

REPRODUCTIVE TECHNOLOGY: A CRITICAL ANALYSIS OF THEOLOGICAL RESPONSES IN CHRISTIANITY AND ISLAM

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Abstract. Reproductive medical technology has revolutionized the natural order of human procreation. Accordingly, some have celebrated its advent as a new and liberating determinant of kinship at the global level and advocate it as a right to reproductive health while others have frowned upon it as a vehicle for “guiltless exchange of sexual fluid” and commodification of human gametes. Religious voices from both Christianity and Islam range from unthinking adoption to restrictive use. While utilizing this technology to enable the married couple to have children through the use of their own sexual material is welcome, the use of third party, surrogacy, and reproductive cloning are not in keeping with the sacrosanct principles of kinship, procreation through licit sexual intercourse, and social cohesiveness for building a cohesive family as upheld by both Christianity and Islam. To examine such larger issues emanating from these new ways of human procreation, beyond the question of legality, is a point which legal scholars in both Christianity and Islam, when issuing religious decrees, have not anticipated sufficiently. The article proposes to be an attempt to that end through a qualitative critical content analysis of selected literature written on the subject.

Keywords: Christian paradigm; critical analysis; kinship; Muslim family law; reproductive technology

Ever since the birth of Louise Brown in the United Kingdom in 1978 via in vitro fertilization (IVF) and the success story of intracytoplasmic sperm injection (ICSI) in Belgium in 1992, biomedical technologies have made great strides in helping not only infertile couples but even gays and lesbians to have children (Inhorn 2009, 115; Grebeldinger 2013). Societal responses to this technological advance by and large have been one of radical support

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and cautious acceptance. For instance, Western feminists celebrate it as “freeing the Western civilization from the prejudice of morality” (Inhorn 2009, 119), while Christian theologies perceive it with mixed reactions due to a host of moral hazards that it entails for the integrity of family and lineage clarity. In the Muslim world, legal scholars’ reaction to this technology dates back to the permissibility of fertility treatment for legally married couples through the use of their own semen, the banning of third party involvement, the posthumous use of frozen embryo, and surrogacy by virtue of a *fatwa* by the Grand Shaikh of Al-Azhar on 23 March 1980 (Inhorn 2011, 89). To Inhorn and Gurtin (2012), this *fatwa* provided the basic framework for subsequent legal opinions among Sunni scholars on similar and other emerging issues in the field (Inhorn and Tremayne 2012, 13). The Shi’a stand, on the other hand, ranges from dissenting liberal permissive views to that of a predominately restrictive position, given the fundamental differences of their jurisprudential structure from that of the Sunni (Inhorn and Gurtin 2012, 25; Inhorn and Tremayne 2012, 13).

The divergent legal scenario, at the microlevel, proves attractive for common Muslims due to a number of sociopolitical, commercial, and anthropological variables (particularly among Muslims in the Middle East), namely: fulfillment of a barren male’s fervent desire for children as proof of his potency and his part in realizing the social vision of Islam in achieving a large Muslim constituency; proving male virility (manhood) and female fertility to avoid being stigmatized as barren and envious of fertile women’s children; inhibiting the tendency for polygamy on the part of a man profoundly in love with his only wife; the political desire of the state to be seen as modern and an embracer of modern technology in addition to its motive to become a hub for reproductive tourism; and so on (Clarke 2009, 96; Inhorn 2009, 120; Inhorn and Gurtin 2012, 25; Inhorn and Tremayne 2012, 14).

Accordingly, Inhorn describes the scenario among the Muslims of the Middle East as more receptive of this medical technology than people of the West (Inhorn 2009, 120; Inhorn 2011, 97). Many men resort to it secretly through repro-tourism (Vergin 2012). The reason is that in the West, to Tremayne (2012, 70), such decisions are subject to the approval of various medical, legal, and ethical committees while in Muslim countries the view of the clergy is decisive over all other authorities.

At the macrolevel, which matters less to the desperate infertile couples, the dilemma is one of striking a balance between pragmatic consideration of overcoming the problem of infertility and the core principles of sexual purity and lineage clarity within the paradigmatic framework of Muslim family law and Christian ethics. Accordingly, this article proposes

to critically review both Christian and Muslim theological responses with the intention of recommending some methodological points for further deliberation.

MARRIAGE IN CHRISTIANITY

Marriage and family are social units designed by God. Through marriage, a man and a woman thus make exclusive commitment to love, provide companionship and intimacy, and consequently, procreate. The expectations to have children are for twofold purposes: unity and procreation. God created man in His own image and likeness, “male and female He created them” (Genesis 1: 27), entrusting them with the task of “having dominion on earth” (Genesis 1: 28). It is within the context of marital unity and union that God posited the reproductive power in human persons.

The biblical teachings of marital unity and union are indeed very assertive. The Bible says, “Therefore a man shall leave the father and mother and be joined to his wife, and they shall become one flesh (have sex)” (Genesis 2: 24). The married couple should enjoy each other’s company and render sexual affection for each other (Proverbs 5: 15–19). Having children from marriage is part of God’s gift to married couples and children are considered a great blessing. This is beautifully phrased in the Bible, “So God created man in his own image, in the image of God he created him; male and female he created them. And God said to them, ‘Be fruitful and multiply and fill the earth and subdue it and have dominion over the fish of the sea and over the birds of the heavens and over every living thing that moves on the earth’ ” (Genesis 1: 27–28).

From the biblical perspective, human procreation via sexual relations is a God-designed human phenomenon, a natural continuity between sex in marriage and parenthood. God declares in the Bible, “I will surely bless you and make your descendants as numerous as the stars in the sky and as the sand on the seashore” (Genesis 22: 17). Thus, children, a natural result of sexual relations between a husband and wife, are categorically termed in the Bible as “. . . a blessing and a gift of the Lord” (Psalm 127: 3). Married couples should continue to have children, as their birth is a source of joy. This joyful biblical narrative is expressed as “Sons are a heritage from the Lord, children a reward from him. Like arrows in the hands of a warrior are the sons in one’s youth. Blessed is the man whose quiver is full of them” (Psalm 127: 3–5).

Through marital sex and having children, the biblical expectations that men and women have to reflect His image are fulfilled (Genesis 1: 27) which means fundamentally, sex in marriage is aimed to accomplish the divine purpose for procreation.

PROCREATION OF CHILDREN THROUGH MARRIAGE

In Catholic traditions, sex is reserved for marriage and this is why it leaves little room for any kind of reproductive technology that could replace the natural process resulting in human procreation. Thus, it also rules out any third party involvement that would replace one of the spouses for the purpose of procreation. In other words, only through licit sexual relations is it legitimate to procreate children.

Christians regard the functional principle of lifelong union of partnership as the coming together of a man and a woman. Thus, Christians view sexual relations between a man and a woman in the context of marriage. The Old Testament contains many phrases to denote that sexual relations of human beings are between a married man and his wife. In Genesis 2: 18–23 it is written “And the LORD God said, It is not good that man should be alone; I will make him a helper as his partner. . . . So the Lord God caused deep sleep to fall upon the man, and closed its place with flesh. And the rib that the LORD God had taken from the man he made a woman and brought her to the man.”

In the above passage, God is said to have created Eve from Adam’s ribs. This is to provide Adam with a companion. Eve was a woman and partner to Adam and not a third party, as this would have thwarted God’s plan of a man and a woman relation. Basically, from this moral point of view, procreation through third party involvement is a deprivation of the desired specific act of the spouses’ union: the procreation of a human person brought about as the fruit of a conjugal act borne out of the love between two married persons (Vatican on Doctrine of Faith 1987, 704–05). Ultimately, licit sexual relations must give rise to procreation and not otherwise. Procreation cannot occur outside marital sexual intercourse, and every conjugal act of marriage must be open to procreation as the natural result of God’s design (Vacek 1992, 329–46).

In the Bible, the function of sex is not only concerned with unity but also procreation. The very notion of the teaching “Therefore a man leaves the father and his mother and cleaves to his wife and they become one flesh” (Genesis 2: 24) is actually the foundation of marriage. The nature of marriage revealed in this biblical understanding of marriage is in fact referred to as covenant relationship. Being a sacred covenant, human marriage is the prism through which God reveals His covenant relationship with His people.

The function of sex in the Bible not only serves to permit sexual relationships between a husband and a wife but also to the aspect of procreation, that is, the possibility of bringing children into this world. The Bible declares, “Be fruitful and multiply and fill the earth . . .” (Genesis 1: 28), expressing God’s original intent for the purpose of sex.

PROCREATION OUTSIDE MARRIAGE IN CONTEMPORARY CATHOLIC THEOLOGY

Infertility has been a source of great sadness, and even anguish, for some married couples. The capacity to want and to have children is a normal or natural aspect of human life. The inability to conceive and give birth to a child is appropriately viewed as a disability, especially when those who are infertile eagerly want to have children and start a family (LeMoncheck 1996, 160–76). For many people, the vision of building a family is the most important concern in their life. But the condition of infertility can interrupt this basic human desire. Infertility is unfortunately a life-changing crisis that affects more than 10% of the reproductive-age population in the United States (Aronson 2000, 97–101).

Infertility is a disease of the reproductive system which affects either gender; the husband or the wife. Old age, infertility, and genetic diseases are some of the common factors that make natural childbearing impossible. However, advances in modern science have now made it possible to procreate outside the sexual union of spouses.

According to some theologians, the Bible allows the use of modern technology to overcome the problem of infertility. One of the biblical arguments used is from the narrative of God's creation mandate given to mankind to exercise "dominion over the earth" (Genesis 1: 26). It is assumed that God gave mankind the ability to discover and apply all kinds of technological innovations to overcome the problem of infertility. For the most part, improved conditions among mankind due to technological innovations are considered part of God's common grace or His blessings on His creations. It does indicate God's appreciation for man's need to impart his social and spiritual heritage onto his offspring or humanity in general (Whitney 2000, 102–05) so as to meet the divine command "Be fruitful and multiply" (Genesis 1: 28).

For instance, contemporary Catholic theologians such as Thomas Shannon and Lisa Sowle Cahill hold that using reproductive technology accords with the distinctive quality of human nature, namely, human reason. Shannon (2004) argues that the traditional Catholic view places too much emphasis on specific sexual acts and too little emphasis on the whole relationship of married couples. He points out that infertile married couple who seek assisted reproductive technology (ART) are demonstrating their openness to procreation within the context of marital fidelity. He questions the moral reasoning that insists human procreation must include a specific act of coitus: "Why the physical integrity of the sexual act should take moral priority over the intention of the husband and wife to become mother and father through the use of their own genetic is both unexplained and unclear" (Shannon 2004, 37–56). In his view, the biblical narration leads to

the conclusion that techniques such as IVF should be made available to infertile married couples by driving home the argument that through IVF, they are essentially cooperating in the creation of a new being from their love and their bodies (Shannon 2004, 37–56).

Similarly, Lisa Sowle Cahill, a leading Catholic ethicist in the United States, reiterates that all procreation techniques within the context of a loving relationship of a married couple are in line with biblical teachings (Cahill 1990, 137–48). She argues that all acts intended to facilitate human conception should be evaluated ethically in terms of how they flow from the marital relationship of love and how they support its fidelity. She suggests that procedures such as homologous IVF should be assessed in terms of the complete relationship of the marriage. She contends that “each and every analysis of the ‘inseparability’ of sex, love, and procreation distorts the valid unity among them by tying that unity to specific sexual acts rather than to the marital status” (Cahill 1990, 137–48).

The Catholic tradition of natural law, which emphasizes natural procreation and parenthood, is not without its merits. This is because increasing scientific innovations present more possibilities of manipulating human life at its earliest stages; at the same time, these advances yield a number of questions regarding how new procedures could be constructive and beneficial on one hand and which are simply too risky on the other (Wanke 2007, 99–103).

ETHICAL ISSUES AT STAKE

Destroying Excess Embryos in IVF. In Christian traditions, the right to live is acquired at conception; destroying or using embryos in experiments is problematic. Destroying them outside the body is the moral equivalent of abortion and science cannot experiment with basic human rights without the person’s consent, particularly since experimentation on an embryo would result in destruction. Storing the embryos might delay the issue but leads to the issue of the separation of the biological and social roles of parents, which is a significant part of biblical teachings (Wanke 2007, 99–103).

The Use of the Third Party in Artificial Insemination. IVF is a relatively simple procedure in which the sperm, either the husband’s or a donor’s, is inserted into the woman’s uterus directly without the normal process of sexual intercourse. In the case of the latter, the donation is almost always anonymous so that the father cannot be traced by the child, nor can he make any contact with the child in the future (Purdy 1989, 103–11). This raises moral questions. In a natural procreation caused by a husband and wife relation, the integrity of the family is maintained and there is continuity between procreation and parenthood. Artificial insemination

by a husband is considered moral, but artificial insemination of a donor raises the question of a third party entering reproduction.

Germ line engineering embraces any of the several techniques which permit the alteration of germinal epithelium, sperm, or eggs, or early products of conception such that genetic changes become permanently encoded in sex cells of resulting adults (Mahowald 2002, 168–84). From an ethical point of view, the most serious objections can be applied to intentional germ line interventions because of the unacceptability of using a person solely as a vehicle for creating uncertain genetic change to his descendants. Lappe (1999, 155–64) asks if it is also morally acceptable to experiment on fetus or embryo solely on the promise of a future benefit.

Surrogacy. In many cases, a surrogate bears the child for the contracting couple, willingly gives up the child to them, and accepts her role with no difficulty (Mahowald 2002, 168–84). Surrogacy itself is not new. The *Old Testament* records two incidents of surrogacy, namely when Hagar said to Abraham, “The Lord has not given me any children, sleep with my slave, and if she had a child, it will be mine” (Genesis 16: 1–6) and “Here, take my servant Bilhah, Rachel told him [Jacob] Have children by her, and I’ll let them be borne on my knees to show they are mine” (Genesis 30: 1–13).

Certainly, the most serious objection to commercial surrogacy is that it reduces children to objects of barter by putting a price on them. This violates the United Nations Declaration of Human Rights 1948, which outlawed slavery (Cook 1993, 73–86). It also violates the widely held Christian principle that safeguards human rights and the dignity of human persons, namely that those human beings are made in God’s image and are His unique creations (Genesis 1: 27). Furthermore, surrogacy involves potential for exploitation. The combination of desperately infertile couples, low-income surrogates, and surrogacy brokers with varying degrees or moral scruples raises the prospect that the entire commercial dealing can be exploitative (Anderson 1990, 71–92).

Surrogacy involves the detachment of the child from its mother from the moment it exists in her womb, a situation that would never happen in normal pregnancy. Surrogacy also violates the right of the mothers to associate with their children. The flourishing of children is best suited in the security of a family relationship in which the mother and the father actively participate in the development of their child’s maturity. From the biblical perspective, children learn their moral responsibilities from their parents (“Memorize his laws and tell them to your children over and over again” [Deuteronomy 6: 6–7]), and children are to honor, respect, and obey their parents (“Respect your father and mother, and you will live in a long and happy life” [Exodus 20: 12 and Ephesians 6: 1]).

Artificial Womb or Uterus. The ethical debate over surrogacy has taken on another dimension in recent years as a result of another device or process that would allow a fetus to develop to maturity without having to spend any time inside the body of a woman; it is called ectogenesis—“external origin” or “outside creation” (Coleman 2004, 2). Medically, it is regarded as another step in overcoming infertility in the case of a woman with a damaged or diseased womb to be able to conceive to term (Ekeke and Uchegbue 2010, 201–08). Additionally, ectogenesis greatly reduces the likelihood of a premature infant’s dying when the infant can be transferred to an artificial womb to complete its growth. There are also other medical considerations, such as overcoming the various risks of diseases, miscarriages, drug problems, pollutants, genetic disorders, and inadequate nutrition by depositing the fetus into an artificial womb (Ekeke and Uchegbue 2010, 201–08).

From the biblical point of view, the womb is a place of creation or procreation. In Ecclesiastes, the Bible says, “Just as you know how the breath comes to the bones of the mother’s womb, so you know the work of God, who makes everything” (Ecclesiastes 11: 5). The main objection here is that the fetus produced in an artificial womb is a direct denial of God’s original handwork of creating women to bear children and establishing an emotional bond, which this device completely disrupts.

Human Cloning. Many people believe that life does not begin at conception with the formation of the embryo and therefore consider embryos as nonhuman beings. Although this is a disquieting aspect of science, it is a major theological misconception and concern as it is absolutely different from the position of the Bible. The Bible says: “For you created my inmost being; you knit me together in my mother’s womb. I praise you because I am fearfully and wonderfully made; your works are wonderful, I know that full well. My frame was not hidden from you when I was made in the secret place. When I was woven together in the depths of the earth, your eyes saw my unformed body. All the days ordained for me were written in your book before one of them came to be” (Psalm 139: 13–16). A more conclusive biblical phrase supporting the fact that humans were personally known by God before they were born is “John the Baptist was filled with the Holy Spirit while he was still in the womb” (Luke 1: 15).

In sum, in the realm of ethical decisions, it is significant that personal integrity be preserved by acknowledging the role of each individual’s conscience. In this particular case, it should also be ethically obvious that both husband and wife must make a personal decision about whether or not to become parents through ART. Many contemporary Catholic theologians such as Shannon and Cahill hold that when nature can no longer fulfill its reproductive purpose, it is reasonable and thus ethical to utilize a technology to attain that purpose. This, they claim, is in line with the biblical

narration where the Creator permitted our first parents the freedom even to make death-dealing mistakes—dramatic evidence that love requires the risk that freedom entails (Genesis 3).

Cahill (1990, 137–48) maintains this conclusion by contending that the act of procreation, whether it is IVF, which is a “manipulation of reproductive technology,” or through sexual intercourse, which is “biological manipulation of one (or both) of two persons” is moral and in accord with natural law as long as it does not cause imbalance in the couple’s marital relationship and does not undermine the couple’s shared relation to their children or society at large.

Similarly, Shannon contends that, from the moral perspective, there is no difference between IVF and physical sexual intercourse. The couple using IVF is essentially doing what another couple is doing without IVF: cooperating in the creation of a new being from their love and bodies (Shannon 2004, 37–56). According to him, what is critical here is the context in which IVF is conducted and keeping one’s attention on the couple, their relationship, and their desire for a family (Shannon 2004, 37–56).

Both theologians share the same notion that the natural law should move beyond the traditional Roman Catholic understanding, but should remain within the general context of Roman Catholic social teachings.

INFERTILITY AND REPRODUCTIVE TECHNOLOGY FROM THE MUSLIM PERSPECTIVE

Infertility refers to fertility impairment where the couple, despite being able to perform coitus, cannot have children. It may be caused by some pathological conditions or birth defects. Some of the known causes of infertility attributed to men are low sperm count, poor sperm movement, damaged testes, abnormality of the veins surrounding the testes, undescended testicles, birth defects, blocked ducts, male ejaculation in the reverse direction on account of severe diabetes, neurological disease, or prostatic surgery (Ebrahim 1989, 92). In the case of women, the causes include absence or blockage of fallopian tubes, closure of tubes due to sexually transmitted diseases or pelvic surgery, failure to ovulate, allergy to the protein contained in the sperm, or uterus absent from birth (Ebrahim 1989, 94).

To overcome these and other causes of infertility, at present time there is an array of ART which enables not only infertile couples to have children but even gays and lesbians to have their own offspring. For the purpose of this study, we briefly mention the following.

Artificial Insemination. Artificial insemination is asexual fertilization of the ova with semen. There are two types of such a procedure: external and internal. To overcome male infertility, internal artificial insemination

is used (Ebrahim 1989, 94). The process involves the injection of the sperm into a woman's uterus (Fadel 2002, 23–25). The sperm may either be procured from the husband or may come from a third party (a donor).

On the legitimacy of using this technology, juristic opinion is divided. The Sunni allow only the first method, provided it involves the gametes of the married couple and it is not done posthumously or after the couple separates (Clarke 2009; Sachedina 2009; Tremayne 2012, 71). There are three reasons for the cautious approach adopted by the Sunni. First, marriage still in existence is the only framework for licit procreation according to the Qur'anic declaration, "It is He Who has created man from water, and has appointed for him kindred by blood, and kindred by marriage. And your Lord is Ever All Power to do what He wills' (Qur'an, 25: 54) or by the words of Prophet Muhammad (s.a.w.), "The child is for the marriage bed and for the adulterer is stoning" (Al-Bukhari 2003, 2).

Second, decency of sexual behavior cannot be compromised, as cautioned in the Qur'an: "Who abstain from sex, except with those joined to them in marriage bond, or (the captive) whom their right hands possess—for (in their case) they are free from blame? But those whose desires exceed those limits are transgressors" (Qur'an, 23: 5–7) and "If any woman establishes a sexual relationship with people other than her lawful husband, God would prohibit her admission into paradise" while the Prophet (s.a.w.) said, "It is not permissible for a man who believes in God and the Hereafter to irrigate with his own sperm the crop sown by another" (Al-Bukhari 2003, 3).

Third, it creates the potential for future half-sibling incest, if the offspring of the same anonymous donor should happen to meet and marry (Inhorn 2011, 89). Finally, medicinal treatment (Karim 1994, 942) through illicit means is only allowed to save life or as a last resort in which a donor's egg or posthumous egg transfer does not qualify. Concluding from the above, Inhorn (2011, 90) maintains that in the Sunni view "the problem with third-party donation, therefore, is that it destroys a child's *nasab*, or lineage, which is considered immoral in addition to being psychologically devastating. The child will be deemed illegitimate and stigmatized even in the eyes of its own parents, who will therefore lack the appropriate parental sentiments."

The Shi'a, on the contrary, hold a divergent view on third party donation. Some allow it under the framework of temporary marriage (*mut'ah* or *sigheh*). For instance, Ali Khamenei, in allowing it, maintains that asexually impregnating a woman with a donor's sperm is permissible as it does not involve sexual intercourse (*wat'*), not coming within the prohibition of *zina*, although the child's paternity cannot be attributed to the husband—similar to an adoptive father—but the owner of the semen will be the biological father. It is a medical necessity (*darurah*) as the wife may not

have ova or the husband may have no sperm. To circumvent this, he prefers the donor to be a near relative (Clarke 2009, 122; Inhorn and Gurtin 2012, 26). According to Tremayne (2012, 72), in Iran, in the case of a husband's barrenness, "the couple may take either one of the two options; first, the wife divorces her infertile husband, waits for three-and-a-half months (*'iddah*) to ensure she is not pregnant and enters into temporary marriage with the sperm donor, without any sexual intercourse. Then she receives his sperm, which is fertilized with her egg outside the womb and is planted in her uterus. She then remarries her previous husband. Or, the couple opts for receiving an embryo from a married couple, which will be planted inside the wife's uterus." Likewise, Ali Khamenei states that frozen gametes of a husband can be used to impregnate his wife posthumously even if she has remarried (Clarke 2009, 122; Inhorn and Gurtin 2012, 26; Inhorn and Tremayne 2012, 13).

Nevertheless, in view of its splitting effect on lineage, Ali Khamenei's *fatwa* (issued in 1999) on the donor's egg met with resistance and was not only overturned by Iran's Council of Scholars in 2003 but was also criticized by some Shi'a authorities (*marja'*) like Fadlullah of Lebanon and Iraq's Ayatollah Sistani (Clarke 2009, 122–25; Inhorn 2011, 90; Inhorn and Tremayne 2012, 10).

Infertility among women who have uteruses, on the other hand, can be treated via external artificial insemination (*al-talqih al-istina' i al-kabriji*; IVF) a process that produces a test tube baby (TTB). It involves a six-step process, namely ovulation induction, egg retrieval, insemination, fertilization, embryo transfer, and pregnancy testing. The working of the process involves: first, injecting a woman with some medication to stimulate egg development; second, retrieving the woman's eggs from her ovaries; third, combining the healthy eggs with the sperm; fourth, monitoring (culturing) the mixture of eggs and sperm for two to three days so as to ensure fertilization; finally, transferring the embryo into the woman's uterus (implantation), or doing it after five days of culturing, at which stage the embryo is called a blastocyst, making it easier to choose a healthy embryo. The additional embryos may be frozen at the request of the patient for further IVF treatment if the extant one does not succeed (Ebrahim 1989, 94).

Oblivious to its proven clinical risks and moral hazards,¹ the Sunni allow the procedure provided it does not involve a third party (gamete donor) and provided it is not used for fetal gender selection and embryo trading. On the same grounds as sexual purity, there is genealogical exactitude (Hathout 1985; Anees 1989; Ebrahim 1989; Dickens 2009; Sachedina 2009) that adheres to the principle of leaving the determination of the gender of the baby to God: "To God belongs the dominion of heavens and earth. He creates what He wills. He bestows females upon whom He wills and bestows the males upon whom He wills. Or He couples them in males and

females and He leaves barren that He wills. For He is All-Knowledgeable All-Powerful” (Qur’an, 42: 49–50).

The Shi’a, on the contrary, are divided. Some allow it under the framework of temporary marriage (*mut`ah* or *sigheh*). For instance, if the wife is infertile, the husband will marry the egg donor for one day, to receive her egg legitimately. Once the egg has been donated, it is fertilized with the husband’s sperm, outside the womb, and the embryo is planted inside the infertile wife’s uterus (Tremayne 2012, 72). Ali Khamenei and others say that (as *marja`*/source of emulation) *mut`ah* is not required as a legitimizer; however, in the case of egg donation, the donor child will be an adoptive child to the receiving mother but a biological child of the egg donor (Clarke 2009, 123; Tremayne 2012, 72).

Gestational Surrogacy. Gestational surrogacy (surrogate motherhood) is yet another reproductive technique for treating female infertility—due to absence of uterus (which may soon become obsolete due to the invention of the artificial uterus) (Bulletti et al. 2011). The process involves leasing another woman’s uterus (surrogate mother) to bear, beget, and give the baby to the biological parents in lieu of receiving some agreed sum of money as remuneration (Ebrahim 1989, 93; Fadel 2002, 23; Clarke 2009, 193; Sachedina 2009, 45). This procedure of female infertility treatment is declared *ultra vires* by the *Sharia* by the Sunni because it: (1) involves a third party in the process of human procreation; (2) commodifies human reproductive organs; (3) splits motherhood (bifurcation of a mother into gestational and biological ones); and (4) trades in sexuality/indecency (Shaltut 1972, 76; Ebrahim 1989, 93; Al-Qaradawi 1995, 56; Fadel 2002, 23; Arif 2006, 23; Clarke 2009, 192; Sachedina 2009, 44). For Shaltut (1972), this type of insemination is akin to *zina* (adulterous union) because its essence and consequences are the same as adultery, in view of the fact that it is placing the sperm of a man in the womb of a woman between whom there is no bond of marriage, thus the ruling on this type of conduct is one of adultery as prohibited by the *Sharia* (Shaltut 1972, 328).

The human uterus cannot be bartered as it is not amenable for sale, nor can any human baby be the subject of sale as a matter of principle in Islamic law of contract (Al-Zuha`yli 1985, 744–50). For Al-Qaradawi (1985), there is no place for separation between a genetic mother and the gestational one in Islam. In fact, the *walidah* (the one giving birth to the child) is the term for a mother, who cannot be separated from her child: “And we have enjoined on man (to be good) to his parents (his *walidayn*), in travail upon travail did his mother bear him and in years twain was his weaning. . . . (Hear the command): Show gratitude to me and to your parents (your *walidayn*). To Me is your final goal” (Qur’an, 31: 14); “None can be their mothers except those who gave them birth” (Qur’an, 58: 2); and “The mothers (*walidat*) shall give suck to their offspring”

(Qur'an 2: 223). To top it all, it involves a hideous form of exploitation of women when a surrogate mother is not compensated for her psychological and emotional agony, which she suffers from during the whole process. Likewise, it tempts affluent women to resort to such techniques in order to relieve themselves from the pangs of pregnancy and childbirth. This is against the notion of marriage in Islam, that is, childbearing is regarded as a burden instead of a test and a blessing from Allah (s.w.t.) (Shah 1995 109–20).

Conversely, the Shi'a concede it, as their concept of sexuality does not off-limit third-party donation in the process of human reproduction (Clarke 2009, 20). As of 2011, the number of commercial surrogate mothers, usually consisting of relatives in Iran, has been on the rise since the introduction of surrogacy in 2002 (Inhorn and Tremayne 2012, 16; Tremayne 2012, 73). Marginal voices even among the Sunni do not view the practice as objectionable if the surrogate is one of the cowives, merely because it does not involve the appearance of illicit sexual intercourse (Arif 2006, 221–25).

Nevertheless, Muslim jurists have yet to tackle the issue of the artificial uterus. What we can submit is that the use of an artificial womb to nurture further development of a premature baby is not objectionable in Islam, as it comes within the definition of medical treatment (Arif 2006, 224). But to give liberal recognition to this technology on account of other medical reasons is not easily reconciled with some Islamic ethical considerations, such as natural motherhood, kinship, and untainted paternity.

Reproductive Cloning. The creation of a human embryo outside the womb has moved one step further via cloning technology. Among a plethora of technologies involving cloning, reproductive cloning has emerged as another technique for treating infertility. By definition, cloning means “the production of two or more beings that are complete genetic copies of one another” (Clarke 2009, 24). There are two types of cloning. In the first type, cloning by induced identical twinning, whereby, as the fertilized egg splits into two cells, each of them is then induced to make a fresh start and behave as if it were the original fertilized egg. Each half would then grow into a separate fetus, and having come from the same fertilized egg, they both would be carrying exactly identical genetic components. Second, ordinary cloning is achieved by injecting a nucleus from a somatic cell of an adult human being into an egg whose nucleus has been removed. The cell would then grow into a fetus that would be a true genetic copy of the living adult from which the somatic cell nucleus was taken (Musa n.d.).

The acceptable position of Islam on the above procedures, both Sunni and Shi'a speaking in a single voice, is the first type which is similar to the natural splitting of the fertilized egg in the womb, resulting in the

birth of identical twins, provided it is used as one of the ways to treat infertility. However, this will be valid only if all juridical stipulations, which apply to TTB are satisfied. Other than that, it is *ultra vires* of the law of procreation, tampering with God's intention of diversifying the human race and resulting in the consequent breakdown of a familial system as prescribed by the *Sharia* (Al-Qaradaghi 2006; Inhorn and Tremayne 2012, 5).

The second type, on the contrary, is invalid *ab initio* as it cannot be reconciled with the many principles of human reproduction as recognized in Islamic law, including infringement on the individuality and identity of the person, undermining the stability of the social order, and the destruction of the bases of blood relationships and established age-old family ties as the foundation of the family and social order (Kasule n.d.; Al-Aqeel n.d; Musa n.d.). For instance, Kasule (n.d.) is of the view that cloning humans by using this procedure is still part of speculative *fiqh* and, even if it is successful, a cloned human as such will only be a biological living being with no *ruh* (soul) as only God can provide a soul (Kasule n.d.). Agreeing with him is Al-Aqeel (n.d.), who also maintains that cloning for reproductive reason is only permissible if it were the only way for couples with fertility difficulties or a genetic disorder to have healthy genetically related children (Al-Aqeel n.d). As for Musa (n.d.), with the exception of a small minority of "rogue cloners," there is a universal agreement within the scientific community against reproductive cloning of human beings. Policy-wise, the United States and Costa Rica have advocated a full ban on both reproductive and therapeutic cloning in the Policy on UN Cloning Treaty 2003 while the rest of the world opposed the first type but supported the second one (Musa n.d.).

METHODOLOGICAL APPRAISAL

The forgoing discussion reveals that jurists overzealously sanction biotechnological inventions as a remedy for infertility within the parameters of Christianity and Islamic law mainly on two grounds: (1) it helps married couples to fulfill the social vision of marriage, and thus is justified on the grounds of *maslahah* (public good)/social need; and (2) infertility is a kind of disease (a reproductive health problem), and hence reproductive technologies may be justified by reason of medical necessity as established by virtue of biblical narrations in Christianity and Prophetic traditions in Islam. In view of the above, the overwhelming opposition in both religions to some of its religiously objectionable forms, such as donor gametes, posthumous transference of frozen embryos through cryopreservation to the widowed wife, gestational surrogacy, and cloning, may not practically obstruct infertile couples from seeking reproductive assistance, particularly acquisition of the donor's egg, even if theoretically they do not subscribe to

the permissive *fatwa* issued by some Shi'a and modern Christian clergies. Middle Eastern scholars like Clarke and Inhorn reveal that many infertile Sunni Muslims surreptitiously travel to Iran and Lebanon to avail themselves of this technology (Clarke 2009, 124; Inhorn and Gurtin 2012, 26; Inhorn and Tremayne 2012, 11).

From the religious point of view, therefore, this state of affairs needs to be addressed beyond the narrow parameters set by contemporary Muslim legal edicts and Christian clergies. In this process, we propose that a de-ontological (principle-based biomedical ethics) moral framework requires serious reflection on the following ramification of reproductive technology for final ethical decision making:

- (1) Marriage is recommended primarily for preserving human sexual propriety; procreation is its natural outcome if willed by God; if it is absent, a human could not be faulted or be regarded as less than a Christian or a Muslim. Accordingly, it is not mandatory to undertake fertility treatment even at the cost of violating sexual purity, that is, to go through invasive superovulation for the purpose of IVF, or masturbation for artificial insemination, to have children.
- (2) It cannot be justified on the grounds of medical necessity as fertility impairment, which may be caused by pathological conditions which in themselves not diseases. The acute affliction and anguish that result from childlessness should not be classified as ailments (Dickens 2009, 334).
- (3) Artificial insemination, even on a restrictive religiosity view, also raises the ethical dilemma of attaining sexual stimulation to ejaculate if done outside the marriage bed unless it borders necessity where prohibition will be waived; yet it is akin to the prohibition of masturbation in both Christianity and Islam (Sachedina 2009, 110). A more documented problem is the permissive Shi'a view of donor gametes, which not only divides parenthood but requires the donor parent to pass his/her inheritance to the donor child (Inhorn and Gurtin 2012, 11; Inhorn and Tremayne 2012, 11; Tremayne 2012, 74).
- (4) The fate of surplus embryos in IVF in terms of being trafficked or destroyed raises the question of trading human persons. The pro-life view of the embryo, and its destruction or the consequent abortion of some IVF induced pregnancies by reason of fetal selection or mere convenience, are all larger ethical concerns which juridical pronouncements need to methodologically address—even if we go by the cautious position adopted by Catholic traditions and Sunni *fiqh*. The fact that such embryos are created outside the womb does not render them less protectable.

- (5) Surrogate motherhood not only splits motherhood (genetic and gestational), compromising both Christian and Islamic notions of sexual purity, it also commodifies sex, encourages child trafficking, and contravenes the basic right of children to untainted genealogy. Pragmatically, it also fails to bond the child with its genetic mother as testified by genetic mothers in the West (Clarke 2009, 134; Inhorn and Tremayne 2012, 12).
- (6) Reproductively, cloning can be objected on the same grounds as that of IVF and due to all the other moral hazards of fetal sex selection for which it provides another opportunity (Hossain 2012, 19–22; Musa n.d.).

CONCLUSION

In light of the above, it can be concluded that, to address the ethical challenges that reproductive technology poses, one needs to address them in light of two cardinal principles that govern sexuality and human reproduction from both Christian and Islamic perspectives; namely, propriety of sexual acts and the concept of genealogical rectitude. They represent the nonnegotiable laws of marriage and kinship as established by authoritative biblical arguments in Christianity and the unimpeachable evidence of the Qur'an and the Sunna and the expression in the *fiqhi* maxim, "*al-aslu fi al-furuj hurmatun*—the basic law in relation to human genitals is prohibition." If conceptualized and evaluated accordingly, the permissive views which compromise them by conflating ovum gametes with polygamy and a surrogate's womb with seeding ground for human sexual fluid, will not bewilder committed Christians and Muslims. This implies that recourse to permissible means of overcoming fertility should be confined to genuine cases of infertility, thus stamping out the avenues that abuse gametes and surplus embryos, and abortion in the name of gender family planning even if no surrogates or donors are involved. This is necessary not only as a matter of principle but for the psychological well-being of the test tube babies who, in later life, may become suspicious of their lineage purity due to the mushrooming of commercialized donor gametes and embryos in the pervasive reproductive technological landscape. Such religious sensitivities need to be taken into account when formulating a fertility licensing act of any sort, such as that which Mohamad Farouq Abdullah, the former president of the Obstetrical and Gynecological Society of Malaysia, proposes (*Sunday Star*, September 23, 2012).

NOTE

1. The clinical risks involved in the process include the following. First, medical conditions, such as super ovulation, HSS-ovarian hyper stimulation syndrome, and retrieving the oocytes. Second, not all cases of embryo implantation may lead to pregnancy due to some inexplicable

reasons. Third, for the success of a pregnancy, more than one embryo is implanted into the uterus, which may result in multiple births (10%–25% of patients give birth to twins). Finally, the risk of babies born with malformation is 9% compared to 6% for naturally conceived pregnancies (Dickens 2009, 338; *Sunday Star*, October 22, 2012). The ethical evil ensuing from it may be gender planning by choosing the embryo of the desired gender (Anees 1989, 197; Sachedina 2009, 111), trafficking of the surplus embryos or their destruction, neither of which is in accordance with the pro-life view adopted by scholars like Imam Al-Ghazali. Or in the case of multiple pregnancies, the couple may resort to abortion despite its attendant complications, which is *haram* as well (Fadel 2002, 152–53).

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