed comparatively with homologous IVF/embryo transfer (hIVF/ET), only NaPro-Technology provides infertile couples with a good means to the good end of wanting to conceive their own biological baby. That is to say, its protocols assist infertile couples “to procreate in full respect for their own personal dignity and that of the child to be born.”²

To prove my thesis, I will first contrast the medical regimen of hIVF/ET with that of NPT. Second, I will identify the moral dynamism that these respective infertility treatments evince when judged against the criteria of the dignity of human life and human procreation.

The Medical Facts

First, a medical textbook definition of infertility is a couple's inability to achieve a pregnancy after twelve months of unprotected sexual intercourse.³ Primary infertility is the inability of the couple to achieve any pregnancy; secondary infertility is the inability to achieve further pregnancies after conceiving one or more times. The most current, nationally representative infertility statistics indicate that there are 6.2 million women of reproductive age in the United States who have impaired fecundity. This represents a significant increase, from 10.8 percent of married women in 1982, to 12.9 percent in 1995. Twenty-year projections suggest that by the year 2025, there could be as many as 7.7 million mar-

¹Thomas W. Hilgers, *The Medical & Surgical Practice of NaPro-Technology* (Omaha, NE: Pope Paul VI Institute, 2004), 691.

²Congregation for the Doctrine of the Faith, *Donum vitae: The Gift of Life: Instruction on Respect for Human Life in Its Origin and on the Dignity of Procreation* (Boston: National Catholic Bioethics Center, n.d.), II. B. 8.

³Charles B. Clayman, MD, ed., *The American Medical Association Encyclopedia of Medicine* (New York: Random House, 1989), 586.

3.8 percent triplets or more. Comparing the 35.8 percent multiple-birth rate of ART with the 3 percent rate in the general U.S. population,⁷ we begin to see why many in the IVF industry and many couples contemplating IVF are concerned.⁸

Fourth, the average cost of one cycle of IVF is between \$10,000 and \$14,200, including medications.⁹ Currently, IVF treatment is not covered by insurance.

Fifth, I have singled out hIVF/ET for consideration because the majority of infertile couples who are advised to pursue IVF and subsequently present at the Center for NaProEthics are trying to discern the morality of this form of ART.¹⁰ (Homologous IVF [hIVF] uses oocytes and sperm from the couple trying to conceive a child; heterologous IVF, which is not discussed here, uses gametes obtained outside the marriage—donor egg, donor sperm, or both). In my experience, many of the couples seeking hIVF/ET are blindsided by the ostensibly benign character of hIVF. “What possible objection,” they wonder, “can the philoprogenitive Catholic Church have with a technology that, first, offers us a good chance to conceive a baby and, second, does so using our own, not donor, gametes?”

⁷Ibid.

⁸There is a movement within the U.S. IVF industry to reform certain of its practices. An amazingly candid article by Betsy Bates in *OB/GYN News* makes the following assertions about IVF's multiple birth rates: “Many couples do not seek infertility treatment out of fear of multiples, but many specialists continue to transfer three or more embryos. High order multiples are costly (triplets, on average, incur \$140,000 in charges before they leave the hospital), and frighten people into believing that IVF will leave them with sick, low-birth-weight babies and unmanageably large families.” Then the author approvingly quotes the chairman of Advanced Reproductive Care, Palo Alto, CA: “It's a major reason for bad press. It's a major reason the government is saying it wants to regulate us. It's a major reason for employers to say they're not going to cover it because, I guarantee you, they'd rather have a depressed, infertile patient than a woman with triplets.... It's no longer acceptable to have a 7 or 8 percent triplet rate. It is just not going to fly.” (Betsy Bates, “Fear of Failure Deters Many from Infertility Tx,” *OB/GYN News* 39.15 [August 1, 2004]: 20A.)

⁹Ibid.

¹⁰Of approximately 620 infertile couples who have consulted the Center for NaProEthics (the ethics division of the Pope Paul VI Institute) in the past eight years, more than 80 percent of them were considering hIVF.

Homologous IVF/Embryo Transfer

In hIVF, oocytes (obtained surgically from the wife's ovarian follicles in superovulated cycles) and prepared sperm (previously collected by the husband through masturbation) are brought together in a dish in the laboratory. Fertilization takes place in vitro (in glass) in a laboratory, that is, outside the body and outside an act of sexual union. For pregnancy to occur, cleavage-stage or blastocyst-stage embryos derived from the fertilized oocytes are placed in the uterus through a process called embryo transfer. Let us examine each step of the IVF/ET technique in turn.¹¹

Semen Preparation. Sperm are capacitated by being centrifuged through a density gradient, with the healthiest sperm left at the bottom of the receptacle. This in vitro process mimics the sperm conditioning that occurs naturally in the female reproductive tract when sperm undergo the acrosome reaction. Sperm density is calculated to determine the amount of sperm needed for the fertilization medium (one million sperm per milliliter) and the incubation of oocytes and sperm.

Superovulation. The woman receives superovulation treatment with gonadotropins (such as follicle-stimulating hormone alone [Gonal-F and Follistim] or in combination with luteinizing hormone [Repronex]) usually preceded by pituitary suppression with a gonadotropin-releasing hormone (GnRH) analog (such as Lupron) or a GnRH antagonist (such as Ganirelix or Cetrotide). A careful balance of these drugs is needed to maximize safely the number of oocytes retrieved. Ideally, there should be enough eggs produced through superovulation to allow, after fertilization, a choice of embryos for the transfer process, as well as extra embryos for cryopreservation. The risk of ovarian hyperstimulation syndrome needs to be minimized, however. Ultrasonographic imaging of the ovaries and in some cases monitoring of the rise in plasma estradiol con-

¹¹The description of each of the steps of IVF comes from summaries of several sources: Peter R. Brinsden, ed., *A Textbook of In Vitro Fertilization and Assisted Reproduction: The Bourn Hall Guide to Clinical and Laboratory Practice*, 2nd ed. (London: Parthenon, 1999); Peter Braude and Paula Rowell, "Assisted Conception, II: In Vitro Fertilisation and Intracytoplasmic Sperm Injection," *BMJ* 327.7419 (October 11, 2003): 852-855; and (3) personal communication with Dr. Jacques W. Ramey, MD, PhD, a reproductive endocrinologist from the Heartland Center for Reproductive Medicine, Omaha, Nebraska.

centration are both used to check the effects of superovulation. Human chorionic gonadotropin (hCG) is administered thirty-four to thirty-eight hours before planned egg retrieval, when the leading follicles are equal to or greater than 18 mm in diameter. About 10 percent of cycles are cancelled before the planned egg collection because the response to superovulation was either excessive—risking ovarian hyperstimulation syndrome—or, more often, inadequate.

Egg Collection. In the past, eggs were collected laparoscopically under general anesthesia, but now transvaginal follicle aspiration guided by ultrasonography is the method of choice. This procedure can be performed under intravenous sedation and allows access to ovaries that previously were not visible laparoscopically (e.g., in women with severe pelvic disease and adhesions). Most women are able to leave the clinic a few hours after transvaginal egg collection, and the procedure has minimal analgesic requirements.

Each follicle is aspirated in turn, usually through a single vaginal needle puncture for each ovary. The per-cycle number of eggs aspirated from both ovaries varies widely from clinic to clinic, with a conservative goal of five to ten eggs. The fluid collected from each follicle is examined immediately under a microscope for the presence of a cumulus mass that may contain an oocyte. Once the oocytes have been collected, they are placed immediately in a culture medium conducive to fertilization and maintenance of embryo growth.

Insemination. Each oocyte is inseminated with fifty thousand to one hundred thousand motile, morphologically normal sperm. The gametes are incubated in a culture medium for eighteen to twenty-four hours at 39 degrees Celsius in an atmosphere of 5 percent carbon dioxide. The culture medium contains the essential nutrients and electrolytes required for fertilization and maintenance of embryo growth.¹²

Fertilization can be detected twelve to twenty hours after insemination, by the presence of two pronuclei formed in the cytoplasm of the egg around the maternal and paternal chromatids, and by the presence of two polar bodies in the perivitelline

¹²The culture medium for in vitro fertilization of human oocyte and sperm includes: sodium chloride, potassium chloride, sodium bicarbonate, sodium phosphate, penicillin, pH indicator, sodium lactate, magnesium chloride, pyruvate salt solution, and bovine serum albumin.

space. More than 60 percent of the eggs collected are fertilized, although complete failure of fertilization can occur because of previously undetected sperm or oocyte abnormalities.

Around twenty-four hours after insemination, the pronuclear membranes dissolve, allowing combination of the maternal and paternal chromatids (syngamy). After syngamy, the single-cell zygote undergoes its first cleavage division to become a two-cell embryo. Further cleavages occur at around twenty-four-hour intervals.

Embryo Transfer. Generally, embryos are transferred to the uterus on the second or third day after fertilization, by which time they have usually divided into four or eight cells, respectively. Many IVF specialists today are allowing embryos to develop in the laboratory for a longer period of time, considering that this may be a better method for selecting the embryos most likely to implant. In theory, the pregnancy rate per transfer should be much higher when blastocyst embryos are transferred on days five to seven than when earlier-stage embryos are transferred on day two or three. The primary risk of attempting blastocyst transfer, however, is that some embryos will die in the laboratory, reducing the number of embryos available for transfer and freezing. Unfortunately, some couples who undergo IVF lose all their embryos in the laboratory and have no embryos available for transfer.

When excess blastocysts are available, they may be frozen. Some of these, however, will not survive the freeze-thaw process when they are utilized in a later attempt to achieve a pregnancy.

But of what does the transfer process itself consist? I will quote from what many consider the definitive text on IVF clinical practice, Brinsden's *Textbook of In Vitro Fertilization and Assisted Reproduction: The Bourn Hall Guide to Clinical and Laboratory Practice*:

Embryo transfer is carried out in the operating theater under sterile conditions, scrubbing up and gloving, but not gowning up. Husbands are encouraged to attend, suitably gowned and with overshoes.

On arrival in the theater, the identity of the patient is checked by the accompanying nurse, the surgeon and the embryologist attending to the case—all then sign the case records confirming that they have done so. The patient is placed in the lithotomy position and the surgeon places a perineal drape over her and inserts a Cuscoe vaginal speculum lubricated with warmed saline solution. The cervix is

exposed and any vaginal and cervical secretions are gently removed....

In the laboratory, the embryos are identified by the embryologist and scored, and their details are entered into the log. Those embryos that are to be transferred are placed into a drop of Earle's medium. At Bourn Hall, an Edwards-Wallace (Bourn) embryo transfer catheter ... is used for the majority of transfers. The catheter is fitted with a 1 ml tuberculin-type syringe and flushed through with medium. The embryo(s) are drawn up into the already charged catheter, so that a volume of 15-25 microliters is transferred. The catheter is taken through to the theater and passed to the surgeon. At this stage the lights in the theater are kept dimmed, but are switched up when the surgeon is ready to do the transfer. The catheter is gently maneuvered through the cervical canal and into the uterus.

...If difficulty is experienced in passing the catheter through the cervical canal, then the stiffer outer sheath can be introduced into the canal and the inner catheter "persuaded" through. If this fails, an Allis single-tooth forceps may be applied to the anterior or posterior lip of the cervix and gentle traction applied to straighten the cervical canal. If it is still found to be impossible to pass the catheter after every reasonable means has been tried, and after a maximum of two minutes (because of the cooling effect on the embryos), then the embryos are returned to the laboratory and replaced in the culture dish.... The embryologist then returns with the embryo transfer catheter; it is threaded up the sheath and will usually enter the uterine cavity. When the operator is confident that the catheter is properly placed, the embryologist or the surgeon can slowly and gently inject the embryos into the uterus; the catheter is left in position for a few moments and then gently and slowly removed. The catheter is returned to the laboratory and checked to ensure that the embryos have not been retained. If they have, the embryologist will draw up the embryos again into the catheter and a further attempt will be made to transfer them to the uterus. On completion of the transfer, the speculum is withdrawn and the patient is made comfortable.¹³

Post-embryo Transfer Support. Most IVF centers administer progesterone supplementation via vaginal pessaries, suppositories, intramuscular injections, or oral micronized proges-

¹³Brinsden, *Textbook of IVF*, 181-183. (Bourn Hall Clinic was founded by Patrick C. Steptoe and Robert G. Edwards, who presided over the "conception" of the first IVF baby, Louise Brown, in 1978.)

terone tablets until menses occur or the woman has a positive pregnancy test. Alternatively, hCG may be given two to three times a week, but it can promote ovarian hyperstimulation syndrome in susceptible or heavily stimulated patients.

NaProTechnology

First, the NPT parameters for defining infertility are these:¹⁴ If a couple have not achieved pregnancy within three cycles of fertility-focused intercourse, an infertility problem is likely. If pregnancy has not occurred by the sixth cycle, then testing for an organic or other underlying abnormality begins.

Second, NPT has one principal goal in reference to an infertile couple: to resolve the conditions causing their infertility so that they are empowered to achieve a pregnancy within their own act of intercourse.

Third, NPT takes a disease-based approach to infertility. In other words, infertility is viewed as a symptom of an underlying organic, hormonal, or ovulatory dysfunction. To date, NaProTechnology has been very successful in identifying and treating infertility precisely because it comprehensively evaluates and corrects the multiple causes of the "symptom" of infertility. Consequently, because the couple better understand *why* they are infertile and because they pursue only *reasonable* means to overcome the roots of their infertility, NPT couples are more apt to adjust to their situations with healthy acceptance and peace of mind.

Fourth, the reason that the diagnostic and treatment strategies of NPT manage infertility so well is that they are able to adequately (and therefore precisely) target the menstrual/fertility cycles of the particular infertile patient being evaluated.

To understand this nostrum, we need to examine the basics of the Creighton Model FertilityCare System of charting—the only prospective and standardized means of monitoring the various patterns of a woman's menstrual and fertility cycle for the natural regulation of fertility. Figure 1 (*next page*) shows a chart from an ~~infertile~~ woman who has normal vulvar mucus cycles of a regular length (i.e., between twenty-one and thirty-eight days). Her cycle begins with menses. The days of menses, marked on the chart with red stamps (~~which appear light gray in the figure~~), are followed by infertile days

¹⁴ This entire section references Hilgers, *Applications of NPT*.

- Diagnostic laparoscopy can be scheduled during the preovulatory phase of the woman's cycle, when it will not risk interruption of a pregnancy that could occur during the postovulatory phase. A selective hysterosalpingogram should be done during the proliferative phase of a woman's cycle—between day four and day eight or ten—when her endometrium is still thin and access to the internal os of the fallopian tube is relatively easy.
- The scheduling of follicular ultrasound studies for an infertile woman is directed by the timing of cyclic events recorded on her previous charts. For this infertile patient with a regular cycle, for example, the NPT physician would order a baseline pelvic ultrasound on day five, because he knows the preovulatory phase is the best time of her cycle to attempt an adequate structural assessment of her reproductive organs. He will order daily follicular ultrasound studies from the fifth day before her peak until follicular rupture, because he knows these periovulatory studies will adequately monitor ovarian folliculogenesis and development. Finally, he will order another pelvic ultrasound on the seventh day after her peak because he knows it will give him an adequate picture of endometrial pathology, should it be present, and the patient's postovulatory ovarian status.
- The way an NPT physician measures the ovarian hormones of an infertile patient illustrates how the patient's charts direct the timing of hormone profiles in such a way as to assure that they adequately assess or target estradiol and progesterone surges.¹⁵

¹⁵ Contrast the NPT use of targeted hormone profiles with what a non-NPT physician does. The latter places a patient with a thirty-nine-day cycle (with a long preovulatory phase) into a twenty-eight-day-cycle schematic. Consequently, when the physician tests this woman's levels of periovulatory estradiol on day fifteen, the result is totally useless, since this woman is in her preovulatory, not periovulatory, phase on that day. When the same physician calls for a postovulatory progesterone and estradiol profile on day twenty-two, the finding is equally useless, since this woman, on day twenty-two, is in her periovulatory, not postovulatory, phase. As a result, the hormone profiles gleaned from non-targeted hormone profiles will be ineffective in diagnosing whether the infertile woman suffers from endocrinopathy, and will also result in less effective therapy design and delivery.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1. *Journal of Management Studies*, 1990, 27, 1, 1-13.

1

FIGURE 3. Multiple-pregnancy rate in patients with infertility treated with NaProTechnology in the United States and Ireland (Pope Paul VI Institute research findings, Omaha, Nebraska, 2004). The twenty multiple births comprised seventeen sets of twins and three sets of triplets. There were no multiples beyond triplets.

Number of pregnancies	617
Number of multiple births	20
Incidence of pregnancies producing multiple births	U.S.: 3.2% Ireland: 3.4%

Sixth, NPT infertility protocols incur a low multiple pregnancy rate, illustrated in Figure 3 by a 3.2 percent rate at the Pope Paul VI Institute clinic and a 3.4 percent rate at a NaPro clinic in Ireland.¹⁷ These rates compare *very* favorably with the previously cited 35.8 percent rate of multiple-infant births with ART cycles. Judged against these national statistics, the NPT approach to infertility evinces an 11.2-fold *decrease* in multiple births and all their adverse sequelae for baby and mother.

Seventh, the cumulative pregnancy rate for 1,054 infertile women who were treated at the Pope Paul VI Institute clinic with NPT for the full spectrum of infertility-causing diseases (Figure 4, *next page*) demonstrates that over 60 percent of these patients became pregnant within twenty-four months, and nearly 70 percent of them within thirty-six months.¹⁸ Achieving a pregnancy may take longer with NPT than with IVF, but the number of women who achieve a pregnancy with NPT is higher than the number of women who achieve a pregnancy with IVF. In addition, the already encouraging pregnancy rates cited from the recently published definitive textbook, *The Medical and Surgical Practice of NaProTechnology*, are expected to increase even more as surgical techniques and the ability to treat ovarian and target organ dysfunction (OTOD) improve.

sions following reconstructive pelvic surgery, the surgeon must pay attention to the details of skin incisions, intermittent irrigation, use of hydro-packs, choice of suture, the choice of cutting instruments, tissue closure, uterine suspension, adhesion barriers, the use of clear fluid for irrigation, and closure of the peritoneum.

¹⁷Ibid., 536.

¹⁸Ibid., 680–681.

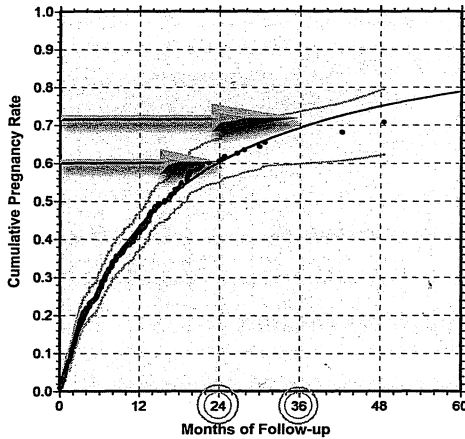


FIGURE 4. Cumulative pregnancy rate among infertile patients treated with NaPro Technology.

Eighth, the cost of NPT infertility protocols will vary from couple to couple depending on the more or less expensive medical or surgical interventions that are needed to successfully treat the pathology underlying the infertility. Increasingly, however, insurance providers are covering many of the NPT medical and surgical interventions because they categorize them (rightly, in our estimation) as treatments for disease.

NPT Treatment of Infertile Women with Regular Cycles

Since most of the infertile patients who have come to the Pope Paul VI Institute clinic have presented with regular cycles, that is, cycles lasting from twenty-one to thirty-eight days, I will only describe the evaluative, diagnostic, and treatment regimen for this category of patient.

First Visit. The NPT physician takes the infertile patient's history and determines her cycle category. In this case, the woman reports that she has "regular cycles," or cycles lasting somewhere between twenty-one and thirty-eight days. The physician directs the patient to a practitioner who will teach her and her husband how to chart their cycles using the Creighton Model System (CrMS).

Second Visit. The patient returns with at least two months of charts. The NPT physician accomplishes three goals during this second visit:

1. The physician conducts a physical examination.
2. The physician reviews the patient's charts with close attention to CrMS biomarkers. He or she categorizes the woman's chart according to mucus cycle type; determines the length and stability of its post-peak phase, the length (and

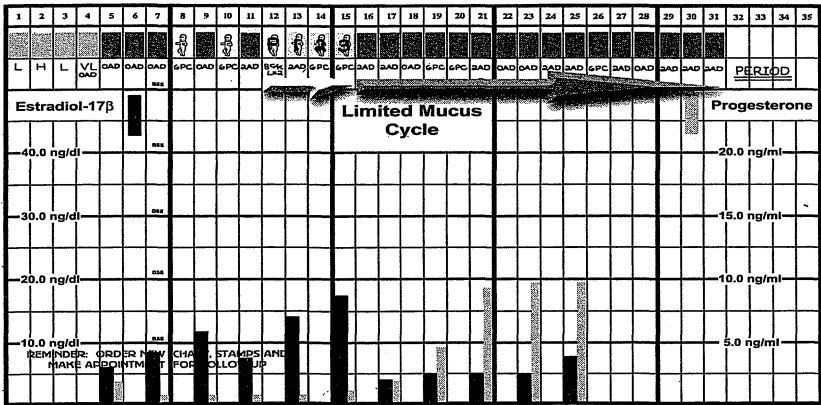


FIGURE 5. Chart showing very limited mucus cycles with a prolonged post-peak phase.

characteristics) of its pre-peak phase, and the length of the cycle as a whole; and notes whether there is premenstrual spotting or tail-end brown bleeding and their significance.

- If the infertile patient with regular cycles presents with charts like the one shown in Figure 5, the physician will categorize them as very limited mucus cycles with a prolonged post-peak phase. This kind of chart, the NPT physician knows, is suggestive of suboptimal preovulatory and postovulatory hormone profiles and a lutenized unruptured follicle.
- If the infertile patient presents with charts like those shown in Figure 6, the NPT physician categorizes them

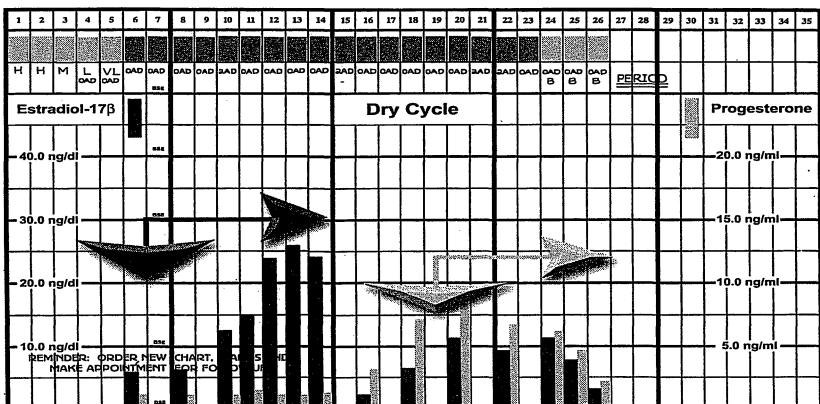


FIGURE 6. Chart showing regular-length dry cycles.

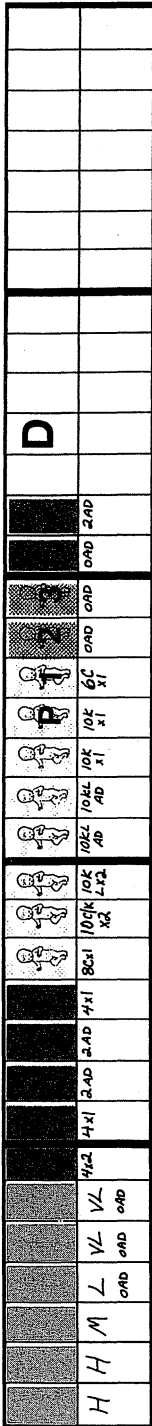


FIGURE 7. Chart showing a regular, short post-peak-phase cycle.

as regular-length, dry cycles. Regular, dry cycles suggest to the physician decreased hormone parameters associated with poor folliculogenesis and luteogenesis.

- When the infertile patient with regular cycles presents with charts like the one shown in Figure 7, the physician categorizes them as regular, short post-peak-phase cycles. A short phase after peak day suggests to the NPT physician an inadequate-length luteal phase, caused by suboptimal levels of progesterone due to an inadequate corpus luteum.
- If the infertile patient presents with charts of regular-length, normal mucus cycles, suggesting no major hormone abnormalities or ovarian dysfunction, the NPT physician knows that this sort of chart is often associated with male infertility factors, such as oligospermia or azospermia, or with female organic factors such as tubal anomalies, endometriosis, or polycystic ovarian disease (PCOD).
- If the patient's charts look like the chart shown in Figure 8, the physician classifies them as dry cycles with premenstrual spotting. Both premenstrual spotting (when blood is a pinkish color) and tail-end brown bleeding (when brown bleeding occurs at the end of the menstrual cycle) may indicate the possibility of low progesterone levels, which can be associated with endometritis (i.e., inflammation of the uterine lining).

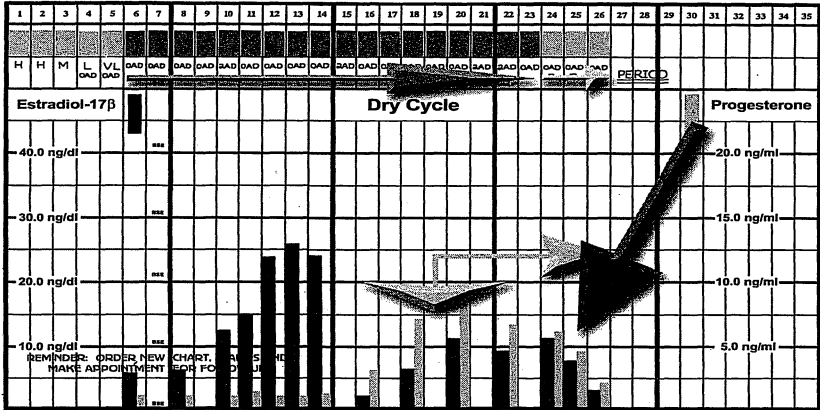


FIGURE 8. Chart showing a dry cycle with premenstrual bleeding.

The important point is that the characteristic biomarkers of these charts point the physician with consistent reliability to the underlying pathophysiology of the infertile patient.

3. The physician orders the following tests:

- *A seminal fluid analysis.* If the husband's sperm count is zero (azospermia), the count should be repeated to determine whether there is an obstruction of the vas deferens. If there is no obstruction and azospermia is the correct diagnosis, then the rest of the medical evaluation for this infertile patient is cancelled, unless the woman has gynecological anomalies that need to be addressed (e.g., chronic pelvic pain, severe dysmenorrhea, dyspareunia, or severe premenstrual symptoms). Even though there is no further NPT infertility treatment that could help this couple, the physician, drawing on the pro-family philosophy behind NPT, will discuss with them alternative means by which they can give life to other people's children.

If the husband's sperm count is normal or only suboptimal, the remaining diagnostic tests are ordered:

- *A full-series menstrual cycle hormone profile*, which measures periovulatory estrogen levels, postovulatory progesterone and estradiol levels, male hormone levels, thyroid hormone levels, and gonadotropin and beta endorphin levels.
- *A follicular ultrasound series* (described on p. 213).

- *Surgical interventions:* diagnostic laparoscopy (to diagnose organic or structural anomalies of the pelvis associated with infertility), hysteroscopy (to diagnose uterine abnormalities associated with infertility), and a selective hysterosalpingogram (to diagnose and treat fallopian tube anomalies associated with infertility).

Third Visit. The physician shares the laparoscopy videotape with the couple, reviews all test results, and gives a comprehensive case management review with NPT medical and surgical solutions in mind.

*Case Presentation*¹⁹

Presentation of the case of a forty-two-year-old patient from California who was treated at the Pope Paul VI Institute for infertility is the best way to sum up NPT's characteristic management of infertility.

Evaluation. The patient presented to Dr. Hilgers with a history of regular-length cycles. Her responses on the "Female General Information Form" revealed that her previous diagnostic workup had been limited to annual gynecological checkups and that she failed two cycles of IVF with intracytoplasmic sperm injection (ICSI). Her husband's responses on the "Male General Information Form" indicated that he had undergone varicocele surgical repair after diagnoses of oligospermia and very low sperm motility. The woman reported that her obstetrician-gynecologist was convinced that she was ovulating normally, and her fertility specialist had suggested that, because of her age, the age of her eggs, and her husband's suboptimal sperm, IVF with ICSI represented her best shot at a pregnancy.

Diagnostic Protocols. Dr. Hilgers directed the patient to a CrM FertilityCare practitioner (FCP) in California so that she could learn to chart her cycles. Two months later, she returned to Omaha and presented Dr. Hilgers with two months of charting for his evaluation. The biomarkers of her charts revealed regular-length cycles (suggestive of endometriosis or PCOD) with borderline limited mucus (suggestive of hormonal abnormalities), no unusual bleeding, a normal post-peak phase length, and a normal menses. Dr. Hilgers ordered a full-series menstrual cycle hormone profile, a follicular ultrasound series, and a diagnostic laparoscopy and hysteroscopy. Results of the

¹⁹ Ibid., 537-539.

hormone profile indicated suboptimal post-ovulatory progesterone and beta endorphin levels. The follicular ultrasound series revealed normal ovulation with a single follicle showing a complete rupture on day seventeen of the cycle, and normal folliculogenesis. The diagnostic laparoscopy and hysteroscopy showed endometriosis.

Treatment Protocols. The patient's husband was given low-dose clomiphene citrate (Clomid), 5 mg. twice a day, to improve his sperm count. The patient's endometriosis was lasered at the time of the diagnostic laparoscopy. The patient returned to California and began a cycle-by-cycle treatment with Clomid to induce ovulation and to help correct the underlying hormonal dysfunction. This segment of the treatment was monitored long-distance by Pope Paul VI Institute clinicians.

Outcome. During the eighth cycle of treatment, the patient conceived. The pregnancy was supplemented with natural progesterone. At term, the patient delivered a healthy baby girl.

Ethics Assessment

No couple has a right to a baby. Couples do, however, have a right to marital acts and, with that right, the corresponding duty to collaborate *responsibly* with "the fruitful love of God."²⁰ Here, I will compare and contrast the intrinsic morality of hIVF/ET with that of the NPT approach to infertility, in hopes of resolving one central question. Do these respective infertility treatments assist couples to collaborate responsibly with God's life-giving love?

The (small-c) catholic norms that I will use to adjudicate the morality of these respective treatments have certainly not developed in a vacuum. They follow directly from the Church's comprehensive vision of the human person, which is rooted in reason and confirmed by faith. In turn, that vision and its correlative norms shed light and meaning on an infertile couple's lived experience of the personal nature of their procreative capacity. Thus, infertile couples who seek to realize their good goal of wanting to conceive a baby of their own can use these norms as guideposts directing them to a good means—an infertility treatment that promotes the values of life and procreation.

²⁰ *Donum vitae*, Introduction, n. 5.

The Catholic Vision of the Value of Human Life

The life of every human being is a gift from God, the way God shares with each human being "his breath of life," "his image and imprint."²¹ *Shares* is the operative word here. God does not surrender his Lordship over life, but entrusts life to every human being as a proprietor would his household to a steward. Our ensuing responsibility, as human recipients of the gift of life, is to uphold and care for, rather than control and dominate, our own life and that of others.

Thus, God alone is the Lord of life from its beginning until its end: "no one can, in any circumstance, claim for himself the right to destroy directly an innocent human being."²² Absolute respect for the integrity of new human life follows from natural truths about the human person.

First, the human being, unlike plants and animals, is created in God's image and likeness. This means that, of all material creatures, the human being alone is rationally intelligent and free. It is the dignity of personal intelligence and freedom—that capacity of the composite human being to reveal his person through his body and bodily actions—that defines the human being as a creature who is an end in himself, a being whom God created not to be used by others merely as a means to their own ends, but someone to be valued and loved in and for himself.

It is the inherent dignity or the ontological goodness of *bios* (human life) that grounds the inviolability of the life of every human person—unique and unable to be given over completely to someone else. The human being is a subject, an "I," whose being cannot be reduced to an "it," an object of manipulation. For this very reason, *Donum vitae* defines each person's right to life as "a sign and requirement of the very inviolability of the person to whom the Creator has given the gift of life."²³ No matter their size, age, or stage of development, all human beings share equally in fundamental human rights, the first of which is the right to life.

Second, as a being whose rational soul is infused by an immediate, creative act of God, the human person stands in an irrevocable relationship with his Creator. The human per-

²¹ John Paul II, *Evangelium vitae* (March 25, 1995), n. 39.

²² *Ibid.*, quoting *Donum vitae*, Introduction, n. 5.

²³ *Donum vitae*, Introduction, n. 4.

son, nuptially related to God, receives all of creation, including his or her life and embodied existence—as well as those of other persons—as gift. The covenant between the human being and God that is begun in the act of conception is destined to be consummated in “an eternal life of beatific communion with God.”²⁴ The vocation to give self and to receive the other as gift resounds, then, in the nature of every human being who is made in the image of the person of God, the radical giver.

Correlative Norms Protecting Human Life

Three norms pertaining to infertility treatment follow from this vision of human life:

1. Infertility interventions must respect the inviolable integrity of a newly developing human life in vitro and in utero.
2. Spouses do not have a right to a child.
3. A child has the right to be conceived within marriage.

I will apply each norm, in turn, to hIVF/ET and to NPT.

*Respect for the Inviolable Integrity of a Newly Developing Human Life*²⁵

Applied to hIVF/ET. *Donum vitae* highlights the *reductio ad absurdum* of reproductive technologies, such as IVF, that bring life through death. The philosophy behind IVF simply tortures logic beyond all comprehension. Prior to any fertilization in the laboratory, the IVF specialist arrogates to himself the right to instruct the couple which of their embryos will be transferred, which will be surrealistically suspended through cryopreservation, which will be donated to destructive embryonic research, and which will be discarded because of developmental abnormalities. Keep in mind that all of this anti-life violence is directed toward embryos who fall outside the most popular justification for abortion, namely, “unwanted” babies resulting from so-called unplanned pregnancies. IVF embryonic human beings are specifically produced *for* reproductive purposes.

²⁴ John Paul II, “Letter on the Occasion of the 23rd National Congress of the Italian Catholic Physician’s Association” (November 9, 2004), http://www.vatican.va/holy_father/john_paul_ii/letters/2004/documents/hf_jp-ii_let_20041109_medici-cattolici_en.html.

²⁵ *Donum vitae*, II, introduction.

Moreover, usurpation of dominion over the lives and deaths of these in vitro embryos is not limited to decisions to transfer, to cryopreserve, or to destroy. It also extends to serious endangerment of the baby's postnatal life and health. The higher number of multiple births that occur through IVF bring a commensurately higher risk for premature birth with low and very low birth weight, fetal distress, and low Apgar scores.²⁶ Prematurity compromises the child's chances for normal motor and mental development.²⁷

As a way to defuse the unhealthy and even life-threatening situation of multiple pregnancies, the perinatal philosophy behind IVF also relies on another anti-life notion, namely, selective termination. Take the case of a mother who, as a result of IVF and ET, begins to successfully gestate triplets. Even should the woman experience second-trimester difficulties that could cause developmental compromise for all three fetuses, the responsibility of the fertility specialist in transferring three or more embryos in the first place can easily be expunged. The IVF specialist is confident that, if necessary, the woman's obstetrician or perinatologist will suggest that the mother reduce the pregnancy from triplets to twins by selecting the least healthy baby for termination.²⁸

Applied to NPT. All NPT treatments for infertility respect the right to life and bodily integrity of human beings in utero. As we have seen, NPT protocols not only do nothing to deliberately destroy a newly gestating human life, they do everything to facilitate a healthy full-term pregnancy.

In the care taken to avoid high-order pregnancies in women who are given hyperovulatory drugs, there is even fur-

²⁶ Apgar scores are an assessment system for newborns developed by Virginia Apgar that quantitates the huge changes a newborn undergoes during the first few minutes of extrauterine life. The Apgar system adjudicates five features at one minute and at five minutes after birth: respiratory effort, heart rate, color, muscle tone, and motor reactions. Each factor is scored between zero and two, with a total of ten possible points. A low total of zero to three means the baby is probably not breathing well and has a slow heart rate and, therefore, needs resuscitation. A score of seven to ten indicates a well baby. Clayman, *AMA Encyclopedia*, 124.

²⁷ Hilgers, *Applications of NPT*, 488.

²⁸ Barbara Carton, "Agonizing Decision: Multiple Pregnancies Are Often Pared Back in 'Fetal' Reduction," *Wall Street Journal*, November 21, 1997.

ther demonstration of NPT's respect for the life and safety of both mother and baby. NPT's ovulation induction protocols require that, when a low-dose human menopausal gonadotropin is used, it be tracked with daily ultrasound to determine the effects of the drug on ovarian production of mature follicles. If four or more ovarian follicles mature, the couple is counseled not to have intercourse that cycle, and the dosage of the drug is decreased.²⁹ The statistics I presented on the low rate of multiple and premature births incontrovertibly attest to NPT's respect for the life and bodily integrity of NPT mothers and their babies.³⁰

Do Spouses Have the "Right" to a Child?

Children are, and must be viewed as, a personal gift, "the supreme gift ... of marriage."³¹

Applied to hIVF/ET. Providers and users of IVF demonstrate an overtly utilitarian outlook. Infertile couples have the "right" to reproduce in any way they please and to conceive their own baby in the easiest, most expedient way they can. But the tradeoff for expedient baby-making is a devastating depersonalization. As we have seen, IVF fertility specialists reduce the parents to suppliers of fertilization material and reduce the baby to an end-product controlled by scientific technology. With this kind of objectivization, IVF's aim is straightforward: to ensure that the product it literally makes "by hand" is commensurate with the demand of consumers and conforms to the specifications of parental will and design.³² After all, the quality and number of in vitro embryos

²⁹ Hilgers, *Applications of NPT*, 616.

³⁰ *Ibid.*, 692.

³¹ *Donum vitae*, II. B.8.

³² In his inimitable way, Leon R. Kass underscores the dehumanization that incurs when life is manufactured in vitro: "With in vitro fertilization, the human embryo emerges for the first time from the natural darkness and privacy of its own mother's womb, where it is hidden away in mystery, into the bright light and utter publicity of the scientist's laboratory, where it will be treated with unswerving rationality, before the clever and shameless eye of the mind and beneath the obedient and equally clever touch of the hand. What does it mean to hold the beginning of human life before your eyes, in your hands—even for five days (for the meaning does not depend on duration)?" Kass, *Toward a More Natural Science* (New York: The Free Press, 1985), 126.

are judged by "conditions of technical efficiency" which are, ultimately, "standards of control and dominion."³³ Even the personhood of in vitro embryos awaits assignment by its manufacturers.

Applied to NPT. NPT's approach to infertility, together with the genuine humanist culture it generates, encourages couples to work cooperatively with nature, to use their reason not primarily to calculate the most expeditious way for the greatest number of infertile couples to get pregnant, but to discover and appreciate the laws of their nature and to freely cooperate with them. This dispositive attitude toward fertility begets a genuine notion of what it means to conceive a child "with the help of the Lord" (Gen.4:1). Couples who have successfully been treated for infertility through NPT, and conceive as a result, do so within their own acts of intercourse. And conceiving naturally *necessarily* requires that the parents relinquish control over their baby.

I have learned, through my eight years of experience with many NPT parents, the moral ramifications of that kind of surrender. Whether it was prenatally or postnatally, I witnessed NPT parents talking about and treating their children in a way that can only be described as profoundly respectful. Each child is a person who is cherished for his or her uniqueness, accepted as a novel life never before lived, welcomed as an "unbidden surprise"³⁴ for whatever specific combination of handicaps and talents he or she might have, and cherished for his or her uncharted mission in life.

In sum, what I have observed is that as a result of their openness to the possibility of parenthood within their acts of sexual union—despite problems with infertility—NPT users acquire a correct understanding of what it means to be a parent. Their good parenting translates into just relations between them and their children.

*The Child's Right to be Conceived within Marriage*³⁵

Applied to hIVF/ET. To date, I have not found a serious discussion referencing *any* rights of an IVF child—to say nothing of whether that child has a right to be conceived in a natural

³³ *Donum vitae*, II. B. 4c.

³⁴ Leon R. Kass and James Q. Wilson, *The Ethics of Human Cloning* (Washington, DC: AIE, 1998), 33.

³⁵ *Donum vitae*, II. A. 1.

way. Nor do I expect to see such a work in the future. In the world of IVF and ET, the rights of the parents trump all.

However, I have a theory. The day we as a society recover our sense of the natural and the symbolic will be the day we are able to objectively evaluate the impact of depriving children of a "secure and recognized relationship"³⁶ to their parents' embodied love from the *first*, and *most vulnerable*, days of their life.

Applied to NPT. As already noted, NPT unambiguously helps the infertile couple conceive a child within their own acts of sexual love. Predictably, this approach to infertility also encourages NPT parents to appreciate and respect the right of their children to be conceived within, and therefore to be intimately connected to, the protection, security, and, yes, intimacy of their bodily union.

The Catholic Vision of the Value of Human Procreation

God calls a husband and wife to image his inner family life through the language their bodies speak in the act of marital intercourse. The spousal meaning of a couple's vocation to procreation—to share in the divine "mystery of Creator and Father"—is *inscribed in* the meaning of their vocation to love, "the mystery of [their] personal communion."³⁷

But what does it mean for the Church to say that the act of giving life to a new human being is inscribed—that is, indelibly engraved—within the very act of giving love? To my mind, the Church invokes this powerful image to help a husband and wife better grasp how the procreative meaning of their sex acts—their vocation to parenthood—*defines, activates,*³⁸ and *demand*s its love-giving counterpart. We might even say that in this imagery the Church is exposing infertile couples—and all of us—to a glimpse of the providential mercy of the divine design for human conception. God intends that human beings be conceived naturally so that each and every last one of us could take consolation from, and find security in, the knowledge that we *came to be out of* a personal act of our parent's *love*. Through the simple but powerful image of inscription, the

³⁶ Ibid.

³⁷ Ibid., Introduction, n. 3.

³⁸ John Paul II, *Theology of the Body: Human Love in the Divine Plan* (Boston: Pauline Books & Media, 1997), 398.

Church opens the minds of infertile couples to see why their act of sexual union is the *only* genuinely loving, and therefore human and moral, means for them to beget children.

The inseparable connection between the love-giving and life-giving meanings of marital union is not only rooted in the intrinsic structure of the marital act. It is also, and even more profoundly, anchored "in the very nature of the man and the woman," who are, at once, body and soul, gendered and generative beings.³⁹

As the second creation account of Genesis teaches, male and female human beings are "halves, not wholes" of humanity. In their acts of marital union, a man and a woman are each drawn out of their incomplete, insufficient, mortal selves into a communion of persons. In their marital embrace, the couple symbolize and signify the transcendent, whole meaning—the completeness, sufficiency, and immortality—of a spousal love that imitates God's life-giving love. Bringing new human life out of their sexual act of love capacitates the infertile couple to transcend their "separateness through the children born of [their] sexual union."⁴⁰

Correlative Norms Protecting the Value of Human Procreation

Two norms pertaining to infertility treatment follow from this view of human procreation:

1. Infertility treatments must assist, not replace, the conjugal act.
2. The dignity of conceiving a baby demands the sexual complementarity, the "two-in-one-flesh" union, of husband and wife.

I will apply each norm, in turn, to hIVF/ET and NPT.

*Assistance, Not Replacement, of the Conjugal Act*⁴¹

This is important so that "the procreation of a human person be brought about as the fruit of the conjugal act specific to the love between spouses."⁴²

³⁹ Ibid., 387.

⁴⁰ Kass, *More Natural Science*, 114 and 291; *Donum vitae*, II. B. 4b.

⁴¹ *Donum vitae*, II. B. 7.

⁴² Ibid., Part II, B, n. 4.

Applied to hIVF/ET. Because fertilization of gametes takes place in a laboratory, IVF necessarily replaces the conjugal act.

Applied to NPT. Insofar as the identification and treatment of infertility's underlying pathologies facilitate natural conception, NPT's medical and surgical treatments unambiguously help the couple's act of conjugal union attain its natural end.

Conception within the "Two-in-One-Flesh"
Union of Spouses

Applied to hIVF/ET. By ignoring the unitive dimension that alone makes sense out of the mystery of sexuality and human renewal,⁴³ IVF renders the production of new human life unintelligible. To shift conception from womb to laboratory is to jettison the personal, sexual context of transmitting human life. The price of generating new human life "sexlessly" requires us to "pay in coin of our humanity."⁴⁴ Recall Brinsden's account of the rather hapless stance and dress of the IVF father, separated from his wife by the sterile surroundings of a surgical theater. Under laboratory lights, fertilization and transfer of the human gametes take place in a series of impersonal, extra-bodily actions which relegate parents to the role of suppliers and bystanders.⁴⁵

To proceed as if procreation can be separated from sexual union without negative consequence, as IVF does, is a flagrant canard. IVF violates the ultimate truth of human sexuality, the ultimate truth of human dignity, the ultimate mystery of beginning life within the mother's body. The sagacious wit of one of Mark Twain's maxims—"A lie can travel halfway around the world while the truth is putting on its shoes"—helps us understand why and how the deceptions of IVF have so quickly taken on a life of their own.

Applied to NPT. The NPT approach to infertility embraces the wisdom of a natural law insight: the fact that all mamma-

⁴³ Ibid.

⁴⁴ Kass, *More Natural Science*, 114. *Donum vitae* (II, Introduction) warns couples who utilize IVF that they also become the victims or patients of the same "dynamic of violence and domination" which is leveled against the child who is to be conceived.

⁴⁵ Kass calls the IVF scientist-physician the one who "presides over many creations in many patients." As such the IVF physician is not only the "sower of the seed" and the "fertilizer general" but the "matchmaker" as well. *More Natural Science*, 70.

lian reproduction is "the generation of new life from (exactly) two complementary elements, one female, one male, (usually) through coitus."⁴⁶ This insight automatically takes on the status of a moral norm when the mammals involved are human persons. Allowing the couple to responsibly respect "the language of their bodies" evidenced in their "natural generosity"⁴⁷ and desire to have their own baby is the cachet of NPT's approach to infertility.

Responsible Cooperation

In sum, there is one critical fact damning hIVF/ET as an option to family-building: it is an inherently immoral reproductive technique. First, formed by a scientific worldview that refuses to admit of the natural teleology and normative indicators of human fertility, IVF profanes the true meaning of human procreation. Second, driven by a utilitarian view of nascent human life, IVF allows, and even encourages, the deliberate destruction of human embryonic and fetal life. As such, even when hIVF/ET results in a pregnancy, it is a pyrrhic outcome. It does not and cannot present infertile couples with a good means to the good end of conceiving their own baby. It does not allow infertile couples to cooperate responsibly "with the fruitful love of God." And, from a medical standpoint, although a woman may conceive her biological baby as a result of IVF and ET, she will still be infertile after giving birth. There seems to be more than just negative medical implications from the conclusion that, as a treatment for infertility, IVF per se does nothing to treat infertility.⁴⁸

⁴⁶ Kass and Wilson, *Ethics of Cloning*, 24.

⁴⁷ *Donum vitae*, II. B. 4b.

⁴⁸ IVF statistics refer to the success rate for IVF treatment of women with endometriosis or polycystic ovaries, referring to the rate at which the "treatment" gets these women with various infertility-causing diseases to respond with a pregnancy. It needs to be pointed out that the success rate attributed to IVF does not reflect how well it has treated the respective underlying disease (such as endometriosis, PCOD, tubal occlusion) directly but how well IVF gets women pregnant despite those pathologies. Women who deliver after IVF are still infertile in the sense they are still afflicted with the same pathology that caused their infertility before the conception of their IVF baby. They will still not be able to conceive naturally. In "IVF: Who's Pushing Who?" ABC Science Online reporter Anna Salleh interviewed Dr. Amin John Abboud, an Australian doctor and bioethi-

NaProTechnology, on the other hand, is an inherently moral technique for treating infertility. First, it respects the dignity of human procreation: NPT—by diagnosing and treating the pathology causing infertility—enables the infertile couple to conceive through their own acts of intercourse. Second, it respects the dignity of human life: NPT protocols support the pregnancy from day one forward, so mother and baby can be healthy throughout the forty ensuing weeks of gestation and at the time of delivery. In sum, NaProTechnology tugs parents in the direction of cooperating responsibly “with the fruitful love of God.”⁴⁹ This, I hope you agree, is good news squared.

cist who researched the IVF industry in preparation for his address on IVF to the World Congress of Bioethics (ABC Science Online, November 8, 2004, http://abc.net.au/science/news/health/HealthRepublish_1235782.htm). Abboud concluded that couples were being offered the option of IVF before the cause of their infertility was fully established and all options were considered. This practice makes it almost impossible to get accurate effectiveness studies, since there are no standard eligibility criteria for IVF programs that are universally required.

⁴⁹I would suggest emulation of the following educational precedent for exposing physicians, clergy and couples to NPT. In the Irish Bishops' Committee for Bioethics recommends NaProTechnology to Irish couples as a moral treatment for infertility—over IVF, ICSI, GIFT, artificial insemination by husband, intrauterine insemination, and artificial insemination by donor—because NPT “invariably involves natural (or in vivo) fertilisation. It does not, therefore, place embryos at risk to their life or bodily integrity. NaPro fosters dialogue and co-operation between the couple, with its emphasis on fertility awareness. The emphasis on respect for the natural reproductive process means that NaPro is consistent with the meaning and integrity of human sexuality.” Bishops' Committee for Bioethics, *Assisted Human Reproduction: Facts and Ethical Issues* (Dublin, Ireland: Veritas, 2000), <http://www.catholiccommunications.ie/pastlet/ahr.html>.