Introduction

Islam and Assisted Reproductive Technologies

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Introduction: Islam and ARTs

Since the birth in 1978 of England's Louise Brown, the world's first "test-tube baby," assisted reproductive technologies (ARTs) designed to create human life have proliferated and spread around the globe. Over the past thirty-five years, the world has seen the rapid expansion of a whole host of reproductive technologies, including:

- *in vitro fertilization* (IVF) to overcome female infertility, especially blocked fallopian tubes;
- *intracytoplasmic sperm injection* (ICSI) to overcome male infertility;
- *third-party donation* (of eggs, sperm, embryos and uteruses, as in *surrogacy*) to overcome absolute sterility;
- *multifetal pregnancy reduction* to selectively abort multiple-gestation IVF pregnancies;
- *ooplasm transfer* (OT), of cytoplasm from a younger to an older woman's oocytes, to improve egg quality in perimenopausal women;
- *cryopreservation* (freezing) and storage of unused sperm, embryos, oocytes, and now ovarian tissue;

- *preimplantation genetic diagnosis* (PGD) to identify genetic defects in embryos created through IVF or ICSI before their transfer into the uterus; controversial uses of PGD include sex selection and the creation of "savior siblings" for children with life-threatening illnesses;
- *human embryonic stem cell* (hESC) research on unused embryos for the purposes of therapeutic intervention; and
- *human cloning,* or the possibility for asexual, autonomous reproduction, which has already occurred in other mammals (e.g., Dolly the sheep).

With virtually all of these technologies, sperm and eggs are retrieved from bodies, embryos are returned to bodies, and sometimes these reproductive materials are donated to other bodies or are used and discarded for the purposes of medical research (Franklin 1996; Kahn 2000; Kirkman 2003; Konrad 1998). Numerous infertility scholars have noted in recent years that ARTs exact a significant toll on the body, especially for women as both recipients of ARTs and as oocyte donors, but also for men in the era of ICSI (Inhorn 2003, 2012; Kahn 2000; Lorber 1989; Storrow 2005; van der Ploeg 1995). Moreover, despite the existence of national and international statements opposing the commercialization of ART services, significant commodification has occurred, as gametes and embryos are increasingly sold on the open market through Internet websites and college newspapers (Blank 1998; Braverman 2001; Carmeli and Birenbaum-Carmeli 2000; Pollock 2003; Shanley 2002; Thompson 2005). Indeed, Ruth Deech, former chairperson of the UK Human Fertilization and Embryology Authority, questions the human rights implications of the documented massive global transfer within the European Union (EU) of gametes and embryos "passed from country to country in search of one that permits the desired treatment or allows the chosen gametes to be used" (Deech 2003: 425).

The Muslim countries are different from both the EU nations and the United States in terms of their enthusiastic embrace of ARTs *without* this commodification and transfer of human gametes. Since 1986, a Middle Eastern ART industry has been flourishing, with hundreds of mostly private IVF clinics in countries ranging from the small, wealthy Arab Gulf states to the larger but less prosperous nations of North Africa (Inhorn 2003; Serour 1996, 2008; Serour and Dickens 2001). This fluorescence of a Middle Eastern ART industry is not surprising: Islam encourages the use of science and medicine as

solutions to human suffering and is a religion that can be described as "pronatalist," encouraging the growth of an Islamic "multitude" (Brockopp 2003; Brockopp and Eich 2008; Inhorn 1994; Musallam 1986). Hence, biotechnologies to assist in the conception of human life have implicit appeal in the Muslim world.

However, as noted by Islamic studies scholar Ebrahim Moosa (2003: 23),

> In terms of ethics, Muslim authorities consider the transmission of reproductive material between persons who are not legally married to be a major violation of Islamic law. This sensitivity stems from the fact that Islamic law has a strict taboo on sexual relations outside wedlock (*zina*). The taboo is designed to protect paternity (i.e., family), which is designated as one of the five goals of Islamic law, the others being the protection of religion, life, property, and reason.

Accordingly, at the ninth Islamic law and medicine conference, held under the auspices of the Kuwait-based Islamic Organization for Medical Sciences (IOMS) in Casablanca, Morocco, in 1997, a landmark five-point declaration included recommendations to prevent human cloning and to prohibit all situations in which a third party invades a marital relationship through donation of reproductive material (Moosa 2003). Such a ban on third-party gamete donation is effectively in place among the Sunni branch of Islam, which represents approximately 80–90 percent of the world's more than 1.5 billion Muslims (see Inhorn et al., this volume).

The situation has changed quite dramatically, however, within the minority Shia branch of Islam. In 1999, the Supreme Leader of the Islamic Republic of Iran, Ayatollah Ali Hussein Khamene'i—the hand-picked successor to Iran's Ayatollah Khomeini—issued a fatwa, or nonbinding but authoritative religious proclamation, allowing donor technologies to be used (Inhorn 2005). As a result, since the new millennium, donor gametes are now being purchased by infertile couples in IVF clinics in Shia-majority Iran and Lebanon, currently the only two countries in the Muslim world to allow this practice.

Understanding this rapidly evolving moral-religious climate surrounding ARTs in the Muslim world is imperative for scholars, policymakers, and the public. To do so requires examining the Islamic scriptures themselves, the contemporary fatwas that have been issued on these ARTs, as well as the subsequent bioethical and legal rulings that are being used to enforce or, in some cases, to override these fatwas. For example, in a rather surprising turn of events, Iran's parliament decided against sperm donation in 2003, equat-

ing it with polyandry (i.e., marriage of one woman to more than one man, which is illegal in Islam). Thus, the Iranian parliament effectively overturned the Khamene'i fatwa. However, in an even more unprecedented turn of events, gestational surrogacy arrangements have been permitted in Iran, with several cases highlighted in the Iranian media (see Garmaroudi Naef, this volume; Tremayne 2005, 2008, 2009). Furthermore, Iran is at the forefront of a nascent Middle Eastern stem cell industry, highlighting a moral attitude toward abortion that is very different from that found currently in the United States (Saniei, this volume).

In the future, human reproductive cloning may also have great potential in the Muslim world, as it bypasses sexual reproduction and, hence, concerns about *zina* (or reproduction outside of wedlock). Indeed, at least one popular Lebanese Shia cleric, as well as Ayatollah Khamene'i in Iran, have condoned the idea of human cloning (Clarke 2009; Clarke and Inhorn 2011). Nonetheless, other Muslim religious leaders continue to debate the pros and cons of reproductive cloning, and no authorities, either Sunni or Shia, have come forward to openly encourage cloning for infertile Muslim couples. However, their opinions, particularly in the Shia world, may evolve over time, with potentially profound implications for infertile Muslim couples.

These new-millennial technological developments in the Muslim Middle East clearly require empirical investigation. ARTs and Muslims' attitudes toward them provide a compelling nexus for the study of what might be called "Islamic technoscience in practice." Little is currently known about Islam and technoscience, if technoscience is defined broadly as the interconnectedness between science and technology through "epistemological, institutional, and cultural discursive practices" (Lotfalian 2004: 1). As noted in *Islam, Technoscientific Identities, and the Culture of Curiosity,* there is a glaring lacuna in the literature on science and technology in cross-cultural perspective, particularly from the Islamic world, where, according to Lotfalian (2004: 6), there are "really only two strains of relevant work"—one on the Islamic medieval sciences and the other on philosophical arguments for civilizational differences between Islamic and Western science and technology (the so-called clash of civilizations thesis). This dearth of relevant scholarship clearly applies to the cross-cultural study of ARTs. For example, in the seminal volume on *Third Party Assisted Conception Across Cultures: Social, Legal and Ethical Perspectives* (Blyth and Landau 2004), not a single Muslim society is represented among the thirteen country case studies.

Clearly, the time has come to examine the globalization of ARTs to diverse Islamic contexts, particularly given the rapid technological development and globalization of these biotechnologies. Currently, there are about a dozen researchers—nearly all of them included in this volume—who are engaging in empirical studies of ARTs in the Islamic world. Their studies point to interesting variations in both the Islamic jurisprudence and the cultural responses to ARTs, particularly between the two major branches of Islam, but also between Muslim countries, between secular and religious forces within countries, and among cosectarians living in different settings (for example, Shia Muslims in Iran versus Lebanon).

Islamic Legal Thought and ARTs: Marriage, Morality, and Clinical Conundrums

Islamic religious leaders have played a prominent role in the legitimization of ARTs for overcoming infertility (Clarke 2008, 2009; Inhorn 2003, 2005, 2006a; Serour 1996, 2008; Tremayne 2005, 2006, 2009). Since the emergence of ARTs in the 1980s, leading Muslim scholars have focused on theorizing the impact and ramifications of ARTs on reproduction, family, and kinship, which are considered foundational, sacrosanct institutions and the guiding principle of human social organization. These scholars returned to early Islamic texts, in order to examine and better understand the basis upon which kinship and family relations are formed. Initially, both Sunni and Shia scholars shared the view that the treatment of infertility and use of ARTs should take place only between a married couple, and that no third party should be involved in this process. The rationale behind this argument was the protection of the purity of lineage (*nasab*), which the intrusion of a third party would destroy and which would lead to biological and social confusion (Inhorn 2003; Clarke 2009). The effects on kinship and family relations, and the consequent social disorder, were considered profound.

However, religious leaders' interpretations of the Islamic texts have not been monolithic. Differences of opinion have emerged among the four Sunni legal schools (*madhhab*s), and on basic principles, such as what constitutes lineage, or who can be considered the legitimate parent or child in a family. Likewise, Shia leaders have not been unanimous in their views and remain divided in their interpretations and verdicts on the extent to which the ARTs can be applied. Some Shia scholars remain closer in their deliberations to

the conclusions of the Sunni *madhhab*s, for example, than to Shia religious leaders such as Ayatollah Khamene'i in Iran. Furthermore, differences exist among the Shia clergy in Iran, where 90 percent of the total population of 70 million is Shia.

According to some Shia clerics, third-party donation is legitimate and does not breach any religious rules. However, the majority of Sunni scholars, IVF practitioners, and patients follow the original fatwas declaring third-party donation to be religiously forbidden. As a result, a gap has developed between the main Sunni and Shia interpretations of lineage, kinship, and family relations. Whereas today, the majority of Shia resort to most forms of ARTs, including third-party donation and surrogacy, a religious ban on third-party donation exists for Sunni Muslims. In short, the permission of third-party donation for Shia Muslims versus the prohibition for Sunni Muslims has divided the Muslim world into two opposite factions—the major dichotomy highlighted in this volume.

In Section I, entitled "Islamic Legal Thought and ARTs: Marriage, Morality, and Clinical Conundrums," the authors examine and highlight the differences in approach, interpretation, and application between the two major branches of Sunni and Shia Islam, as well as within each branch. Contributors to this section examine the fundamental principles in Islam that concern procreation and marriage, and ask how reproduction has been understood and interpreted in both historical and contemporary contexts by religious leaders. The chapters in this section focus on the intricate legal discussions surrounding the establishment of children's lineage (*nasab*) from ancient to contemporary times, and, ultimately, what this means for the children born from ARTs. The authors compare the different legal reasoning used by Sunni and Shia religious authorities, showing how different understandings of legitimate marriage, procreation, sexuality, adultery, paternity, lineage, and the "need" for children, both on the individual level and on the level of social reproduction, are understood. All of the contributors to the first section clearly challenge the idea that Islam is a rigid religion, which has no built-in mechanisms for adjusting to modernity. Indeed, these authors show that Muslim authorities are engaged in comprehensive ethical and legal debates and arguments about the importance of reproduction, the "need" and "right" to have children, and the rights of children themselves. These debates have involved the classical texts, as well as consideration of the contemporary plight of infertile couples and the ARTs available to them. Through the use of these ARTs, Islam, in general, has provided solutions to cope with reproductive suffering.

As Thomas Eich argues in chapter 1, "Constructing Kinship in Sunni Islamic Legal Texts," the reason for the rejection by contemporary Sunni scholars of heterologous insemination (by a third-party donor) is that only marriage can contribute the legal framework for licit procreation. This link would be disrupted through sperm or egg donation, which would carry elements of illegal fornication (*zina*). Children resulting from *zina* do not have legally relevant genealogical links to their biological fathers. Against this background of contemporary religious legal debate, Eich analyzes Islamic legal discussions between the four Sunni legal schools within their historical context. He illustrates how the definition of "marriage" has differed between these four schools, and how the importance of sexual intercourse for defining marriage has varied greatly. He concludes that, based on such differences, biological considerations have played different roles in defining what would actually constitute a child born out of wedlock.

In chapter 2, "Islamic Jurisprudence (*Fiqh*) and Assisted Reproduction: Establishing Limits to Avoid Social Disorders," Sandra Houot expands the discussion of ARTs to examine the debates surrounding a number of modern reproductive technologies (e.g., contraception, abortion). Muslim scholars have used concepts from traditional *fiqh*, such as *darura* (necessity) and *maslaha* (common or public interest), as tools to justify the necessity of these fertility interventions. Houot argues that the notion of *maslaha* is one of the main tools used in ethical debates in Islam. It has also been used extensively in contemporary debates by Islamic jurists to allow the application of ARTs. Based on her analysis of the fundamental symbolic values of filiation (*nasab*) and parenthood, Houot argues that assisted reproduction fits well in the Islamic value system, which has adapted to modern practices.

In addition to *maslaha,* Farouk Mahmoud shows in chapter 3, "Controversies in Islamic Evaluation of Assisted Reproductive Technologies," that other conceptual tools such as *istihsan*—seeking an equitable and just solution—are also used as a way to accommodate modern biotechnologies for the greater good of the public. His chapter reviews a large number of ARTs and related reproductive practices, examining both their accommodation by Islamic jurists, as well as the controversies that have erupted as a result of the Sunni-Shia dichotomy described above. As both an ART scholar and practitioner, Mahmoud focuses on the clinical dilemmas posed by the Islamic debates. For example, is it permitted to discard excess embryos? Should siblings be allowed to donate gametes, embryos, or

uteruses as surrogates? Should PGD be used for sex selection? And, in the future, will it be allowable to transplant ovaries and uteruses? Mahmoud surveys the opinions of both Shia and Sunni scholars in his chapter, and also discusses practical dilemmas for IVF physicians treating Muslim patients. His chapter is especially useful in this regard.

In general, Section I of this book will appeal most to those interested in the intricacies of Islamic legal thought and jurisprudence. It is less anthropological than theological; it looks to Islamic history and to differences in Sunni and Shia legal reasoning to discern contemporary normative approaches to ARTs. In this regard, it provides a legal background for the complex social realities portrayed in Sections II and III of this volume. It also introduces important terms in Arabic and Persian (used in Iran), which will be emphasized throughout the volume and which are defined in the "Glossary of Arabic, Persian, and Turkish Terms" at the beginning of this volume.

From Sperm Donation to Stem Cells: The Iranian ART Revolution

Section II of this volume focuses on the special case of Iran, which, since the sixteenth century, has been the global epicenter of Shia Islam. To understand the "Iranian ART revolution" (Abbasi-Shavazi et al. 2008), it is necessary to examine three fundamental aspects of Shia Islam: (1) the Shia concept of the Imamate, in which political authority and religious excellence are seen as inherited through the line of descendants from the Prophet Muhammad's daughter and her husband 'Ali, the Prophet's cousin; (2) the nineteenth-century development of the concept of "sources of emulation" (*marja' al-taqlid*), or Shia religious scholars who are to be followed for their learnedness; and (3) the Shia emphasis on independent reasoning (*ijtihad*) to find new answers to arising problems (Clarke 2006b).

Unlike their Sunni counterparts, Shia scholars remain reluctant to engage in formal collective *ijtihad* deliberations on issues of global importance. Instead, they rely on individualistic independent reasoning, which has led to a diversity of opinions among Shia *marja'*s, who are not necessarily in agreement with one other, and who, in fact, take opposing views on the interpretation of the Qur'an. Historically, such developments have led to the senior *marja'*s forming their own groups of followers. In addition, the great scope of opinions has led to considerable "flexibility" for the Shia *marja'*s in al-

lowing the introduction of scientific and other innovations. It is the individualistic practice of *ijtihad* that has paved the way for the Shia to engage dynamically with most forms of biotechnology. However, it has also led to the Sunni-Shia dichotomy described above.

Initially, both Sunni and Shia religious authorities restricted the use of ARTs to married couples, thereby excluding the use of a wide range of possibilities that are available to overcome infertility (see Mahmoud and Inhorn et al., this volume). However, by the beginning of the new millennium, the Iranian Shia had found solutions within the religious rules that allowed the use of all forms of ARTs, including most importantly third-party donation. Lebanese Shia communities soon followed suit, albeit in moderation (see Inhorn et al., this volume; Clarke 2009). To be able to apply third-party donation, the Shia in Iran extended the definition of marriage to include "temporary marriage," a form of marriage that is practiced by Shia only (Haeri 1989; Tremayne 2009). They did so by allowing a donor to become a legitimate, although temporary, spouse, thereby donating an egg or sperm within the bounds of legal marriage (Tremayne, this volume; Inhorn 2003; Clarke 2006b; Tremayne 2006, 2009). Several Iranian religious leaders engaged in further debates on other forms of third-party donation, and, as a result, embryo donation was legally approved, followed by surrogacy on the same grounds (Garmaroudi Naef, this volume). Such approval has most recently been extended to allow stem cell research in Iran (Saniei, this volume), and has been applied for other forms of biotechnology as well, including organ donation and transgender surgery. Indeed, the Shia of Iran have gone much farther in embracing all forms of third-party donation than most Western Christian countries, as demonstrated by chapter 8 in this volume.

To understand the reasons for and the speed by which such "liberal" (Clarke 2009) decisions have been made and accepted into practice in Iran, it is essential to realize that decisions are ultimately made by the legislative councils—themselves part of Iran's theocratic regime, made up of political as well as the religious leaders. These councils' decisions become "official," but those who do not wish to use them can turn to their own *marja'* without the worry of breaking any rules. For example, as shown in both chapters 6 and 7, the approval of third-party donation was the result of many years of intensive debate among several *marja'*s. Finally, the endorsement of the supreme religious leader, Ayatollah Ali Hussein Khamene'i, gave third-party donation "official" legitimacy in 1999. However, approval or disapproval by Ayatollah Khamene'i does not mean

that all Shia leaders are in agreement with him. Quite the contrary! While the Sunni seem to speak with one voice against third-party donation (see Inhorn et al., this volume), no definitive, universal conclusion has been reached among the Shia jurisprudents to justify the use of third-party reproductive assistance. Indeed, the Shia religious leaders are deeply divided among themselves on this and other divine matters. Due to the fundamental structure of Shia jurisprudence, there may never be a consensus among the Shia about whether or not third-party donation should be permitted.

Herein lies the key to the flexibility of Shia practice: it allows supporters to adhere to the views of one or another *marja'* as they see fit, allowing for their own metaphysical and cosmological understandings of what constitutes procreation and proper kinship relations, regardless of the "official" version. Through such liberties offered by the diversity of opinions among the Shia leaders, the users of third-party donation (i.e., doctors and patients) have been able to exercise a great degree of agency and control over actual clinical practices, including who can serve as a donor, thereby reinforcing independent understandings of what constitutes kinship and relatedness (Garmaroudi Naef, this volume; Tremayne 2009).

Section II of this volume, "From Sperm Donation to Stem Cells: The Iranian ART Revolution," examines the legitimization of third-party donation in Iran from legal, religious, and ethical aspects, and the impact of the "flexible practice" of third-party reproductive assistance on kinship, family, and gender relations. In deciding on the legitimacy of various ARTs, religious leaders do not necessarily act alone; instead, they engage with other specialists in Islamic law, medicine, psychology, and various disciplines to explore the legal and bioethical ramifications of these biotechnologies on society, the family, marriage, and the children born as a result of ARTs.

In chapter 4, "More than Fatwas: Ethical Decision Making in Iranian Fertility Clinics," Robert Tappan raises serious questions about the bioethics of Shia "flexibility" in clinical settings in Iran. He argues that while Islamic law, presented as fatwas, or legal opinions of Islamic scholars, plays a key role in Islamic bioethics, the assertion that "Islamic bioethics" is synonymous with fatwas does not bear out in Iranian fertility clinics. There, clinicians and ethical committees consider a wide range of sources, not limited to fatwas, and including civil law, Western bioethical notions, and *ijtihad.* These efforts, in Tappan's view, are part of the wider articulation of Islamic bioethics that includes, or goes beyond, mere reference to Islamic law. Yet, based on his reading of the Islamic legal scholar, Abdulaziz

Sachedina, Tappan argues that Iranian clinicians and jurists have both failed to unfold deeper, more foundational grounds for Islamic bioethics, and for the application of important theological, ethical, and legal principles. For example, the rights of the child born from third-party donation must be considered, but child rights and rights of the unborn are rarely invoked in clinical discussions, based on Tappan's ethnographic research in Iranian ART clinics.

The justification for allowing the use of third-party donation in Iran has been to ensure the stability and happiness of the family through the birth of children, thereby reducing the suffering among infertile couples (see Garmaroudi Naef, this volume). Indeed, the focus throughout these Shia jurisprudential debates has remained on the family, which is considered the foundation of society. Nonetheless, the dynamic array of ART donor practices allowed in Iran has opened the way for myriad bioethical, legal, and personal dilemmas, which can turn into a minefield. In chapter 5, "The 'Down Side' of Gamete Donation: Challenging 'Happy Family' Rhetoric in Iran," Soraya Tremayne shows how three parties—lawmakers, physicians, and patients, each with their own agendas—may not always be equipped to deal with the complex ethical and interpersonal problems that are generated by ARTs. In fact, religious texts and religious authorities cannot always solve the contemporary dilemmas arising from third-party donation. In cases of male infertility in particular, Iranian men may "secretly" resort to donor sperm rather than be seen as infertile. By doing so, they take an opportunity provided by ARTs to reinforce the values of procreation and doing one's duty to the social group. However, in her poignant chapter based on refugee-asylum cases in the United Kingdom, Tremayne shows how Iranian women who have been coaxed or coerced into accepting third-party gamete donation (both sperm and egg) may suffer horrible consequences, including emotional and physical abuse, abandonment, and divorce. Their donor children, too, may suffer in a multitude of ways, including being used as "pawns" by bitter husbands who regret their initial decisions to go forward with gamete donation. In short, despite the "happy family" rhetoric used to rationalize third-party donation by religious leaders and clinicians in Iran, there is a "down side"—and a very dark one indeed—as shown in the case studies in this chapter.

In chapter 6, "Gestational Surrogacy in Iran: Uterine Kinship in Shia Thought and Practice," Shirin Garmaroudi Naef analyzes the legitimizations of yet another new ART practice in Iran. The case of surrogacy provides the perfect example of the malleability of reli-

gious arguments through *ijtihad*. In explaining the reasoning behind the approval of surrogacy by Iranian religious authorities—not only of surrogacy, but of surrogacy between siblings of both sexes—Garmaroudi Naef shows that Shia scholars have built their argument around the notion of physical contact. Namely, surrogacy does not entail physical contact (i.e., sex) between the two parties, and therefore no illicit act takes place in reproduction through such procedures. Garmaroudi Naef confirms that the basis for the endorsement of surrogacy was the interpretation by some senior religious scholars of what constitutes kinship. They judged that surrogacy between siblings does not break any rules of adultery or incest. But, as she points out, there are a considerable number of equally senior Shia authorities who have produced a counterargument for such practices, and some have even rejected them vehemently. In the midst of these surrogacy debates, Garmaroudi Naef focuses on the way that Iranian surrogates themselves—some of whom are siblings of the infertile individual they are helping—attempt to transform surrogacy from a controversial issue into a normative way of overcoming infertility. Garmaroudi Naef's rich ethnographic data suggest that earlier anthropological theories of Islam and "blood" kinship need to take into account notions of "uterine kinship" in Shia thought and practice.

The final chapter of this section, chapter 7 on "Human Embryonic Stem Cell Research in Iran: The Significance of the Islamic Context," by Mansooreh Saniei, explores the local moral and ethical arguments upon which stem cell research has been endorsed in Iran. The Iranian religious rulers, in their mutual role as political leaders, have eagerly engaged in debates with secular experts on matters regarding science and technology, and are responsible for, inter alia, social planning and public health. Such a position has led to the understanding and legitimizing of many new health technologies, which are otherwise viewed as unacceptable according to traditional Islamic values. As is clear from Saniei's chapter, the endorsement of stem cell research has not been taken lightly or in isolation, but comes from a genuine concern for health and overcoming complex medical problems. Having been faced with various health crises ranging from overpopulation to a postwar generation of disabled men, Iranian religious leaders have resorted to the traditional Islamic concepts of *maslaha* and *istihsan* to legitimize stem cell research. Saniei argues that through endorsing stem cell research, senior Iranian religious leaders promise a return of the "golden age," in which Iran will be at the forefront of scientific innovations. In-

deed, Shia Iran has taken the lead in stem cell research among the Middle Eastern Muslim countries, although, as the chapter shows, other Sunni Muslim countries may eventually follow.

While there is no denying that humanitarian, moral, and ethical motivations are driving forces behind the endorsements and legitimization of stem cell technologies, the political reasons cannot be overlooked. For example, Iran won the United Nations Population Award in 1998 by bringing down its population rates in a dramatic fashion. This occurred because religious leaders had come to realize that the country was headed toward a population explosion. They saw overpopulation as a threat to the ideology upon which they had come to power—namely, the promise to help the poor and to provide basic health and educational services. Thus, they took effective action to reduce population growth (Hoodfar 1995; Tremayne 2004). As with population, Iran's religious rulers continue to argue that a Muslim country should not be forced to rely on the West for its health technologies, including therapeutic stem cells.

Islamic Biopolitics and the "Modern" Nation-State: Comparative Case Studies of ART

Lest readers be left with the impression that ARTs are practiced only in Shia Iran, it is important to note that the Sunni countries—namely, Egypt, Jordan, and Saudi Arabia—were the first to introduce IVF to the Muslim world in 1986 and that Turkey, a Sunni-majority country, has the highest number of clinics in the region (>100). In fact, Sunni Islamic countries can be characterized as "ART-friendly"; an ART industry is thriving across the Middle East, and most South Asian and Southeast Asian Muslim countries can also boast of a flourishing ART sector. (Muslim Africa is the exception to this rule.)

However, it is important to reiterate that third-party donation is effectively banned across the Sunni Muslim world. With the exception of Iran and Lebanon (which has followed the Iranian lead), no other single Muslim-majority country allows the practice of third-party donation, either by law or fatwa decree. The strength of this religious ban is impressive, considering that it has "held" since 1980, when the first pro-IVF, antidonation fatwa was issued at Al Azhar University in Cairo, Egypt. Most Sunni IVF practitioners and their patients continue to support the third-party ban for a variety of religious and moral reasons. Those who do not must cross international borders as "reproductive tourists," usually in secrecy. However,

"cracks" in the ban are beginning to unfold in places like Turkey and Lebanon. This suggests that Islamic biopolitics can change over time, especially in "secular" and "multisectarian" societies within the Islamic world. In every society, politics, religion, and culture intermingle to define both the possibilities for, and the "arenas of constraint" on, ART practice (Inhorn 2003).

Section III, entitled "Islamic Biopolitics and the 'Modern' Nation-State: Comparative Case Studies of ART," focuses on the wider implications of ARTs on culture, politics, and religion in a variety of Middle Eastern and Mediterranean countries where secular and religious debates on the application of ARTs are being carried out. This section highlights the role of the state (or lack thereof) in regulating ARTs, and how states and political parties may use ARTs to highlight their own "modernity." It also includes a comparative perspective on ARTs by juxtaposing the Catholic Church and Sunni Islam; various Muslim and Christian sects living (and using ARTs) within the same country; and secular and religious attitudes toward ARTs within Turkey, a supposedly "secular but Muslim" Middle Eastern country with a booming ART industry.

In chapter 8, "Third-Party Reproductive Assistance around the Mediterranean: Comparing Sunni Egypt, Catholic Italy, and Multisectarian Lebanon," Marcia C. Inhorn, Pasquale Patrizio, and Gamal I. Serour undertake an unlikely comparison of three Mediterranean societies, one Sunni Muslim, one Roman Catholic Christian, and one multisectarian (with eighteen officially recognized religious sects). The authors begin in the Sunni Muslim world, providing comprehensive coverage of Egypt and the third-party donation ban that has remained in full force in all Sunni-dominant countries. Against such a backdrop, the chapter moves to Italy, which used to be on the forefront of third-party donation practices, but has joined the Sunni world in banning donor technologies as the result of a 2004 Vatican-inspired law. Perhaps unexpectedly, multisectarian Lebanon—partly Christian, mostly Muslim, with a large Shia population—has ended up being the most "permissive" of the three nations with regard to third-party donation. Following the Iranian lead, Shia IVF practitioners introduced donor technologies, which were also welcomed by the Christian IVF physicians in the country. Although most Sunni IVF doctors and patients remain firmly against such practices, Lebanon has become a hub for "reproductive tourism," primarily of Sunni Muslims from other Middle Eastern countries where donor gametes and technologies are unavailable. This chapter provides the perfect example of a situation whereby the agency of users—both

physicians and patients—comes to shape the practice of ARTs amid considerable religious diversity. In this chapter, the similarities between Sunni Egypt and Catholic Italy are shown to be closer than between the Sunni and Shia Muslim populations within two Middle Eastern countries. The authors conclude that the unique multiconfessional nature of Lebanese society has led to a lack of religious and political consensus, and hence, to a degree of permissiveness toward all forms of reproductive assistance not found in more religiously unified countries of the Mediterranean.

Morgan Clarke's chapter 9, "Islamic Bioethics and Religious Politics in Lebanon: On Hizbullah and ARTs," zeroes in on Lebanon, particularly the Iranian-backed Hizbullah political party, whose clerical elites favor a "contemporary" vision of Islamic law, which makes room for ARTs and third-party donation. Clarke interweaves biomedical with religious and political discourses, suggesting that a focus on religious opinion alone is not sufficient for an accurate understanding of what an "Islamic bioethics" might be—either as an independent phenomenon in its own right, or as the object of Western academic fascination. As Clarke shows for Lebanon's Hizbullah, which follows the Iranian lead, religious-legal positions are situated within wider intellectual and political projects; thus, the possibility of isolating bioethics as a distinct institution and practice implies a particular assembly of relations of authority, the topography of which, in the Middle East, is more varied than is sometimes implied. Worldwide, medical knowledge has been growing as one of the main sources of authoritative knowledge. Clarke explores how senior Hizbullah leaders in Lebanon, in their anxiety to demonstrate their "modernity" (see also Deeb 2006), are giving recognition to biomedical practices such as third-party donation, partly as a demonstration of their own authority and wisdom.

The inextricable links between reproduction and state policy are showcased in the final chapter, chapter 10 by Zeynep Gürtin on "Assisted Reproduction in Secular Turkey: Regulation, Rhetoric, and the Role of Religion." In Turkey, a Sunni Muslim country that prides itself on being a secular state, ARTs are flourishing. Gürtin's discussion revolves around the practice of ARTs in Turkey, which receives support from both the secular state and religious institutions and which is growing dramatically among married Turkish couples. The extensive coverage by the media and other forms of public endorsement confirm both the popularity and the acceptance of ARTs, giving them an "uncontroversial" character. Despite the idealized synchrony between cultural sensibilities, civic law, and re-

ligious prescriptions, Gürtin opens up yet another hitherto unexplored aspect of the ARTs: namely, that the secular Turkish state is seemingly anxious to draw the line between religion and culture in the legitimization of ARTs, and to accord more weight to the cultural aspects of such approval. Gürtin points out that although it may not be practically possible to disaggregate "culture" from "religion," within the secular politics of Turkey the latter is unacceptable as a causal explanation for state regulation of donor technologies. However, the Turkish state *does* forbid third-party donation, as in all other Sunni countries, thereby forcing Turkish couples to travel to neighboring Cyprus for donor gametes. Indeed, in March 2010, Turkey became the first country in the world to enact a law banning cross-border reproductive travel of its citizens seeking third-party reproductive assistance (Gürtin 2011). Although this law is more symbolic than enforceable, it demonstrates how these discourses about Islam, secularism, and culture may be used and understood rather differently by internal and external commentators, but pertain to sensitive questions about Turkey's identity and international affiliation as a "democratic," "secular," "democratizing," but also "Muslim" society.

Conclusion: ARTs in Action—The Emerging Issues

As shown by all of the contributors to this volume, Islam considers procreation to be one of the most important pillars of society; thus, the duty of each Muslim is to reproduce and ensure the perpetuity of his or her social group. Given Islam's pronatalism and the many biotechnological innovations to overcome infertility, Muslim religious leaders willingly engage in debates to make ARTs possible for infertile couples without breaching any religious rules. In doing so, they resort to some of the key conceptual tools available to Islamic jurisprudents, such as "necessity," "public interest," and "seeking a just and equitable solution." As such, they help to make it possible for infertile Muslim couples to benefit from ARTs.

This volume also highlights the ways in which infertile Muslims are engaging with ARTs, and the difficult reproductive choices they make. In most Muslim countries, deeply rooted religious beliefs remain an important—perhaps *the* most important—determining factor in the reproductive decisions of infertile couples. Most couples resort to ARTs only if they can fit these technologies into cultural and religious understandings of reproduction. Faced with the choice

of having a baby they desperately want or breaking what they believe to be the religious rules, most Muslim couples will give up on treatment and go without a child (Inhorn 2003, 2006).

Yet, the ART "revolution" in Iran has opened up new "local moral worlds" hitherto unseen (Kleinman 1995). Garmaroudi Naef's ethnographic study of surrogacy in Iran points to the fact that whenever possible, infertile couples resort to their siblings or other close relatives for surrogacy, throwing into question notions of consanguinity and incest. Tremayne's chapter on the aftermath of third-party donation in Iran—where it has been practiced for more than ten years, with hundreds if not thousands of donor children born—suggests that an assessment of the long-term impact on families is in order. Her findings raise several questions regarding the unforeseen consequences of the use of donor technologies. Although third-party donation has been embraced in Iran through Islamic ethical debates, Islam may be inadequate in solving the complex human dilemmas emerging from donation, which the religious rulings and interpretations could not have predicted.

One of the most overlooked aspects of ART ethics involves the rights of the child, as discussed at length by Robert Tappan in this volume. The Iranian asylum cases discussed in Tremayne's chapter reveal that donor children may not be as cherished as anticipated, and may become pawns in the hands of parents, especially fathers. The study reveals the differences in outcome for cases of third-party donation, depending upon whether the infertile party is the wife or the husband. The chilling findings show a broadening gap in gender relations, an increase in violence from infertile men towards their fertile wives, the frequent cases of rejection of donor children, especially those resulting from sperm donation, and the overall unflinching attitude of society toward women and children, who are blamed for deviating from social norms. The fact that one of the major ART research institutes in Iran has recorded many such cases and hopes to initiate a study on domestic violence—with the help of both editors of this volume—bespeaks the importance of this issue. The future of donor children in the Muslim world is an uncertain one, which is why, even in "permissive" Lebanon, most men reject the idea altogether, stating that a donor child "won't be my son" (Inhorn 2006b, 2012).

Finally, an interesting observation emerges from this collection. The general understanding of contemporary religious authorities and the Muslim public is that lineage (*nasab*) means biological belonging of the offspring to their parents. Recent ethnographic research

confirms this in a variety of Muslim contexts (Clarke 2009; Inhorn 2003, 2006a; Tremayne 2009). The Sunni religious authorities have banned third-party donation on this basis—namely, that it will confuse lineage. However, as Eich demonstrates in this volume, in establishing lineage, the four different *madhhab*s in Sunni Islam have traditionally defined lineage in a number of ways, through elaborate arguments and different bases. For example, the Hanafis link lineage to the existence of a marriage contract and not to sexual intercourse between the spouses. Therefore, any child born six months after marriage is considered to belong to the husband. Eich further examines whether classical Islamic texts have considered lineage as being "biological" or "social." Eich's description of what constitutes lineage in Sunni Islam links strikingly well with the situation of contemporary Shia men in Tremayne's study. Namely, to maintain their rightful position as fathers and to reproduce their social group, some Iranian Shia men are prepared to forgo their firm belief in "biological" descent and resort to "social" fatherhood of a donor child, as long as this can be done in secrecy.

In some respects, then, the purported Sunni-Shia dichotomy, which we have laid out in this volume, may be overstated. We can conclude that the Sunni and the Shia share one belief: namely, that human reproduction and the need to preserve one's social group are paramount. When it comes to social reproduction—or the belief that having children and perpetuating kinship structures into the future is important—there is little difference between the Sunni and the Shia, even though they are now achieving biological reproduction through different biotechnological means. In both cases, they are being "assisted" by their religious leaders, whose role in the introduction, permission, innovation, and expansion of ARTs in the Islamic world cannot be overstated. Indeed, when it comes to ARTs, Islam has proved to be a facilitating factor, especially when compared to certain major forms of Christianity such as Catholicism. The role of Islam in promoting most forms of ART defies East-West stereotypes, and suggests that additional study of Islam and technoscience is imperative in the new millennium.

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