ESSAY

REGULATING REPRODUCTIVE TECHNOLOGIES:
TIMING, UNCERTAINTY, AND DONOR ANONYMITY

GAIA BERNSTEIN∗

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Two global trends have emerged in the regulation of Artificial Reproductive Technology (“ART”): the adoption of a comprehensive regime to regulate the practice of ART and the prohibition on gamete donor anonymity. This Essay uses the publication of Naomi Cahn’s book, Test Tube Families, which advocates both the adoption of a comprehensive regime and the anonymity prohibition, as a lens through which to assess the suitability of these regulatory trends to the United States. First, this Essay develops two dimensions of law and technology theory – timing and uncertainty – to evaluate the effectiveness of adopting a comprehensive regulatory regime. This Essay argues that although belated regulation of a new technology may incur enforcement hurdles due to the entrenchment of social norms, these

∗ Professor of Law, Seton Hall University School of Law. I would like to thank Solangel Maldonado, Lyria Bennett Moses, Charles Sullivan, and Sarah Waldeck for their comments. I would also like to thank Kristin Makar, Kimia Mousavi, Jeannie O’Connor, Evan Rosenberg, and Peter Slocum for their excellent research assistance.
hurdles are alleviated when, as in the case of ART, the technology is administered by intermediaries. This Essay then distinguishes between two ultimate goals of reducing uncertainty surrounding the use of new technologies: alleviating fears that inhibit the adoption of a new technology and protecting individuals already using a widely adopted technology from unexpected legal circumstances. It argues that the adoption of a comprehensive regulatory regime for ART will relieve the latter type of uncertainty. Secondly, the Essay examines the effects of the prohibition on gamete donor anonymity on the availability of donor gametes and the consequent social adoption of ART technology that is dependent on donor gametes. The Essay analyzes the data from three representative jurisdictions that prohibit anonymity: Sweden, Victoria (Australia), and the United Kingdom. It reveals that these jurisdictions suffer from significant shortages in donor gametes and underscores that efforts to combat these shortages resulted in eroding commitments to equality and the prevention of commodification. The Essay, therefore, cautions against the adoption of a prohibition on donor gamete anonymity in the United States.

INTRODUCTION

Artificial Reproductive Technology (“ART”) has recently received rather unfavorable media attention. On January 26, 2009, a woman gave birth to octuplets: six boys and two girls. Many argued that the lack of oversight of the fertility industry led to the implantation of eight embryos in an unemployed woman who could not support her own children. The octuplets controversy highlighted the need to regulate certain aspects of the practice of ART.

Naomi Cahn’s book, Test Tube Families, reveals that the regulatory void in the area of reproductive technology is a much broader phenomenon encompassing practically all aspects of the practice of ART. Test Tube Families is a masterful synthesis incorporating an expansive description of a medical practice governed by few legal mandates with a thoughtful analysis arguing for a comprehensive regulatory regime and elaborating on the intricate scheme of laws needed to regulate the practice of ART.
Cahn’s analysis is divided into three parts. First, Cahn exposes the minimal regulation currently governing the practice of ART, including the market for eggs and sperm (“gametes”). Cahn argues for expansive federal regulation that would cover many aspects of the practice of ART, such as the number of transferred embryos, access for gamete recipients, and the prevention of the exploitation of gamete donors. Second, Cahn evaluates the impact of the practice of ART on the donors and the individuals seeking to conceive a child. Test Tube Families underscores the uncertainty involved in legal determinations of parenthood for many of ART’s donors and recipients. Cahn proposes that the principle of “intent” could effectively guide these determinations. Specifically, Cahn proposes that the law should enforce contracts that determine in advance who is the legal parent. Third, Cahn turns to examine the interests of the children conceived with donor gametes. Cahn focuses on the interests of these children in developing their identity by incorporating information about their genetic parents. She argues that although donor anonymity is the prevailing norm, the interests of the children conceived through use of donated gametes justify a law prohibiting donor anonymity that would also allow these children, once they reach the age of eighteen, to receive information about the donor.

This Essay uses the publication of this major work by Naomi Cahn as a lens through which to assess whether two global ART regulatory trends are suitable to the United States. First, Cahn’s proposal advocates that the United States join other jurisdictions in adopting a comprehensive regime to regulate both the practice of ART and the relationships between the parties using ART. There are other commentators and groups advocating that the United States adopt a comprehensive regulatory regime, see, for example, President’s Council on Bioethics, Reproduction & Responsibility: The Regulation of New Technologies 183-240 (2004), available at http://bioethics.georgetown.edu/pce/reports/reproductionandresponsibility/_pcbe_final_reproduction_and_responsibility.pdf (recommending comprehensive monitoring and oversight of ART in place of the current patchwork of regulation); Weldon E. Havins & James J. Dalessio, The Ever-Widening Gap Between the Science of Artificial Reproductive Technology and the Laws Which Govern that Technology, 48 DePaul L. Rev. 825, 829 (1999); Robert L. Stenger, The Law and Assisted Reproduction in the United Kingdom and United States, 9 J.L. & Health 135, 159 (1994-1995) (arguing that the United Kingdom’s Human Fertilisation and Embryology Act can guide U.S. efforts to address assisted reproductive technology).
regime for ART by developing two dimensions of law and technology theory\textsuperscript{14}: uncertainty and timing.

Timing can play an important role in evaluating potential legal reactions to new technologies. ART consists of a group of technologies, the oldest of which, artificial insemination, has been in popular use since the 1930s.\textsuperscript{15} Cahn’s account shows that the law’s failure to resolve many of the legal issues related to the use of artificial insemination further complicates the resolution of issues stemming from use of newer forms of ART, such as egg and embryo donations.\textsuperscript{16} This Essay posits that, in certain instances, late regulation of new technologies is harder to accomplish due to the entrenchment of contradictory social norms.\textsuperscript{17} However, it is important to distinguish between technologies that are used through an intermediary and technologies that are employed directly by the end-user. Where a technology is administered by an intermediary, particularly a professional intermediary, even a late regulatory scheme would face lower hurdles in overturning entrenched norms. Consequently, the regulation of ART, which is usually administered by physicians, fertility clinics, and sperm or egg banks, is unlikely to face the same obstacles as decentralized technologies.

Uncertainty also plays a role in technology regulating regimes. Comprehensive regulatory regimes can effectively dispel uncertainty in the use of new technologies. This Essay distinguishes between two ultimate goals of reducing the uncertainty surrounding uses of new technologies: alleviating fears to encourage the adoption of a new technology and protecting individuals using a widely adopted technology from entering unexpected legal circumstances. An example of a law reducing uncertainty to encourage the adoption of a new technology is the long-awaited federal Genetic Information Nondiscrimination Act of 2008 (“GINA”).\textsuperscript{18} GINA encourages use of genetic


\textsuperscript{16} CAHN, supra note 3, at 209-10.

\textsuperscript{17} See generally Gaia Bernstein, \textit{When New Technologies Are Still New: Windows of Opportunity for Privacy Protection}, 51 \textit{Vill. L. Rev.} 921 (2006) (arguing that regulation to change privacy norms online is less likely to be effective once these norms are entrenched).

testing technology by allaying fears of discrimination. Yet, users of ART in recent years have not been significantly deterred by the uncertainty enveloping use of the technology. The desire to have a child usually trumps any such hesitations. This Essay argues, however, that the adoption of a comprehensive regime to regulate ART will accomplish the second goal of dispelling uncertainty. Regulation will protect individuals lured by the technology and the promise of a child from entering unforeseen, life-devastating legal circumstances, such as a lesbian couple who discover that they share parental rights over the conceived child with the sperm donor.

This Essay will then turn to evaluate a second global regulatory trend: the prohibition on gamete anonymity. Eleven jurisdictions worldwide have adopted an open identity donor system, which prohibits donor anonymity. In Test Tube Families, Cahn emerges as the leading protagonist of the proposal to prohibit donor anonymity in the United States. Cahn advocates a prohibition on anonymity that would allow a child conceived through donor gametes to find out the donor’s identity once she turns eighteen, justifying the prohibition on the basis of the child’s need to develop her identity.

Commentators evaluating the effects of open identity systems consider different interests, including the privacy and procreative liberty interests of the parents, the privacy interests of the donors, and the potential effect of disclosure requirements on supply and demand of donor gametes. This Essay does not evaluate all the interests at stake, but instead focuses on a detailed assessment of the effect of prohibiting donor anonymity on the availability of donor gametes and the consequent diffusion, that is the social adoption, of ART technology that is dependent on donor gametes. I provide an in-depth

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22 Cahn, supra note 3, at 114-29, 215-37.


24 The technological life cycle is comprised of three stages: invention – the technical discovery; innovation – the first commercially successful application of the technology; and diffusion – the technology’s widespread social adoption. GEORGE S. FORD, THOMAS M.
analysis of the data from three representative jurisdictions that prohibit anonymity: Sweden, the Australian state of Victoria, and the United Kingdom. The data, although at times inconsistent, reveals a disconcerting overall picture. These jurisdictions suffer from significant shortages in donor gametes accompanied by long wait-lists for recipients. I posit that although the prohibition on donor anonymity is not necessarily the only factor leading to a shortage in donor gametes, it appears to have played an important role in all three jurisdictions.

This Essay underscores that donor shortages extend the detrimental psychological effects of infertility on those seeking to conceive and erect another obstacle to overcoming the low birth rates now prevalent in most European countries. It then goes beyond assessing the supply of donor gametes and the effects of donor scarcity on the adoption of the relevant technologies to examine the efforts to overcome the resulting shortages. Alternative recruitment methods targeting older donors are partly effective but do not produce the required supply of donor gametes, particularly eggs for which quality is age dependent. Individuals faced by long wait-lists in their jurisdictions resort to fertility tourism to countries that maintain an anonymous system. Finally, jurisdictions are increasingly recognizing the effects of combining a prohibition on donor compensation with a prohibition on donor anonymity and beginning to reevaluate their commitment to banning compensation. This Essay emphasizes that the efforts to combat the shortages threaten additional values, beyond privacy and procreative rights. Specifically, I show that commitments to equality and to the prevention of commodification are eroded by reactions to donor gamete shortage. I caution that while open donor systems may carry some advantages to children, the described effects urge against transforming the United States into a mandatory open identity donor system.

This Essay will proceed as follows: Part I will discuss the contribution of Test Tube Families. Part II will develop law and technology theory to evaluate the regulatory scheme proposed by Test Tube Families, examining the issues of uncertainty and timing. Part III will discuss the proposal to prohibit donor anonymity and argue that the effects on the diffusion of donor gamete dependent ART technologies contend against adopting a prohibition on donor anonymity.
I. TEST TUBE FAMILIES

In Test Tube Families, Cahn expertly describes the regulatory void in the area of reproductive technology. Cahn draws a disturbing picture of a medical practice guided by few legal mandates and exposes the consequences of this lack of oversight for all parties involved. Test Tube Families identifies the need for a comprehensive regulatory scheme. It demonstrates that the industry’s self-regulation failed and further articulates a complex network of laws needed to regulate the practices of ART.\(^{25}\) Specifically, Cahn calls for regulation in three areas: the practice of ART, including the market for eggs and sperm; parental relationships; and donor identity. Test Tube Families examines current federal and state regulations of the practice of ART highlighting their limited scope.\(^{26}\) Existing regulations are mainly limited to requiring minimal testing to assure the medical safety of donated gametes and requiring clinics to provide information about their success rates.\(^{27}\) Cahn, therefore, argues for the need to legislate a comprehensive set of federal laws that will include a limitation on the number of embryos that can be transferred to a woman,\(^{28}\) prevent the exploitation of gamete donors,\(^{29}\) guarantee access for gamete recipients,\(^{30}\) and consider the creation of a federal national registry (which will prevent donors from misrepresenting the quality of their gametes and their history of donations).\(^{31}\)

Cahn looks beyond the practice of ART to assess its impact on the parties involved: the parents and the children. Test Tube Families exposes the uncertainty surrounding the resolution of the seemingly innocuous questions: “who is your mom?” and “who is your dad?”\(^{32}\) Particularly, Cahn points to the absence of laws governing the parental rights of egg and embryo donors and their recipients.\(^{33}\) She also underscores the particularly uncertain parental status of all parties involved when single women and lesbians use ART.\(^{34}\) For example, significant uncertainty accompanies the accordance of parental rights to a same sex partner who is not the biological parent.\(^{35}\) Finally, she describes the conflicting state laws that govern the practice of surrogacy. While some courts will enforce surrogacy agreements and grant the intended parents parental rights, other courts will not enforce parental rights according to the

\(^{25}\) Cahn, supra note 3, at 4, 24-25.
\(^{26}\) Id. at 52-64.
\(^{27}\) Id. at 52-62.
\(^{28}\) Id. at 194, 196.
\(^{29}\) Id. at 25, 197-200.
\(^{30}\) Id. at 153.
\(^{31}\) Id. at 162-63.
\(^{32}\) Id. at 88-113.
\(^{33}\) Id. at 88, 93-98.
\(^{34}\) Id. at 89, 107-12.
\(^{35}\) Id. at 109-03.
surrogacy agreement and may even award parental rights to the surrogate.\textsuperscript{36} Cahn proposes to reduce the uncertainty surrounding the resolution of these crucial questions by promoting the principle of “intent.”\textsuperscript{37} Specifically, she proposes a law enforcing private contracts signed in advance by the parties who may claim the title of legal parent. Cahn also proposes the law should require parents and known donors to execute a written agreement in advance that will determine their parental responsibilities.\textsuperscript{38}

Finally, Cahn turns to examine the interests of the children conceived through ART. Cahn focuses on the interests of children conceived with donor gametes in developing their identity by incorporating information about their genetic parents.\textsuperscript{39} Cahn discusses the current trend, prevailing particularly among heterosexual parents, who do not disclose to their children that they were conceived through gamete donation.\textsuperscript{40} However, Cahn argues that the children’s identity interests create the need for a law mandating that children conceived with donor gametes receive information about their donor parents once they reach the age of eighteen.\textsuperscript{41}

II. THE ADOPTION OF A COMPREHENSIVE REGULATORY REGIME: TIMING AND UNCERTAINTY

Naomi Cahn, in her elaborate proposal in \textit{Test Tube Families}, joins a growing number of commentators who advocate for the adoption of a comprehensive regime in the United States to govern the practice of ART.\textsuperscript{42} Law and technology theory can assist in evaluating some of the effects of the adoption of such a comprehensive regime in the United States.\textsuperscript{43} In this Part, I examine the likelihood that the new regime will effectively alter the social norms governing the practice of ART, given that the timing of the regulation lags well behind the adoption of the technologies. I will then discuss the types of uncertainty associated with new technologies and the ways that

\begin{footnotesize}
\begin{enumerate}
\item Id. at 99-107.
\item Id. at 27, 211-12.
\item Id. at 211-12.
\item Id. at 125-29.
\item Id. at 117-21.
\item Id. at 116, 228-34.
\item See sources cited supra note 13.
\end{enumerate}
\end{footnotesize}
comprehensive regulatory regimes can alleviate them. Finally, I will identify the specific type of uncertainty that can be resolved in the case of ART.\textsuperscript{44}

A. Timing

ART consists of a group of technologies, the oldest of which, artificial insemination, has been in popular use since the 1930s.\textsuperscript{45} Surrogacy has been practiced since the mid-1970s\textsuperscript{46} and in vitro fertilization (“IVF”) has been in use since the late 1970s.\textsuperscript{47} In \textit{Test Tube Families}, Cahn shows that the legal regime mostly abstained from regulating these technologies.\textsuperscript{48}

Physicians, fertility clinics, and sperm banks are largely left to their own devices in determining the practice of ART, including implantation proceedings, selection of donors and recipients, and disclosure of donors’ identities.\textsuperscript{49} The medical profession filled this regulatory void with its own norms. While anonymity became the general norm governing donor identity,\textsuperscript{50} a “laissez-faire” norm governs the other aspects of the practice of ART. For example, physicians, fertility clinics, and sperm banks have diverse policies regarding recipient access and the number of embryos transferred.\textsuperscript{51}

In \textit{Test Tube Families}, Cahn proposes a comprehensive regulatory regime, which would govern both donor identity and other practices currently governed under the “laissez-faire” norm. Assuming that regulation is desirable, the obvious question raised by \textit{Test Tube Families} is whether it is practicable to regulate a technology that has been left unregulated for decades. This question is pertinent, particularly because the regulation of newer forms of ART, such

\textsuperscript{44} In \textit{Test Tube Families}, Cahn discusses extensively the need for regulation and the types of law, whether federal or state, that would be most suitable for regulating the different areas of ART. This Essay departs from where Cahn has left off. It assumes that regulation is necessary and examines the effects of such regulation on the uncertainty surrounding the use of ART and the effectiveness of such regulation despite the problem of timing. The type of regulatory tools used is an issue that is relevant to the topic timing, yet that discussion is beyond the scope of this Essay.

\textsuperscript{45} Bernstein, supra note 15, at 1060-71.

\textsuperscript{46} Lisa L. Behm, Legal, Moral & International Perspectives on Surrogate Motherhood: The Call for a Uniform Regulatory Scheme in the United States, 2 DEPAUL J. HEALTH CARE L. 557, 561-63 (1999) (stating that the first surrogacy through artificial insemination was practiced in the mid-1970s in California while the first gestational surrogacy (surrogacy via use of IVF) occurred in 1986).

\textsuperscript{47} Louise Brown was the first child to be born through IVF in 1978. See Peter Gwynne et al., \textit{All About That Baby}, NEWSWEEK, Aug. 7, 1978, at 66.

\textsuperscript{48} CAHN, supra note 3, at 49-51.

\textsuperscript{49} \textit{Id.} at 43-72. An alternative source of guidance is the non-binding guidelines of medical associations. \textit{Id.} at 62-64.

\textsuperscript{50} \textit{Id.} at 114-20.

as egg and embryo donations, is closely related to the regulation of the basic procedures of artificial insemination and IVF.

Law can shape the use of new technologies.\textsuperscript{52} Yet, timing is crucial in the regulation of new technologies. Regulation can be delayed both through late enactment of laws and through belated enforcement of existing laws. Once social norms are created, it is sometimes too late to change them through law.\textsuperscript{53} The 1990s and the first decade of the twenty-first century are replete with instances of technology regulating failures. Timing problems contributed to some of these failures. In these instances, social norms became rapidly entrenched and legal regulation failed to alter them. Specifically, laws prohibiting uses of technologies that amount to a copyright violation have been particularly ineffective. A primary example is peer-to-peer music file sharing on the internet. The Recording Industry Association of America repeatedly sued individuals who used file-sharing systems to download music on the internet.\textsuperscript{54} Yet, file sharing remains a prevalent phenomenon.\textsuperscript{55} Although music downloading violates copyright law, individuals engaging in downloading do not view file sharing as immoral.\textsuperscript{56} Similarly, the law has


\textsuperscript{53} See Bernstein, \textit{supra} note 17, at 937-46 (drawing on insights from the law and social norms theory, the economic theory of path dependence, and the science and technology studies theory of “Closure” to demonstrate the importance of timing for legal regulations).


failed to prevent the unauthorized copying of software, music CDs, and videotapes.57

Lack of compliance, like that in the digital legal arena, results from a failure of the law to alter existing social norms that vary significantly from the legal pronouncement. Law and social norms theory shows that laws are less likely to be effective where they sharply digress from existing social norms.58 These laws may even backfire by enhancing the very norms they seek to change.59 Attempts to change the norms surrounding the use of a technology after they are entrenched encounter significant hurdles and, under certain circumstances, fail. Scholars offer two main theories to explain this phenomenon. First, the law can more easily enforce a rule that does not contradict existing social norms because prohibited conduct is already embedded in social stigma and people follow it to avoid the disapproval of their social group.60 It is a much more difficult task to establish a successful legal norm which has to restructure social stigma in order to achieve compliance.61 Second, legitimacy – the belief that the law-making authority and the content of the law is entitled to deference – is undermined when the law diverges from social norms.62

The norms surrounding the use of reproductive technologies are similarly entrenched. An attempt to enforce a comprehensive regulatory regime on the use of reproductive technologies would conflict with the prevailing “laissez-faire” norm, while mandating the disclosure of donor identity would diverge from the prevailing norm of donor anonymity. However, I suggest that timing, the gap between the creation of existing norms and the proposed regulation, is unlikely to pose the same hurdle in the case of reproductive technologies as in the case of digital technologies.

2003, at D4 (quoting Gallop poll showing that eighty-three percent of thirteen- to seventeen-year-olds considered downloading music to be morally acceptable).


60 Id.


One important respect in which digital technologies differ from reproductive technologies is their mode of diffusion. Specifically, the technologies differ in the type of entity that adopts and controls the use of the technology. Digital technologies are adopted by the end user. The diffusion process of digital technologies is decentralized in that diffusion emerges horizontally through peer networks: there is no central expert group that administers the diffusion. Conversely, reproductive technologies have centralized diffusion systems. Technical subject matter experts control decisions and diffuse the technology to local users. Sperm banks, fertility clinics, and physicians administer the technologies. Most reproductive technologies cannot be used by individuals without the help of an intermediary – a gatekeeper – who applies them.

Law and social norms theory posits that people comply with the law for their own benefit or to avoid sanctions. The threat of punishment deters certain behavior, while rewards encourage other behavior. Deterrence depends on the perceived risk that a person will, in fact, be sanctioned. Individual users violating copyright laws through unauthorized copying or downloading have a low perceived risk of sanction. Individual users are unlikely to be punished due to the broad range of infringements and geographical and technological restraints.

To overcome the problem of a low perceived risk of sanction, many intellectual property right owners, and some commentators, support targeting enforcement measures at intermediaries, such as search engines, file sharing distribution systems, or Internet Service Providers (“ISPs”). The rationale

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64 See Rogers, supra note 24, at 180, 394-98; DONALD A. SCHON, BEYOND THE STABLE STATE 80-115 (1971).

65 An exception is artificial insemination with a known donor sperm, which can be administered at home without the intervention of an institutional setting.


67 FRIEDMAN, supra note 66, at 83.

68 See Depoorter & Vanneste, supra note 55, at 1137.

underlying the focus on intermediaries is that enforcement should be addressed at the bottleneck point. A law is more likely to achieve compliance if the number of people who need to comply is smaller.\(^{70}\) Consequently, enforcing copyright laws on intermediaries rather than the general public is more likely to achieve compliance.

Efforts to impose liability on intermediaries to achieve compliance with copyright laws have often failed because ISPs and search engines have only partial control over the individuals who use the technologies.\(^{71}\) Conversely, physicians, sperm banks, and fertility clinics represent the bottleneck in the diffusion process of reproductive technologies. They are the gatekeepers. Physicians control the administration of reproductive technologies. Individual users usually cannot use the technologies without professional help. Reproductive technologies are generally administered in a limited number of institutional medical settings.\(^{72}\) Furthermore, physicians are licensed intermediaries who can be sanctioned for lack of compliance through the revocation of their medical license.

Admittedly, regulation rarely accomplishes perfect compliance and may at times fail even when it targets intermediaries. The medical arena is no exception.\(^{73}\) Yet, the belated regulation of reproductive technologies is less likely to suffer the same fate as the regulation of digital technologies even though the norms surrounding reproductive technologies are similarly entrenched. The legal regime’s ability to target the intermediaries who control

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\(^{70}\) FRIEDMAN, supra note 66, at 85.


\(^{73}\) On the effects of regulation in the medical arena, see Robert Gatter, Human Subjects Research and Conflicts of Interest: Walking the Talk of Trust in Human Subjects Research: The Challenge of Regulating Financial Conflicts of Interest, 52 EMORY L.J. 327, 383-99 (2003) (arguing that legal enforcement in the medical arena can backfire by undermining trustworthiness); James Gibson, Doctrinal Feedback and (Un)Reasonable Care, 94 VA. L. REV. 1641, 1653-92 (2008) (arguing that legal regulation can lead to over-compliance by doctors); Carol A. Heimer, Competing Institutions: Law, Medicine, and Family in Neonatal Intensive Care, 33 LAW & SOC’Y REV. 17, 47 (1999) (showing that regulatory law is more likely to achieve compliance in the medical arena than tort law and criminal law).
the technologies improves the odds of compliance and reduces the timing obstacle.

B. Uncertainty

Comprehensive regulatory regimes can help dispel uncertainty in the use of new technologies. It is important to address the legal uncertainty surrounding the use of new technologies for two reasons. First, legal uncertainty can inhibit the adoption of a new technology. Second, individuals may be blinded by the strong lure of a new technology and find themselves in unanticipated legal situations due to that uncertainty.74

Comprehensive regulatory regimes are particularly effective in dispelling legal uncertainty that inhibits the adoption of a new technology. The law has two functions: coercive and expressive. The law’s coercive function influences conduct through enforcement, while the law’s expressive function operates by sending a message. The expressive function of the law influences behavior by expressing moralizing features, such as normative principles and social values.75 The law’s expressive function publicizes a social consensus that certain conduct is required to comply with an internalized norm and the violation of the concrete obligation induces behavioral change by producing guilt.76

Different types of regulation of new technologies have diverse effects on users’ perceptions of risk related to the use of the technology.77 A clear-cut, comprehensive legal proclamation can accelerate the diffusion of a new technology. The diffusion process of the technology of artificial insemination in humans demonstrates the importance of such clear-cut, comprehensive pronouncements. Despite the simplicity of the procedure of artificial

74 Although even where legal certainty exists, individuals can find themselves in unanticipated legal situations due to lack of knowledge and understanding of the law; legal uncertainty increases the probability of such a result.


76 McAdams, supra note 75, at 400-09.

77 Law is not the only influence on individuals’ perception of risk regarding a certain technology. A rich literature describes the effects of individuals’ perceptions of safety and risk involved in the use of a technology. See generally DANIEL M. KAMMEN & DAVID M. HASSENZAHL, SHOULD WE RISK IT? EXPLORING ENVIRONMENTAL, HEALTH, AND TECHNOLOGICAL PROBLEM SOLVING (1999) (discussing the effects of risk analysis on decision making); THE SOCIAL AND CULTURAL CONSTRUCTION OF RISK: ESSAYS ON RISK SELECTION AND PERCEPTION (Branden B. Johnson & Vincent T. Covello eds., 1987) (discussing the social construction of risk); CASS R. SUNSTEIN, RISK AND REASON: SAFETY, LAW, AND THE ENVIRONMENT (2002) (discussing ways to reduce risks rationally by promoting governmental responses); Mandel, supra note 43.
insemination and its existence since the late eighteenth century, the general public hesitated to use artificial insemination until the 1960s. Conflicting legal pronouncements regarding the legal issues surrounding the procedure inhibited adoption of the technology for many years.\textsuperscript{78} Artificial insemination reached mainstream adoption only during the 1960s as the legal regime shifted toward a comprehensive and consistent assurance for married couples using this technology.\textsuperscript{79} During the 1960s and into the 1970s, states consistently began to guarantee that the husband of the woman who is inseminated with donor sperm is the legal father, the donor whose sperm was used is not the legal father, the wife using donor sperm does not commit adultery, and the child conceived through donor sperm is legitimate.\textsuperscript{80} The assurances of the legal regime reduced the uncertainty surrounding the technology and encouraged its adoption.

A comprehensive federal statute is particularly effective in its ability to eliminate risk perceptions through its expressive function.\textsuperscript{81} One current effort to combat fears surrounding the adoption of a new technology involves genetic testing and preventing the threat of genetic discrimination. Despite the absence of genetic discrimination, many individuals resisted undergoing genetic testing.\textsuperscript{82} Individuals feared that if they tested positive for a genetic

\textsuperscript{78} Bernstein, \textit{supra} note 15, at 1048-97.
\textsuperscript{79} N.Y. \textit{STATE TASK FORCE ON LIFE \& LAW, SURROGATE PARENTING: ANALYSIS AND RECOMMENDATIONS FOR PUBLIC POLICY} 19 (1988); Bernstein, \textit{supra} note 15, at 1083-97 (providing data on the rising popularity of artificial insemination and demonstrating that legalization was an important factor in the increased diffusion of artificial insemination).
\textsuperscript{80} The legal shift was comprised of several well-publicized cases and the enactment of state laws. \textit{See} \textit{GA. CODE ANN.} § 74-9904 (1973) (enacting the first statute to legitimize artificial insemination in 1967); \textit{People v. Sorensen}, 437 P.2d 495, 498-99 (Cal. 1968) (ruling that a child born through artificial insemination is legitimate and the husband of the woman who gave birth through insemination is liable for support); \textit{Gursky v. Gursky}, 242 N.Y.S.2d 406, 411-12 (Sup. Ct. 1963) (ruling that the husband of the woman who gave birth to a child through artificial insemination is liable for support). The Uniform Parentage Act, which was adopted in 1973, provided that artificial insemination with donor sperm is legal and that the donor is not the legal father. \textit{UNIF. PARENTAGE ACT} §§ 201, 204 (amended 2002), 9B U.L.A. 11, 13 (2001). By the end of the 1970s at least fifteen states had statutes regulating artificial insemination. Bernstein, \textit{supra} note 15, at 1090. Furthermore, since the 1960s courts began to align with state legislatures and ceased to issue conflicting opinions. \textit{Id.} at 1083-97; Carol A. Donovan, \textit{The Uniform Parentage Act and Nonmarital Motherhood-by-Choice}, 11 \textit{N.Y.U. REV. L. \& SOC. CHANGE} 193, 208 (1982-1983).
mutation they may lose their health insurance or employment. These fears prevailed although empirical data demonstrates that genetic discrimination was, in fact, rare. At the same time, until recently, protection against genetic discrimination was comprised of a partial and inconsistent patchwork of federal and state laws. The uncertainty surrounding the legal protection from genetic discrimination exacerbated the public’s fears. An important goal in the adoption of the recent Genetic Information Nondiscrimination Act of 2008 ("GINA"), which provides a clear, relatively comprehensive federal restriction on genetic discrimination, was to encourage use of genetic testing technology by allaying uncertainty due to fears of discrimination.

Comprehensive legal regimes are also effective in dispelling the second type of legal uncertainty and protecting individuals lured by the promise of a new technology from entering an uncertain legal terrain and unanticipated legal consequences. The type of comprehensive scheme proposed by Cahn would accomplish this second goal of dispelling uncertainty: it would protect individuals lured by the technology and the promise of a child from entering unforeseen, life-devastating legal circumstances.

Individuals seeking to have a child are often willing to undertake drastic measures and disregard medical as well as legal risks. Despite the legal uncertainty and absence of regulation, reports show an increase in the number of reported ART procedures. While the growth in the practice of ART is doubtless also the result of the improvement in results, that is, live pregnancies and increasing social acceptance, there is no indication that fears of legal uncertainty are halting the use of ART.

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83 Bernstein, supra note 81, at 255-62.
84 Id.
85 Id. at 262-63.
86 Id. at 264.
88 See Roberts, supra note 19, at 471-74; Wayne, supra note 19, at 38-39.
90 The percentage of live births from ART procedures in 1998 was 24.7%, while in 2005 the percentage was 35%. Schieve et al., supra note 89, at 97; Wright et al., supra note 89, at
The type of comprehensive regime, proposed by Cahn, will protect individuals and couples who use ART to conceive a child from finding themselves in unexpected dire circumstances. A comprehensive regime could prevent an increasingly common scenario in which individuals undergoing ART procedures learn that they unexpectedly share parental rights with additional individuals. Most commonly, these cases involve unmarried individuals using sperm or an egg from a known donor who initially agrees to waive parental rights but later sues for these rights in court. An example of such a situation occurred in *K.M. v. E.G.*[^91] In that case a woman gave birth to a child using her lesbian partner’s eggs. A written agreement between the couple stated that the biological mother relinquished parental rights. However, when the couple separated, the court granted the biological mother parental rights.[^92] A comprehensive regime could also prevent another type of devastating circumstance in which individuals learn after the ART process culminates in the birth of a child that they do not have parental rights over that child. For example, in *In re Marriage of Moschetta*, the court held that the surrogate and not the intended mother who arranged for the surrogacy was the legal mother. The court, therefore, denied the intended mother custody over the conceived child.[^93]

### III. DONOR ANONYMITY AND THE DIFFUSION OF ART

Prohibiting gamete donor anonymity is a growing global trend, currently adopted by eleven jurisdictions. Since 1985, Sweden, Austria, Switzerland, the Netherlands, Norway, the United Kingdom, New Zealand, Finland, and the Australian states of Victoria, Western Australia, and New South Wales have

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5. Although other factors such as the age of the women and the specific procedure used can affect the number of live births, the reports indicate overall progress in the results achieved by ART technology.

[^91]: 117 P.3d 673 (Cal. 2005).


[^93]: *In re Marriage of Moschetta*, 30 Cal. Rptr. 2d 893, 903 (Ct. App. 1994); see also *In re Baby M*, 537 A.2d 1227, 1234 (N.J. 1988) (invalidating a surrogacy agreement and voiding the adoption of the child by the intended mother).
prohibited anonymous gamete donations. U.S. law does not prohibit anonymous gamete donation. While many commentators in the United States have examined this trend, Cahn emerges as the main protagonist advocating the prohibition of anonymous gamete donation in the United States. Cahn, in Test Tube Families, argues that the interest of children conceived through gamete donors in constructing their identity justifies a law prohibiting donor anonymity and allowing these children, once they reach the age of eighteen, to receive information about the donor.

Commentators identify the need of children to develop their identity as the main reason for open-identity gamete donor systems. Commentators evaluating open identity systems have highlighted different considerations including the privacy and procreative liberty interests of the parents, the privacy interests of the donors, and the effect on supply of donor gametes. I do not endeavor, in this Essay, to assess all the interests at stake, but instead examine in detail the impact of prohibiting donor anonymity on the availability of donor gametes and consequently on the diffusion, that is the social adoption, of ART technology that is dependent on donor gametes. This Part shows that although the data is not always consistent, the overall picture reveals a disconcerting scenario of dire shortages in donor gametes, overcome only partly by alternative recruitment methods of older gamete donors but mainly by fertility tourism to countries in which anonymity is not prohibited. This Part underscores that donor gamete shortage extends infertility and its detrimental psychological effects on those who seek to conceive while also


95 Cahn, supra note 3, at 115.

96 For additional support for prohibiting donor anonymity in the United States, see, for example, Michelle Dennison, Revealing Your Sources: The Case for Non-Anonymous Gamete Donation, 21 J.L. & HEALTH 1, 3 (2007-2008) (arguing that “legislating the end of anonymous gamete donation” and allowing current children of anonymous gamete donation “the ability to access identifying information about their donors is in the best interest of all parties”).


99 See, e.g., Cahn, supra note 3, at 217-28; Frith, supra note 23, at 820-22; Suter, supra note 23, at 260-73; Turkmen et al., supra note 23, at 291-305.

100 See sources cited supra note 24.
posing an additional obstacle to resolving the problem of low birth rates in
European countries. It further shows that efforts to combat gamete shortage
erode commitments to equality and to the prevention of commodification.
Hence, I caution that while open donor systems may carry some advantages to
children, the resulting shortages inhibiting the use of donor gamete dependent
ART and the range of compromised values and commitments underscore the
need to avoid the adoption of an open identity system in the United States.

A. Prohibitions on Donor Anonymity and the Supply of Donor Gametes

This Section takes a close look at the data available from three
representative jurisdictions that prohibit donor anonymity: Sweden, the
Australian state of Victoria, and the United Kingdom. In Sweden and
Victoria, the relevant data is of sperm donors, since anonymity was prohibited
before egg donors became common. The data in the United Kingdom, where
anonymity was prohibited later, includes both sperm and egg donors.

1. Sweden

In 1985, Sweden was the first jurisdiction in the world to allow a child born
through artificial insemination with donor sperm to find out the identity of the
donor when she reached maturity. Early reports showed a significant
decline in the number of donors over the first couple of years after the law
came into effect. The number of children born with donor sperm declined
from two hundred new donors per year just before the law came into effect to
thirty new donors per year by 1988. Furthermore, reports indicated that half
the hospitals that offered artificial insemination by donor closed their

101 I have selected Sweden and Victoria because they are the first jurisdictions in which
donor anonymity was prohibited. Therefore, donor-conceived children have reached or are
reaching the age at which they can demand to know the donor’s identity. Additionally, in
these jurisdictions there is relatively more data than in other jurisdictions on the effects on
the number of gamete donors. I have selected the United Kingdom as a representative of a
jurisdiction in which anonymity was recently prohibited. The prohibition on anonymity in
the United Kingdom is currently in the midst of a heated debate and, therefore, the effects of
this move are well-documented and quantified. I should add that although I do not provide
detailed information on the data in the other jurisdictions in which anonymity was
prohibited, the overall situation of gamete shortage and long wait-lists in these jurisdictions
does not appear to differ from the situation in Victoria, Sweden, and the United Kingdom.

102 Erling Ekerhovd, Anders Faurskov & Charlotte Werner, Swedish Sperm Donors Are
Driven by Altruism, but Shortage of Sperm Donors Leads to Reproductive Travelling, 113

265, 266 (1991); see also Ken Daniels & Othon Lalos, The Swedish Insemination Act and
the Availability of Donors, 10 Hum. Reprod. 1871, 1871-72 (1995) (confirming that the
number of children born through donor insemination dropped between 1983 and
programs. Commentators attributed the closure of sperm donor programs and decrease in children born through donor sperm to the prohibition on donor anonymity. At the same time, a 1995 study showed that data accumulated between 1989 and 1993 indicated a 65% increase in the number of donors, from 69 new donors in 1989 to 106 in 1993. Based on the 1995 study, commentators believed that the prohibition on donor anonymity caused only an initial decline in the number of donors, which was later overcome through recruitment measures.

Unfortunately, no one has published an additional study of the number of new donors since 1995. Furthermore, while the Swedish authorities do not currently publish data of the number of new donors registered yearly, indirect information points to a scarcity of donors. One study, providing data of the number of donor inseminations conducted from the enactment of the law until 2005, indicates a steady decline from 900 yearly inseminations in 1985 to 300 yearly inseminations in 2005. Insemination data is not as indicative as donor data, since a decrease in the number of inseminations can be a result of other factors, such as the advent of alternative technologies including IVF. However, recent reports by commentators and the news media of donor sperm shortages causing long wait-lists of six to eighteen months support the conclusion that the decrease in the number of inseminations is at least partly a result of the shortage in donors. Initially, demand may have been lower in Sweden than in other countries like the United States because, until 2005, lesbians were not allowed to use donor sperm. Once demand in Sweden leveled with the demand in other countries, acute shortages became evident.

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104 Bygedemen, supra note 103, at 266; see also Daniels & Lalos, supra note 103, at 1872.
105 Bygedemen, supra note 103, at 266; see also Daniels & Lalos, supra note 103, at 1871-72.
106 Daniels & Lalos, supra note 103, at 1872.
107 See id. at 1872-73.
108 Email from Henrik Nordin, Statistics Coordinator, Nat’l Bd. of Health & Welfare, to author (Jan. 29, 2010) (on file with the Boston University Law Review) (stating that the Swedish National Board of Health and Welfare does not have information of the yearly number of new sperm donor and providing a list of clinics and hospitals from which the information can be collected).
110 Ekerhovd et al., supra note 102, at 306, 311-12.
112 See, e.g., id. (reporting on increased demand for donor sperm by same sex couples and tying the shortage to the prohibition on anonymity).
Finally, Sweden allows compensation of donor gametes.\footnote{113 Since 2006, Sweden has begun prohibiting trading in eggs and sperm for profit; gamete owners who donate their gametes are still compensated. 8 ch. 6 § LAG OM GENETISK INTEGRITET [The Genetic Integrity Act], (Svensk författningssamling [SFS] 2006:351), available at http://www.smer.se/Bazment/266.aspx.} Therefore, a prohibition on compensation of donors has not played a role in creating the shortage.

2. Victoria (Australia)

Victoria, an Australian state, was one of the first regimes to prohibit donor gamete anonymity. In 1985 Victoria enacted the Infertility (Medical Procedures) Act 1984 (“The Infertility Act of 1984”), which went into effect in 1988, and created a donor register.\footnote{114 The Infertility (Medical Procedures) Act 1984 (Vic) (Austl.).} However, under the Infertility Act of 1984, no information could be released without the donor’s consent.\footnote{Id.} In 1995, the Victorian legislature enacted the Infertility Act of 1995, which came into effect in 1998, and allowed donor conceived children to access information about donors once they reach the age of eighteen.\footnote{The Infertility Act 1995 (Vic) s 70 (Austl.).  For a description of the legislative history in Victoria, see Moses, supra note 14, at 555-59.  In addition, the National Health and Medical Research Council in Australia publishes ethical guidelines requiring use only of gametes of donors who agree to release of information. These guidelines are not mandatory. AUSTL. NAT’L HEALTH & MED. RESEARCH COUNCIL, ETHICAL GUIDELINES ON THE USE OF ASSISTED REPRODUCTIVE TECHNOLOGY IN CLINICAL PRACTICE AND RESEARCH, § 6.1, at 25-26 (2007), available at http://www.nhmrc.gov.au/_files_nhmrc/file/publications/synopses/e78.pdf; Moses, supra note 14, at 552.} The table below shows the number of newly registered sperm donors in Victoria in periods relevant to the legal changes:\footnote{117 The presentation of the data accounts for the effects of laws as they are enacted and discussed and even before they go into effect. The data presents the lowest and highest number of donors per year during the period represented. The data in this table is based on Helen Szoke, The Victorian Experience of Administering Donor Birth Registers, 1271 Int’l Congress Series 357, 358 (2004). Additional numbers derived from the publications of the Victorian Assisted Reproduction Treatment Authority (formerly Infertility Treatment Authority (‘ITA’)) are as follows: 25 in 1998; 29 in 1999; 38 in 2000; 28 in 2001; 10 in 2002; 14 in 2003; 23 in 2004; 17 in 2005; 16 in 2006; 31 in 2007; 21 in 2008. INFERTILITY TREATMENT AUTH., 1999 ANNUAL REPORT 25; INFERTILITY TREATMENT AUTH., 2000 ANNUAL REPORT 28; INFERTILITY TREATMENT AUTH., 2001 ANNUAL REPORT 25; INFERTILITY TREATMENT AUTH., 2002 ANNUAL REPORT 27; INFERTILITY TREATMENT AUTH., 2003 ANNUAL REPORT 24; INFERTILITY TREATMENT AUTH., 2004 ANNUAL REPORT 24; INFERTILITY TREATMENT AUTH., 2005 ANNUAL REPORT 25; INFERTILITY TREATMENT AUTH., 2006 ANNUAL REPORT 25; INFERTILITY TREATMENT AUTH., 2007 ANNUAL REPORT 27; INFERTILITY TREATMENT AUTH., 2008 ANNUAL REPORT 31; INFERTILITY TREATMENT AUTH., 2009 ANNUAL REPORT 29. All of the Infertility Treatment Authority Reports are available at http://www.varta.org.au/www/257/1003057/displayarticle/1003573.html.}
<table>
<thead>
<tr>
<th>Time Period</th>
<th>Range of Numbers of Newly Registered Sperm Donors Per Year</th>
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<tr>
<td>1977-1983</td>
<td>125-200</td>
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<tr>
<td>1984-1987</td>
<td>50-95</td>
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<tr>
<td>Infertility Act of 1984 goes into effect in 1988</td>
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<tr>
<td>1995-1997</td>
<td>35-40</td>
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<tr>
<td>Infertility Act of 1995 goes into effect in 1998</td>
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<tr>
<td>1998-2008</td>
<td>10-38</td>
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</table>

While the numbers of sperm donors fluctuated between individual years, the assessment of the different relevant periods clearly indicates a consistent decline in the numbers of newly registered sperm donors. Other factors could have contributed to the decline in the number of donors. One such factor is the introduction of more effective procedures such as IVF and intracytoplasmic sperm injection (“ICSI”), which could have reduced the need for sperm donors. However, the media repeatedly reports of a shortage in donor sperm. To address the shortage, one Victorian IVF clinic resorted to innovative and reactionary measures by writing to all male politicians under forty-five, requesting them to serve as “role models” and donate sperm.

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118 Both IVF and ICSI increase the likelihood of a successful treatment cycle. ICSI injects sperm into the egg enhancing the likelihood of successful fertilization of the egg, therefore increasing the likelihood of a successful IVF cycle. A cycle of IVF has a higher rate of success than a cycle of artificial insemination for patients with certain fertility problems. Both ICSI and IVF, therefore, reduce the number of treatment cycles and the amount of donor sperm needed. In addition, ICSI is effective in overcoming male infertility problems, therefore reducing the need for donor sperm because the woman partner’s sperm can be used. See generally Gabor T. Kovacs et al., *In Vitro Fertilization, a Practical Option After Failed Artificial Insemination with Donor Semen*, 1 REPROD. FERTILITY & DEV. 383 (1989) (reporting better outcomes for couples undergoing IVF for tubal disease than those undergoing artificial insemination); A.M.E. Lintsen et al., *Predicting Ongoing Pregnancy Chances After IVF and ICSI: A National Prospective Study*, 22 HUMAN REPROD. 2455 (2007) (reporting higher rates of successful cycles for IVF using ICSI compared to IVF without ICSI); Lucette van der Westerlaken et al., *Intracytoplasmic Sperm Injection as a Treatment for Unexplained Total Fertilization Failure or Low Fertilization After Conventional In Vitro Fertilization*, 83 FERTILITY & STERILITY 612, 615-616 (2005) (reporting higher success rates of fertilization using ICSI).


120 See, e.g., Hickman, supra note 119, at 5; *Clinic Asks Australian MPs to Donate Sperm*, TURKISH DAILY NEWS, Jan. 14, 2005.
Another factor which contributed to the scarcity in donors is Australia’s prohibition on compensation for donor gametes. However, the federal Australian law prohibiting compensation was only enacted in 2006 and went into effect in 2007. Therefore, it does not account for the earlier gamete shortage.121

3. United Kingdom

The Human Fertilisation and Embryology Authority (Disclosure of Donor Information) Regulations came into effect on April 1, 2006.122 The law prohibited gamete donor anonymity.123 Under the new law, children conceived via donor gametes can receive information on the identity of the donor when they reach the age of eighteen.124 The prohibition on donor gamete anonymity in the United Kingdom is currently at the center of a heated public debate.

The Human Fertilisation and Embryology Authority (the “Authority”) publishes yearly figures of the number of gamete donors and donor procedures.125 The published data portrays a mixed picture. On the one hand, the number of yearly newly registered gamete donors has not decreased since the law came into effect.126 Moreover, the yearly number of newly registered egg donors only declined initially followed by resurgence in the number of donors.127 However, some reports argue that the numbers of registered donors is misleading because of the “increase in the number of ‘known donors’ –
friends [or] relatives who donate for a [person]’s exclusive use.”

At the same time, other parts of the data provided by the Authority raise concern. The Authority reports a decrease in the number of egg share donors – women undergoing IVF to have their own child and donating the excess eggs. The number of newly registered egg share donors has declined significantly since the law came into force from 504 in 2004 to 377 in 2008. In addition, treatment cycles with donated eggs steadily decreased from 1915 in 2004 to 1514 in 2007. Similarly, IVF treatment cycles with donated sperm steadily decreased from 939 in 2004 to 711 in 2007 and insemination treatment cycles with donor sperm decreased from 6892 in 2004 to 3878 in 2007.

The decrease in egg share donors and treatment cycles warrants concern. However, apart from the egg share donor numbers that began declining when the law came into effect in 2005, the numbers of treatment cycles have been declining since 2001. The earlier decline suggests that additional factors apart from the prohibition on anonymity restricted the number of treatment cycles. One factor that could have contributed to the earlier decline is the utilization of more effective fertility methods such as ICSI.

Although the available data is mixed, it raises concern regarding the effects of mandatory open identity donor systems on the availability of donor gametes. These concerns are reinforced by commentator and media reports which tie the prohibition on anonymity to the grave shortage in donor gametes in the United Kingdom. Reports point to wait lists of six months to two years for sperm and eighteen months to five years for eggs. One survey revealed that seventy


See, e.g., id.


The number of patients treated with donated sperm shows a similar decline from 743 in 2004 to 541 in 2007. Id. The decline does not appear to be a result of a general decline in the use of IVF because donor sperm treatments have declined from being 17% of all IVF treatments in 2004 to 9% of all IVF treatments in 2007. Id.

Id.

Turkmendag et al., supra note 23, at 294-97; Madeline Brindley, Mums Who Are Desperate for a Baby Join Give Hope Give Life Drive for Egg Donors, WESTERN MAIL, Nov. 17, 2008, at 22; Camber, supra note 128 (reporting that most clinics have a wait of at least two years for donor sperm); Jane Dreaper, IVF Donor Sperm Shortage Revealed, BBC
percent of fertility clinics in the United Kingdom either have no access to donor sperm or find it extremely difficult to obtain.\textsuperscript{135} Due to the scarcity, residents of the United Kingdom now seek donor gametes in other countries.\textsuperscript{136} Finally, the British Fertility Society, in a recent report, confirmed the media reports of the shortage in donor gametes, yet cautioned that the contribution of the prohibition on donor anonymity to the shortage is a matter of controversy.\textsuperscript{137} Overall, the data and shortage reports suggest that the prohibition on anonymity has played a role in creating the current crisis in gamete donors. However, other factors, particularly the prohibition on compensation for gamete donors, have most likely also played an important part in augmenting the shortage.\textsuperscript{138}

B. \textit{Reactions to Shortages in Donated Gametes}

The data on the availability of donor gametes in Sweden, Victoria, and the United Kingdom raises concern. The prohibition on donor gamete anonymity appears to have at least played a role, if not a major role, in the creation or enhancement of shortage in donor gametes. Reports of shortages and long waitlists are echoed in other jurisdictions in which anonymity of donor gamete was prohibited, such as the Netherlands and other Australian jurisdictions.\textsuperscript{139}


\footnote{135 Dreaper, supra note 134.}

\footnote{136 Id.}

\footnote{137 See British Fertility Soc’y, Working Party on Sperm Donation Services in the UK: Report and Recommendations, 11 HUM. FERTILITY 147, 148 (2008).}


The inhibition of the diffusion of donor gamete dependent ART resulting from shortage in donor gametes carries both individual and social ramifications. The scarcity of donor gametes extends the pain of infertility. Numerous studies record the psychological effects of infertility on both men and women. Infertility causes elevated levels of anxiety and depression, grief, anger, guilt and shock, or denial. Studies record statements underscoring the suffering that accompanies infertility:

“A lot of people don’t understand that infertility is very much like having a child die. You grieve for the baby who wasn’t conceived this month, and for all the babies you will never have.”

“We can’t conceive; my wife is depressed; I’m sick with disappointment; and I can’t do a thing about any of it. Nothing I have said or done has made a difference.”

“It is the end of the Bowes family and the Bowes Family name. It dies with us because of me. My husband is the last of the male children in his family . . . it is the death of a dream . . . .”

Beyond the individual psychological effects, the scarcity of donor gametes carries social implications. In Europe, birth rates are currently at a record low. European birth rates are consistently below two children per couple and in many countries revolve around 1.3 children per family. Commentators have...
noted that low birth rates will significantly affect pension funds and the work force as the number of elderly exceeds the number of young people. 145

The scarcity of donor gametes exacerbates the low birth rate problem and its consequent social implications because it impedes the ability of those who desire to conceive from achieving conception. Particularly, infertility and the need for donor gametes are more prevalent among older men and women. Studies have associated the low fertility rate in Europe with a substantial delay in childbearing. Hence, the scarcity of donor gametes presents an additional obstacle to resolving the low birth rate problem in Europe. 146

Faced with acute shortages, jurisdictions that prohibit gamete anonymity have been actively seeking solutions to enhance depleting donor gamete availability by changing their recruitment methods. ART providers found that donor recruitment in open identity systems is effective when efforts focus on a different group of donors than in anonymous systems. Anonymous donors are usually young students who donate for financial gain. These donors depend on anonymity and would not want to be contacted by offspring. 147 Identifiable sperm donors tend to be older, often married with children, and primarily motivated by compassion for infertile couples. 148 The age differences between prospective donors in an anonymous system and prospective donors in an open-identity system are quite profound. While anonymous donors’ ages are generally in the early- to mid-twenties, the age of identifiable donors tends to range from the mid-thirties to forty. 149

However, while sperm supplies can be at least partly supplemented by the sperm of older men, egg supplies cannot benefit from the same recruitment


147 Daniels & Lalos, supra note 103, at 1873; Ekerhovd et al., supra note 102, at 312; Tracy Hampton, Anonymity of Gamete Donations Debated, 294 JAMA 2681, 2681 (2010); Waldman, supra note 147, at 551-52.

strategy. The quality of eggs deteriorates rapidly with age and eggs of older women are more likely to result in miscarriage or produce a child with a chromosomal abnormality, such as Down Syndrome. Even the quality of eggs of women in their early thirties is inferior to that of eggs of women in their twenties. Hence, facilities recruiting egg donors cannot alter their recruitment policy to recruit older women as egg donors.

An alternative recruitment method to enhance both sperm and egg supplies focuses on compensation. Jurisdictions, such as the United Kingdom, that bar compensation have recently recognized that the prohibition on anonymity in conjunction with a prohibition on compensation results in severe gamete shortages. In the United Kingdom, it appears that despite the heated atmosphere following the prohibition on donor anonymity, the government does not intend to repeal its prohibition. At the same time, the government is now reconsidering its limitations on donor compensation in the hope of alleviating the shortage in donated gametes. While authorities and clinics are focusing on alternative recruitment methods, individuals residing in open-identity systems are resorting to using ART facilities in jurisdictions in which anonymity is maintained. Recipients of gamete donors are driven to fertility tourism mostly by long wait lists resulting from shortages in their countries but also, at times, by a desire not to have their child conceived by an identifiable donor. For example, Denmark, which has an anonymous donor system, has become a fertility sperm center for residents of neighboring countries in which donor anonymity is prohibited, such as Sweden, Switzerland, and the Netherlands. Similarly, since the change of law in the United Kingdom, British individuals have been seeking donor gametes in European countries that foster anonymous systems.

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150 See Frank J. Broekmans et al., Female Reproductive Ageing: Current Knowledge and Future Trends, 18 TRENDS IN ENDOCRINOLOGY & METABOLISM 1, 1 (2007); Heffner, supra note 146, at 1927-28.


152 Ekerhovd et al., supra note 102, at 306; Murphy, supra note 151.

153 Lizette Alvarez, Spreading Scandinavian Genes, Without Viking Boats, N.Y. TIMES ONLINE, Sep. 30, 2004, http://www.nytimes.com/2004/09/30/international/europe/30sperm.html; Murphy, supra note 151; see also Guido Pennings, Legal Harmonization and Reproductive Tourism in Europe, 19 HUM. REPROD. 2689, 2691 (2004); Roxburgh, supra note 139 (reporting that Belgian clinics near the border of the Netherlands noticed a steady increase in Dutch patients as a result of the new Dutch law prohibiting anonymous sperm donation).

154 Dreaper, supra note 134.
The threatened acute shortage in donor gametes is clearly an important consideration against the adoption of an open-identity system in the United States. Furthermore, it appears that the election of an open identity donor system affects not only the access to the practice of ART but also the nature of its practice. While commentators have acknowledged that choosing an open identity donor system promotes the value of identity over the privacy and procreative interests of the parents and donors, it is important also to critically evaluate the commitments eroded by efforts to compensate for shortages of donor gametes.

First, efforts to compensate for donor shortage enhance the inequality already inherent in the practice of ART. Use of ART is expensive, particularly in countries such as the United States in which use of ART is not subsidized by the government. In the United States, donor compensation is permitted and the cost of donor gametes particularly eggs is already high. A prohibition on anonymity could induce ART facilities to increase the compensation for gametes in order to lure donors inhibited by loss of anonymity. Hence, a recruitment tactic of raising compensation to offset the anonymity prohibition could further restrict access to ART and donor gametes only to those who are particularly well off.

Inequality is also enhanced by the resort to fertility tourism. Travel to other countries, which often needs to be repeated monthly until treatment is successful, further raises the costs of ART. In Europe, travel distances are relatively small because countries with open identity systems are immediately adjacent to other countries that foster anonymous systems. A prohibition on donor anonymity in the entire United States would require expensive long distance travel for those seeking donor gametes. This would again augment inequality and further restrict access to ART and donor gametes.

Second, countries committed to preventing commodification of the human body prohibit compensation for gamete donors. Jurisdictions that reconsider the prohibition on compensation to offset the effects of an open-identity system are in effect eroding their commitment to preventing commodification to enable the existence of an open identity system.


157 See Lisa Ikemoto, Reproductive Tourism: Equality Concerns in the Global Market for Fertility, 27 LAW & INEQ. 277, 302-08 (2009) (arguing that fertility tourism affects inequality, because as more industrialized countries prohibit anonymity, less developed countries will become the destinations of fertility tourism); see also Eric Blyth & Abigail Farrand, Reproductive Tourism: A Price Worth Paying for Reproductive Autonomy, 25 CRITICAL SOC. POL’Y 91 (2005).

158 On commodification generally, see MARGARET RADIN, CONTESTED COMMODITIES (1996).
Commentators have raised concerns regarding the effects on gamete donor supply and have acknowledged that the choice of an open-identity system promotes identity over privacy and procreational interests of donors and recipients. However, the in-depth analysis of the data in Sweden, Victoria, and the United Kingdom provides evidence of actual acute shortages threatening the diffusion of donor gamete dependent ART. Furthermore, the described efforts to combat these shortages underscore that additional values are at stake that should be balanced against the identity interests of the children. Efforts to combat shortages erode not only commitments to privacy and procreational interests but also commitments to equality and the prevention of commodification. While much research remains to be done to examine the advantages and harms of removing anonymity, the above discussion points to the need for great caution in endorsing the prohibition on anonymity in the United States and points to the need for more conservative measures, such as voluntary donor registries, to accommodate the identity interests of donor-conceived children instead of a mandatory prohibition on anonymity.

CONCLUSION

*Test Tube Families* provides an important contribution to the evaluation of the law and policy in the area of ART. Cahn exposes the weakness and partiality of the current regime and offers an elaborate proposal designed to create a comprehensive regulatory regime to govern the practice of ART. This Essay evaluated the suitability of adopting a comprehensive regulatory regime and assessed one of the centerpieces of Cahn’s proposal: the prohibition on donor gamete anonymity.

This Essay concluded that although a comprehensive regime could conflict with long-entrenched social norms, timing should not pose a significant problem for the successful implementation of this regime. It pointed to the existence of intermediaries – the medical profession – as a facilitating factor in changing current norms. This Essay then distinguished between two types of uncertainty a comprehensive technology-regulating regime can alleviate. In the case of ART, it concluded that a comprehensive regulatory regime would be particularly effective in dispelling uncertainty that currently entraps the users of ART in unanticipated life-devastating circumstances.

Finally, this Essay focused on the effects of the prohibition on donor anonymity on the diffusion of donor gamete dependent ART technologies.

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160 For proposals advocating a voluntary donor registry, see Benward et al., *supra* note 98, at 240, which advocates a donor registry but recognizes that such contact cannot be compelled and Nanette R. Elster & Andrea Braverman, *The Future Is Now: A Voluntary Gamete Donor Registry Is Feasible*, 12 DePaul J. Health Care L. 195 (2009), which discusses the broad support among the symposium participants for the creation of a voluntary registry.
through an analysis of the data in three representative jurisdictions that foster an open identity system. The review of the data revealed a disconcerting picture portraying dire shortages in gamete supplies accompanied by long wait-lists. Furthermore, it showed that efforts to counteract the effects of a prohibition on anonymity erode commitments to equality and the prevention of commodification. Hence, this Essay cautioned against the adoption of a mandatory prohibition on anonymity in the United States.