THE MAKING OF THE SPERM DONOR: CONSTRUCTING SCIENCE, MANAGING IDENTITY IN FIVE US CRYOBANKS

by

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Dedicated to
Ammi, this is our collective victory;
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ABSTRACT

What are the ways in which cryobanks construct and manage knowledge about the anonymous sperm donor? Through an ethnography of five US cryobanks, this dissertation examines the tension between scientific, marketing and legal narratives and the conflicting needs for identity erasure and remembering. The social construct of the donor is a pastiche of several voices, images and narratives drawn together at the interstices of science, technology, commerce, law, politics and morality. Whereas protection from disease and liability may serve the interest of recipients, donor-born offspring and cryobanks, and strengthen the case for the identification of the donor, some donors may not want to be identified because anonymity allows them freedom from an uncertain future. Cryobanks must, therefore, strategically manage conflicting claims regarding the need to know and need to protect donor information. This project examines the practical work that cryobanks put into the making and management of the donor's identity. Narratives of quality, risk, donation and altruism that accompany commercial semen exchange mask societal anxieties about the commodification of the body, sex work and anonymous sex as well as who is biologically and socially "fit" to reproduce. In the process, cryobanks also contribute to the framing and shaping of cultural discourse and practice around sexuality, masculinity, fatherhood, family structure, heredity, eugenics, commodification of the body and moral and ethical values.

I show that the donor's identity is never truly known nor truly forgotten. It is always partial and pieced in its construction, with some parts highlighted and others obscured at different times. Recipients may have differential access to these various aspects of the donor

depending upon how much they want to know and how much they are willing and able to spend. Knowledge, then, is also a commodity.

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CHAPTER 1

Introduction: Ways of Knowing the Sperm Donor

At a professional conference in the spring of 2010, I presented a paper on the challenges of donor anonymity in the current age of bioinformatics and genomics. I found that cryobanks were involved in the contradictory practice of both maintaining and undermining anonymity as they juggled the conflicting needs of donors, recipients, regulatory agencies as well as their own financial and business concerns. The cryobank directors at my talk shared that the maintenance of donor anonymity was complicated because some recipients and offspring sought identification while others did not. Similarly, some donors were more comfortable being identified than others. Directors claimed that they tried to accommodate the interests of all parties while ensuring that the interests of one group did not infringe upon the rights of another – an ambitious endeavour at times. "We are like sailors on an uncharted ocean trying to align the magnetic north with the true north," reflected one cryobank director. "We want to do the right thing, but the right thing is ambiguous." According to the director, cryobanks were expected to do "the right thing," to find the "true North," but there was no consensus even within the industry on what, in fact, was this true north or if it even existed.

Struggles for power were evident in the conflicting moral voices within the society – the voices of the many "custodians of morals" – as one cryobank director put it – such as the Catholic Church, policy makers, civil liberties unions, advocacy groups and other members of the society who, according to cryobank representatives, believed that their way was the correct way. Many of these custodians of morals challenged the authority of cryobanks by condemning the practice of artificial insemination. Cryobank directors perceived these various interest groups

as unwilling to engage in discussion or negotiate their positions. It was because of these resistant, powerful actors that artificial insemination had to historically remain secretive, with donor and recipient identities concealed from the public and from each other. Today, these voices of resistance are joined by other voices who want artificial insemination to be an overt process and donors, recipients and offspring to be identified to each other. For cryobanks, therefore, managing business needs dictates that they also manage the sometimes conflicting needs of donors, recipients and offspring regarding identification. Cryobank directors are further challenged by the fast-paced changes in information and genetic technologies, and regulatory law – the management and response to which go beyond their professional expertise as medical and technoscientific specialists.

My dissertation project demonstrates how one form of assisted reproduction – artificial insemination – becomes the site for struggles of power, profit, politics and morals in the process of managing societal anxieties about desired future offspring and, indeed, desired societal futures. As well as commercial institutions, with terms such as “bank” and “deposit” evoking comparisons with their financial counterparts, cryobanks are also important actors in the reproductive process because they contribute to the framing and shaping of cultural discourse and practice around sexuality, masculinity, fatherhood, family structure, heredity, eugenics, commodification of the body and moral and ethical values. By selecting certain classes of donors, and disciplining their bodies and behaviors, cryobanks are also participating in decisions about who is “fit” to reproduce. Moreover, cryobanks also manage societal anxieties about exchanging with strangers bodily fluids produced through a sexual act, for money. For example, any parallels with sex work and anonymous sex are minimized by taking sex out of the

reproductive process, allowing only certain expressions of sexuality within contained spaces such as collection rooms, and tabooing references to sex in language and jokes. Through the use of euphemistic language and selective narratives, cryobank representatives participate in reframing cultural interpretations of giving and receiving sperm. As many social scientists have observed, the popular use of the term sperm "donor" instead of sperm vendor or seller is an example of how prevalent and normalized this euphemism has become within and outside the cryobanking industry, so much so that it is even used in social scientific discourse. The language of the altruistic sperm donor who gives the gift of family to needy infertile individuals evokes narratives of sacrifice, rescue and salvation associated with Christian values and ideals. While I do not accept the term "donor" uncritically, I use it in my dissertation because it is emic to the language of my research participants. I discuss the language of donation and gifting further in chapters 4 and 5.

As social institutions that intersect with science, commerce, politics, and cultural values, cryobanks make for intriguing research sites. Yet, they have not been the subject of many anthropologically focused studies on assisted reproduction. Perhaps one reason for this dearth of analytical focus lies in their strict gatekeeping practices, which prevent access to many willing researchers. My own ethnographic fieldwork in five US cryobanks was the result of many months of persistent correspondence and personal visits, as I will discuss in my following chapter on research methods. Using cryobanks as the subject of my study, I discuss the role of regulation, marketing, science and imagination in the social construction of the sperm donor and his sperm. I find that much of the scholarly literature in bioethics, psychology, and law thus far has been engaged with the donor's identity as a moral and ethical issue. Should the donor be

identified to recipients and offspring? What are the consequences of concealing or revealing identity? In these debates, identification is associated with the 18 identifiers specified by the Health Insurance Portability and Accountability Act of 1996 (HIPAA[1]). But there is little examination of the actual practice of identity making and management. Clearly, the concealing of identity remains as important in cryobanking as the revealing of identity, given all the practical work cryobanks put into it. Cryobanks retrieve information about the donor based on regulatory agency requirements, recipient demands and their own administrative and procedural needs. This information is then selectively presented to regulatory agencies, recipients and offspring. My aim was to understand the processes of knowledge making in cryobanks. How is this knowledge culturally constructed as well as accessed by and projected to different participants in cryobanking: cryobank representatives, laboratory technicians and genetic counsellors, policymakers, recipients and donor-born offspring?

The figure of the sperm donor has occupied a controversial position in the public imaginary for many years. Desired for his precious fluid and feared for transmitting disease, his body and identity have lent themselves to scrutiny, control, expectation and imagination. Cryobank employees strategically accentuate certain aspects about the donor while concealing others so that knowledge of who he is always partial and pieced. Donors participate in this process by withholding from or sharing with cryobanks (and by extension, recipients) certain information about themselves. The sperm donor's desire to conceal his social identity is complicated by those who actively wish to know it for various purposes. Recipients and offspring may want to know the donor out of curiosity or a felt need or right to trace biological

[1] See Appendix II

heritage, especially in the event of a life threatening disease. Cryobanks must know the donor's identity to determine whether he is safe and reliable. They must also be able to maintain a link to him after he has left the program as they may be held legally accountable for him. From a legal perspective, a link to the donor's identity may be the only evidence that can exonerate cryobanks from culpability (see chapter 3 on donor anonymity). Therefore, the donor's identifiability is important for the protection of the cryobank's future. Paradoxically, donors may *not* want to be identified as anonymity allows them freedom from an uncertain future. The tension between anonymity and identity must, therefore, be strategically managed to attract and recruit donors into the program and yet also provide cryobanks protection from liability. This project explores the tensions between the conflicting needs for identity erasure and remembering. By comparing the public and private side of identity making and marketing in cryobanks, I show the kinds of discourses and practical work that go into the social construction of the sperm donor.

Organization of the Chapters

I have organized the dissertation chapters in a somewhat unconventional way in that I do not have an independent chapter on literature review. Rather, I provide a separate literature review for each chapter. Further, the reader does not need to read the dissertation from start to finish to understand the main arguments. While identity making and management are the common threads that link together all the chapters in the dissertation, each chapter can be read independently as a subsection of the identity making process. In the manner of cryobank practice, I begin by showing how donors and their sperm are stripped of old identity categories and move on to how they make new ones.

Chapter 2 pertains to my research methods. It provides an overview of the cryobank industry and the reasons behind my selecting cryobanks as a unit of ethnographic analysis. I discuss how I selected my field sites, my research design and methods, conceptual approach to fieldwork, constraints to my research and the strategies I chose to respond to them.

In chapter 3, I offer ways for anthropologists to re-theorize anonymity in the light of ethnographic evidence from my research. I argue that social scientific scholarship must move beyond ethical models of anonymity to show the kinds of practical work that it performs in everyday cryobank operations. While bioinformatics and genetic technologies have established the futility of deidentification, I find that anonymity in cryobanks serves a purpose beyond deidentification or reidentification. Anonymity serves a physical and temporal role in that gives the parties freedom from the future – whether in the form of responsibility, dependence, involvement or consequences. This freedom may be temporary as anonymity can be reversed (but not vice versa). As anonymity and accountability share an inverse relationship, donors cannot truly be anonymous. Cryobanks must maintain a link with donors to protect themselves from liability. There is considerable practical work that goes into concealing the donor's identifiable information – not just his name or numbers and other information attached to his name, but also his *face*. However, anonymity does not sever social relationships. Rather, it allows in the construction of very specific types of relationships at the level of the imagination, but also with the potential of being realized in the future.

Chapter 4 is in some ways an extension of Chapter 3, but shows the flipside of donor anonymity. Whereas in the previous chapter, I show how identity is concealed, in Chapter 4, I discuss how identity is managed and selectively revealed. Donors and recipients are discouraged

from establishing a face-to-face connection. Marketing practices conceal the donor's face by superimposing other faces or parts of faces on to the face of the donor (celebrity likenesses or likenesses of recipients and their families). The donor's public persona is an interplay between the imaginings, images, narratives and aspirations of donors, cryobank staff and recipients. I argue that while cryobanks share information about sperm donors with recipients, this information is partial and pieced and depends on the specific kinds of information cryobanks retrieve and as well as what donors share. Cryobank employees may subtly discipline and coach donors and recipients to respond in certain ways that do not threaten concealed aspects of the donor's identity. However, donors and recipients also exercise agency and do not always respond to cryobank policies in expected ways. As various aspects of the donor's identity may be kept separate with a price tag attached to each, recipients have varying access to the donor's information depending upon financial affordability. In the process, recipients and cryobanks construct notions of quality as well as hierarchies of socially valued donors.

Chapter 5 takes a closer look at the cryobank laboratory to see how biological categories are made and unmade in the light of social narratives about sperm and donors. I argue that sperm, though ritually separated and isolated from the donor's body to be tested, manipulated and evaluated as a biological specimen, is not completely dehumanized or disentangled from the donor. Cryobank lab technicians have varying degrees of knowledge about donors and evaluate sperm in the light of these multiple narratives. Lab technicians evaluate donors on their semen analysis results, infectious and genetic diseases test results, and medical records. Donors are also judged on their direct interactions with lab technicians, as well as from the second hand accounts of interactions with other cryobank staff. Lab technicians construct and classify sperm into

categories based on biological quality, but also administrative convenience and overall health of the donor. Some categories such as race/ ethnicity and gender are transferred directly from donor to sperm. As a result, sperm may be physically separated from the body of its donor, but it continues to carry his biological and social histories and narratives.

Finally, in Chapter 6, I examine the regulatory environment in which cryobanks operate and the ways in which they shape donor profiles. I argue that by excluding certain kinds of donors on the basis of their risk status, law becomes the site of discursive politics and hegemonic power. I show how the language of risk, quality assurance and compliance legitimates regulatory agencies and cryobanks to discipline the reproduction of sperm donors' behaviors, moralities, and identities through screening and testing. Regulatory decisions about appropriate and unacceptable donors reveal deeper anxieties about personal legacies and societal futures. Ultimately, the choice of who can or should be allowed to participate in reproduction also relays a message of the kind of society humankind envisions for its future.

An Anthropology of Cryobanks

Anthropology is about connections and relationships – how humans perceive themselves in relation to each other and to the world. From its earliest origins as a discipline, anthropology has been interested in the study of kinship, symbolism, human relationships to animals, places and deities. Human reproduction is the foundation for creating the possibilities for these various connections. Anthropologists have shown how assisted reproductive technologies add new configurations to conventional kinship models and blur the boundaries between nature and culture as well as organic and artificial (see for example, Strathern 1992a, 1992b; 2005; Ginsburg and Rapp 1991, 1995; Franklin 1997, 2003; Rapp 1999). Assisted reproductive

technologies lay bare the otherwise obscure processes of reproductive choices, making them more transparent and more open to scrutiny and comment. The criteria for choosing certain kinds of mates and desiring certain kinds of children, for example, may no longer appear as benign when reframed in terms of quality, fitness and social worth. As anthropologists have shown, and as I also show through my ethnographic research, new configurations of relating cannot completely escape older models. Many cryobank representatives, for example, *do* see categories of nature and culture, fictive and real as a dichotomy, and it is important for anthropologists to pay attention to these differences. While the language for describing new kin relations may be different, it is still based on conventional conceptual frameworks and social roles, which privilege biological and biogenetic ties.

Cryobanks operate within a moral economy, one that is driven as much by profit as by moral and ethical values of right and wrong. For example, cryobank representatives are selective in their choice of donors not only to demonstrate quality to their recipients, but also because they consider themselves ethically accountable to them on occasions when recipients have little opportunity to verify donor information. My research shows that cryobank representatives not only desire social relationships with donors and clients, but are also engaged in making decisions about appropriate, good and bad donors based on their personal interactions. Many donor coordinators, for example, were women and their selection of donors was partly based on their personal beliefs of a desirable partner. Even in the cryobank laboratory, medical technicians applied their cultural values, personal beliefs and ethical standards to their professional practices.

Cryobanks, Gender and Power

At one end, cryobanks have changed the cultural discourse around sex, reproduction and kinship by providing individuals and couples the option of building families in ways that were not previously possible or culturally acceptable. Yet, at the other end, cryobank directors and employees also reify existing social hierarchies of power and social and economic inequality by exercising disciplinary and hegemonic power in their selection and conditioning of donors (and in some cases, recipients). Through the marketing of sperm, cryobanks also market idea(l)s of men and masculinity. My research finds that social hierarchies of power are also visible in the gender and division of labor at cryobanks. At my field sites, women frequently occupied the lower and middle managerial positions although two of the five cryobanks I visited were owned and operated by women directors, catering mainly to lesbian women. Female employees often tended to be in service delivery positions as nurse practitioners, psychologists, genetic counselors, clerical staff at the front desk, donor coordinators, client services staff, phone operators, and marketing personnel. Other positions such as those of laboratory technicians comprised both men and women, mostly of East Asian descent. A few laboratory staff were Western European and one was African American. Men frequently occupied the upper managerial positions and tended to be physicians, IT specialists, chief executive officers and operations managers. Financial managers were also men at the time of my fieldwork, although I was informed that some of the previous financial managers had been female.

Lisa Moore (2007: 110) likens the dominant role of men in the operation and regulation of the cryobanking industry to surrogate fathers in the process of reproduction. “In this role,” she observes, “male prerogatives may have determined who may be a donor and who may not, which

social and genetic characteristics are most appropriate within the semen they sell and what the social relations of donors will be to the children produced with their 'donations.'" I do not agree completely with this position because in my experience, while men did dominate executive positions in the industry, women played major roles as gatekeepers in the decision making process of donor screening, recruitment, selection and marketing. Some male cryobank employees were of the opinion that women were deliberately chosen as marketing personnel to attract donors as it was female marketing personnel who frequently visited college campuses to hold donor recruitment seminars. Female sexuality was, therefore, used as a strategic tool to attract prospective heterosexual sperm donors.

Some male and female employees believed that men and women were socialized in different ways and men did not always feel comfortable talking to other men about their personal lives. Therefore, donors were likely to feel threatened when interviewed by women than by other men.[2] I question whether this "threat" of male-to-male communication also stems from a fear of making connections that may be considered gay? I find parallels to this fear of homosexuality in the selection of pornography. It was mainly female staff who selected pornographic videos and images for the donors. Pornography was always heterosexual male-oriented because gay men were usually not selected as sperm donors (as I will discuss in detail in Chapter 6). Gay male sexuality was seen as challenging both psychological and social sexual and gender order, and heterosexual masculinity was to keep a distance from it in order to maintain conventional gender

[2] This observation needs further examining because it points to gendered patterns of communication where men and women are perceived as having different ways of relating and different styles of communicating. The notion of masculinity and communication is also implied as men may feel difficulty in confessing intimate details about their relationships and personal lives to other men. However, if men and women have different communication styles, would gender not serve as a barrier to communication between male donors and female donor coordinators?

order.

During my fieldwork interviews, Moore's (2007) comment on the cryobank industry's male domination became a topic of conversation that revealed deeper structures of gender and power disparities not only in the field of cryobanking, but also in educational and professional disciplines. Some of the male cryobank directors responded with amusement at the thought of being surrogate fathers in the reproductive process. However, they agreed that the industry lacked women cryobank directors. It was not that women were deliberately excluded, they claimed. Rather, the problem lay in the ways reproduction-related professions were gendered, with more women embryologists than andrologists in the field[3]. Many cryobank directors began their career in the 1970s as physicians, pharmacists and medical technologists who had some knowledge of cryogenics. Several male directors admitted to chancing upon cryobanking after receiving requests from colleagues and friends to help cryogenically store sperm. One director reflecting on both his and his male colleagues' experiences stated, "We were all accidental tourists." Women cryobankers, on the other hand, were not accidental tourists. The women directors that I talked to revealed that their entry into the field was intentional and arose from necessity. Many women directors ventured into cryobanking to overcome the disadvantage that they faced in a society with heterosexual and heternormative values. Some women entered the field because they wanted children of their own and did not have or want male sexual partners. Others wanted to help women have children, especially single women and lesbian couples who

[3] Whether and to what extent gender or other factors inclined men and women to choose certain disciplines such as gynecology, embryology or andrology is a study of social scientific interest in its own right, and while it is beyond the scope of this dissertation, it would make an interesting topic for future research on the gendering of reproduction related disciplines.

were denied service elsewhere because of the stigma against women having children outside of heterosexual matrimony.

Social hierarchies of gender, power, sexual orientation, race and ethnicity and social class all manifested themselves in the business of cryobanking in various ways. There was not a lot of ethnic diversity among the upper level management who were mostly white men, and to a lesser extent, white women. Male and female cryobankers were nevertheless among the cultural elite, those who could afford education in professional schools and eventually go on to start their own businesses.

Anthropology and Beyond

Cryobanks are not the only isolated actors in the arena of reproduction. Their discourse and practice is part of larger cultural discourses on reproduction, parenthood, social roles and responsibilities and so forth. Cryobank operations are constrained to an extent by state agencies, private professional organizations, media, civil society organizations, religious institutions, recipients, donor-born offspring and members of the public, who all want to shape reproductive goals and determine who should be given the opportunity to reproduce. While my graduate research is limited and cannot ethnographically cover the scope of all the actors involved in assisting (or thwarting) reproduction, I see many future opportunities for anthropologists to explore these avenues. My research is informed by social scientific discourses on organ and tissue donation, tissue banking, adoption and other forms of assisted reproduction (e.g. egg donation, surrogacy). I hope that the results of my research may also inform research in these domains as well as disciplines outside the domain of the social sciences and science and technology studies, such as consumer behavior, bioethics and social studies of law.

CHAPTER 2

Research Methods

Cryobanks and the Dilemma of Studying "Up"

Forty years ago, Laura Nader (1969) prompted anthropologists to study "cultures of power" as well as "cultures of poverty." One could not hope to understand the views of those contesting power if one did not also examine their relationships with those in power, she claimed. Nader termed the exercise of studying institutions of power as "studying 'up'." She listed insurance companies, manufacturing corporations, government bureaucracies, regulatory agencies, banks, law firms, and realtors as some examples of studying "up" in capitalist economies. Today, this list crosses geographic barriers to encompass institutions on a transnational and multinational scale. Perhaps heeding Nader's advice, anthropology's analytical lens has also expanded to include institutions of relatively more power than the small-scale societies that have traditionally been the focus of the discipline (what Nader would call "studying down"). Anthropologists today study "up," "down" and "sideways" in terms of power dynamics, their scope ranging from remote hunter-gather and pastoral societies to the controversial human terrain systems both "at home" and abroad.

It is not clear to me whether my ethnography on cryobanks constitutes an example of studying "up." If power is understood as a relative and relational force that is often unevenly distributed, then certainly cryobanks do not enjoy absolute power in the industry, but are constrained by the discourse and actions of various other agents such as regulatory agencies, competitors, clients, donors, media, infertility groups, lawyers, courts and so forth. Yet, despite these various constraints, cryobanks exercise discretion in many aspects of their functions. They

are the final authority on the selection or rejection of men as sperm donors. They may even exercise discretion over their clientele and, sometimes, refuse to inseminate recipients they consider inappropriate mothers. In the process, cryobanks also mediate cultural values, at times reifying existing social hierarchies, at time challenging them. While they are commercial institutions occupied with financial profit and loss, they also contribute to new reconfigurations of familial relations, and fuel discourse on (in)fertility, family, gender and sexuality. Additionally, they provide social scientists, policy makers, and members of the media with raw material for discussing issues such as quality, risk, rights and responsibilities.

My own relationship with cryobank representatives constituted a varying range of power dynamics. I could not always control the kinds of conversations to which I was given access or from which I was excluded. There were times when I was denied access to meetings or not provided information cryobank representatives considered private and confidential. My ability to use research data and publish was also questioned and some cryobanks required me to sign confidentiality agreements before I began my fieldwork. In one case, the confidentiality agreement required several weeks of negotiations before consensus was reached about the appropriate legal language dictating how I could use or even publish institutional information.

This power dynamic altered somewhat as I sat down to write my dissertation. While cryobank representatives may have controlled how they framed and communicated information to me, ultimately, the ethical responsibility of representing them rested with me. I would, after all, be using their stories to serve my own purpose: fulfill my degree requirements and secure a job. Still, I did not have the absolute freedom to write. The privacy concerns of my research participants to whom I had primary ethical responsibility, and the social, political and legal

repercussions of my writings not only for me, but for cryobank representatives who shared with me acted as constraints, requiring me to reflect and discuss with close colleagues, peers and senior academics in my department how to present certain data to audiences external to my department. Nevertheless, I also consider my dissertation a work in progress, an outcome of collaboration with research participants even as I consider the kinds of narratives to eventually include or exclude. Cryobank directors and employees are as much a part of my target audience and critics as are other academic and nonacademic audiences, and contribute to corrections, revisions, and refinements of my analytical arguments.

Selection of Field Site and Initial Constraints

I conducted my ethnographic fieldwork at five cryobanks along the US east and west coasts between 2007 and 2009. Follow up clarifications and correspondence with cryobank directors continued until the finalization of my dissertation in 2012. My pre-dissertation research took place between April and August of 2006. I visited several cryobanks in the east and west coasts and the Midwest. My purpose was to inquire about prevailing issues and trends, and determine whether cryobank directors would allow a researcher on their premises. Initial data gathering involved generating contacts, compiling a list of key actors in the industry and understanding the organizational practices of various departments within cryobanks. As official surveys on the number of US cryobanks were lacking, I had to put together a list of existing institutions from various commercial web sites as well as web sites of regulatory agencies such as the FDA. Different sources reported a variety of institutions as cryobanks. For example, the

AATB web site listed only six accredited cryobanks[4]. A few consumer-oriented web sites such as "Spermbankdirectory.com" and Infertility Resources for Consumers listed between 14-35 cryobanks. Personal survey data from one cryobank director acknowledged the existence of 30 sperm banks. The Donor Sibling Registry (DSR) web site listed the greatest number of fertility centers with artificial insemination services – about 400 institutions – but these included independent cryobanks, university and hospital-based clinics, and other fertility centers[5]. According to the DSR, cryobanks existed in all US states with the exception of West Virginia and Mississippi. This variation in the numbers of listed cryobanks might be the result of the individual criteria of researchers who might categorize some organizational structures and service providers as cryobanks as opposed to others. A consequence of this disparity in counting is that cryobanks are not only difficult to define, but also difficult to regulate (Critser 1998).

I did not have any specific criteria in selecting a research site other than find a facility with a third-party donor program where I was allowed research access. The cryobanks that eventually became my field sites were privately owned and independent service providers. While some provided additional services such as oocyte, embryo and cord blood storage, and one cryobank even had a stem cell research lab, the major focus of these facilities was on the screening, testing, storage and marketing of semen, and the recruitment and testing of donors. Some cryobanks directly provided insemination services to their clients on premises. Others preferred to ship semen to the recipient's physician. My field sites varied in size ranging from one employing as many as a hundred employees to one operated by a nurse practitioner and the

[4] Refer to my chapter on law and cryobanking for a detailed analysis of the AATB and cryobanks.
[5] http://www.spermbankdirectory.com/newengland.htm; http://www.ihr.com/infertility/provider/spermbank.html; http://www.donorsiblingregistry.com/ListFacilities.php#USA [last accessed February 17, 2012].

practitioner's partner. All cryobanks claimed to be open to gay and lesbian[6] recipients, and three cryobanks were especially established to provide family building services to the gay and lesbian community and to single women as these groups were more likely to be discriminated against at some hospitals and fertility centers.

Initial Barriers to Accessibility

Over the past two decades, many cryobanks have adopted an online presence. However, I learned that online visibility did not always translate into accessibility, especially for a researcher who was neither donor nor recipient. Responses to my initial emails and phone calls were disappointingly few if at all. When making phone calls, automated voicemail options restricted my choices to pressing "1" if interested in becoming a donor or "2" if interested in becoming a recipient. Email seldom offered breakthroughs. Although some cryobanks now include the contact information of donor and client services staff on their web site, many continue to use generic addresses such as <info@nameofcryobank.com> to screen out unwanted individuals. As I learned during the course of my research, emails sent to generic addresses were checked by clerical staff who decided whether or not to respond to them or forward them to appropriate personnel. A few cryobank directors and employees used war analogies to describe the work of receptionists and front desk staff. Terms such as "battering ram," "being on the frontlines" and "getting hurt" revealed an adversarial relationship between cryobank employees and initial information seekers, where employees had to protect their "home base" from the infiltration of undesirables.

[6] I use the term "gay" and "lesbian" because those are the terms used by my research participants. In Chapter 6, where I discuss cryobank regulations, however, my use of the term "homosexual" reflects the language used by policy makers. All of these terms have historical political significance.

Cryobanks received several phone calls and emails from prospective donors and clients on a given day. Not all phone calls were of a serious nature and cryobank employees reported frustration with prank callers who joked about being paid for masturbating. Once, a group of fraternity members called in with one member jokingly inquiring, “How much is my cum worth?” Employees reported receiving correspondence from jail inmates, “crackheads,” and other undesirables in search of making quick money by selling their semen. Screening and gatekeeping were a necessary part of maintaining order by limiting access to those who appeared to threaten it. My initial cold calls and emails might have been filtered preventing my access to the top management. Understandably, cryobank executives and directors had to be shielded from unnecessary distraction as they were busy people with corporate meetings to attend, organizational goals to plan and execute, and stakeholders to satisfy. Nevertheless, in all but one case, I could not successfully contact directors until I personally visited the cryobank. Even with personal visits, I had to pass through many layers of gatekeeping staff and security devices: gates, guards, surveillance cameras, doors with combination locks, and doors requiring the swipe of an ID card. As I was not an employee, I had to have a staff member escort me past security. Once I started my fieldwork, some of the security staff became more accustomed to my daily presence and let me in after I identified myself. One cryobank required me to wear an identification badge with my name, university’s name, and department affiliation – reminders, that I was and always would be an outsider.

My preliminary data gathering visits proved to be expensive, but were more fruitful than my phone calls and emails, although I received mixed responses from cryobanks. Some cryobank directors were more responsive and supportive of my research than others. Those who

lent their support held the view that cryobanks were underrepresented in the media and there were many misunderstandings in the minds of the public about how the process of sperm donation actually worked. As one cryobank director put it, “We are erroneously seen as practicing some kind of rocket science.” Part of this misinformation also lay in the secrecy surrounding sperm banking for much of its history. As artificial insemination was a way to cover up male infertility, neither physicians nor infertile couples talked about it openly. Donor anonymity also contributed to an air of mystery about the insemination process. Moreover, some cryobank marketing strategies also contributed to misperceptions about genetic transfer of traits.

A few cryobank directors agreed that there needed to be research about cryobanks, but were not willing to allow a researcher onto their premises. Others refused to even grant me permission for an initial interview, saying they were “not interested”. During my field research, cryobank representatives informed that many cryobank directors were wary of journalists or researchers who could tarnish their image or breach the privacy and confidentiality of clients and donors. Trust building was a slow process and in some cases, I had to pass through some obstacles before I was allowed to do my fieldwork. I began my doctoral fieldwork in June 2007. The first part of my fieldwork ended in April 2008. I conducted some follow up interviews in 2009 and remained in correspondence with cryobank directors during the remainder of my dissertation writing, requesting clarification of previous statements and concepts as needed.

Privacy Related Constraints: IRB Requirements and Cryobank Confidentiality Agreements

As my work dealt with human subjects, a major concern was finding effective ways to ethically do research while maintaining the privacy of my research participants and satisfying the

requirements of my university's Institutional Review Board (IRB). Cryobanks were also concerned with privacy. Specifically, cryobank directors and employees feared the disclosure of identifying and recipient privacy, and leakage of company trade secrets. I had to assure and reassure them many times during my research that trade secrets and proprietary information were far from the subject of my focus. I was interested in the social construction of the sperm donor. I wanted to follow the process of sperm donation from beginning to end – the criteria used to discuss, screen, test, evaluate, select or reject donors and their sperm. The probability of loss of privacy was low because the research data presented to me was already deidentified. Nevertheless, there were occasions during the course of my fieldwork when I chanced upon personal identifiers. For example, during meetings between cryobank staff and donors, donors would disclose personal information such as names, locations, dates of birth, schools, and so forth. In such cases, I would not document any personal identifiers, and keep my categories as generic as possible e.g. "Donor 1, age 21, college student, technical college."

Over a period of time, I was able to establish some degree of trust with the directors and staff to the extent where some of them felt comfortable enough to share their standard operating procedures and other proprietary information with me with the understanding that I would not share or publish without permission. Some cryobanks required me to sign non-disclosure agreements in order to safeguard their proprietary information. Others settled for verbal agreements of privacy protection. The language in non-disclosure agreements also varied in its severity. One cryobank sought the right to consultation and approval before I published any work. With the help of a legal adviser at the UW-Madison Law School, it took two months of negotiations until we reached a language, which was less restrictive and which allowed the

cryobank to “review” and “comment,” on my work, but to exclude the word “approve” from the agreement. With written formalities out of the way, I was now ready to begin my fieldwork.

Of Multisites and Multilocalities

I chose a multisited approach to fieldwork because of two reasons: financial and time constraints. Although I was fortunate enough to secure two small grants, I had to pay for most of my living expenses out of pocket – not easy for a graduate student on a shoestring budget. As cryobanks were located in big cities near sizable donor populations, living expenses were especially high. Additionally, I had to work within the timeframe that cryobank directors could accommodate me. As directors traveled frequently and were busy with several engagements, my work schedule depended on their availability. I was allowed to do my research only as long as they were personally present for supervision.

As I conducted my fieldwork at more than one research site, a multisited approach proved helpful because it enabled the cross checking of information with multiple sources, observing consistent patterns and inquiring into inconsistencies. Although cryobank directors moved around in similar social circles and followed the same regulations, cryobank practices also varied from one institution to another depending upon their specific experiences with donors and clients. A multisited approach gave me the advantage of experiencing the diversity of operations in different settings as well as the opportunity for a comparative analysis that I would have missed if I was restricted to a single field site.

One may ask what constitutes “the field,” since even in the most conventional projects fieldwork crosses many potentially related sites of work (Marcus 1995). Even Malinowski adopted a multilocal approach as he followed the *kula* ring around the Trobriand Islands. The

boundaries of the "field" may become more restricted and defined as anthropologists narrow their focus on the object of study, but for many 21st century anthropologists, the notion of the field is perpetually transient and on the move (Hannerz 2003). The challenges of transnational communities and modes of communication, for example, necessitate new forms of cultural critique and political ideologies of evaluation, and call for flexibility, mobility and comparative dimensions (Marcus 1995).

My field sites, though spread across different North American locales, were connected by a common cultural thread in that my research participants shared a similar cultural context. A comparison of cultural and social beliefs and practices helped put together a more holistic picture of cryobanks even though this picture was by no means complete. Then again, fieldwork rarely is complete and researchers are always working with partial understandings of localized experiences. Classic ethnographies often described the dependence of the traveling anthropologist on the in-depth cultural knowledge of the relatively rooted native. On the other hand, few of the "natives" in my research had been in the cryobanking business long enough to have a complete understanding of its operations. Employee turnover was especially high among the first line of management. Some of the employee appointments averaged between a few months to two or three years. The turnover rate was relatively lower among senior management and some had spent several years at the same cryobank. Many employees worked in specialized positions, which meant that their expertise was restricted to their particular domains. Some cryobanks rotated their lower and middle level staff between various departments to give them a more well-rounded experience of business operations. Still, only cryobank directors seemed to have the most knowledge about the industry. However, there were aspects of cryobanking where

even directors were not fully certain such as the intricacies of regulatory requirements. At times, my questions on regulations elicited uncertain answers from cryobank directors, prompting them to consult other colleagues and regulatory agencies. Through these experiences, I learned that even the expert knowledge of cryobank directors was partial, pieced, and produced through an ongoing process in which I, as an ethnographer, also participated and contributed. Our conversations and dialogues were a learning experience for all of us.

Participant Observation

I did not expect to "go native" or be adopted as an insider by the cryobank staff. There were, in fact, times I was acutely aware of my outsider status. For example, I was not allowed access to internal meetings. A few times, I learned that important managerial and staff meetings were held after I left for the day. The nature of my work – sitting in the offices of formally structured settings of business organizations, watching people work at their desks on computers and telephones, and in lab settings handling sensitive biohazardous material – also considerably limited my ability to be a participant observer on many occasions. Cryobank privacy and confidentiality restrictions also prevented my direct interaction with donors and recipients. Rather than participant observation, I strove for observant participation in my ethnographic encounter. I understand observant participation in the context of Moeran's (2007: 14) description of the ability of the fieldworker to establish intimacy and trust with one's informants so that she is able to cross the "invisible line separating front stage from back stage" and "learns to separate fact from fiction, gossip from information, while strategically using both to gain further (more reliable) data. The sheer wealth of information, criticism and commentary that is made available by informants leads to further intimacy and spurs holistic analysis."

I found that being honest and forthright about my research agenda helped build trust to some extent and allowed some of my research participants to be more comfortable sharing with me. Realistically speaking, I had to accept that not everybody was ready to trust or share intimate details of their work with me. Levels of intimacy varied depending upon the personality of individuals, but I noticed that a few of the department heads – significantly men – remained guarded in the information they gave me, measuring their words carefully. Then again, knowing that their words were being audio recorded and could potentially harm them may have deterred their ability to share. Privacy assurances on my part did not always appease these fears. I did not see my role as one of separating fact from fiction, but as one of trying to understand the possible motivations behind being told a particular story in a certain way. What sorts of issues or concerns did the language and choice of words reveal? How were other versions of the story told and by whom? What kinds of values did these narratives, gossip, jokes, and critiques draw upon? If an incident occurred at the cryobank, I would try to get as many different accounts as possible from various personnel. Gossip, narratives, facts, fictions, euphemisms, silence were all important to me.

My observations of meetings between cryobank staff, donors and recipients gave me the opportunity to observe their interactions as well as the ways in which cryobank employees explained and elicited consent from donors and recipients. I also had the opportunity to attend presentations and informational sessions for newly recruited employees, and a donor recruitment seminar near a college campus. Rotations every few days between cryobank departments (genetics, marketing, donor coordination, client affairs, laboratory, front desk, and director's office) also presented the occasion for observing the "imponderibilia" of everyday affairs. The

cryobank laboratory was one site where I could engage in both participation and observation. I learnt how to observe sperm under a microscope and perform sperm count, motility, and morphology tests. One cryobank director would test my knowledge of donor eligibility criteria from time to time by asking me to evaluate deidentified donor profiles. It was his way of appraising my knowledge of the procedures he and other employees had taught me at the facility. He would then match my evaluations against his own, and we used the opportunity to discuss regulatory issues as well as social, moral, and political issues around donor eligibility.

As my field site was limited to business settings, it was not always easy to observe the personal opinions and expressed beliefs of cryobank staff outside of the office. I wondered if employees withheld strong personal statements and moral judgments at work for fear of sounding unprofessional. Fortunately, there were designated spaces at the office, such as kitchens and lunchrooms, where employees could talk more informally. Lunchtime and coffee breaks also allowed personnel to convene and converse over food. Sometimes, I would conduct interviews at nearby restaurants and coffee shops to make them appear more informal and relaxed. I found that when I structured formal interviews immediately before lunch, there were higher chances that they would extend more informally into discussions over lunch. This strategy proved especially successful with top level managers who were comparatively more reserved in their statements when they were in official work spaces. Evening socials (e.g. dinners, birthday party celebrations and happy hour gatherings at the local bar) were meant to serve as a respite from work, but conversations about work would often sneak back on topic, hence I used some of these occasions to follow up on the outcome of specific events that had happened during the course of the day.

Car conversations provided another opportunity for a more relaxed discursive

environment. On a few occasions, cryobank directors and employees generously drove me to and from the train or bus station to the cryobank or to my hostel. Conversations became a lot more candid and reflective during the journey and opinions became less guarded. For example, one cryobank director drove me across state one afternoon to drop me back at my hostel on the way to another branch of his cryobank in the same city. With his permission, I recorded the conversation between us, which lasted well over an hour. The road trip provided a deeper insight into his life and family, his personal philosophies, future goals and even musings on death and how he foresaw the future of his cryobank after he retired or passed away. All occasions provided the opportunity to gain insight into the ideas and opinions of cryobank personnel. In addition to participation and observation, I also employed the following methods in my research:

Email

Email and online systems of communication proved especially helpful when I needed short answers to specific questions or web site references to particular regulations. Email correspondence was not a substitute for participant observation, but helped to complement my research methods by providing a historical record of written correspondence, especially with the upper management of cryobanks and regulatory agencies. While negotiating confidentiality agreements with cryobanks, email was a quick and easy way to connect disparate parties in far off locations (i.e. cryobank directors, legal advisers at the university and myself). Email allowed me to submit my research proposal and interview protocol to cryobank directors ahead of time, enabling them to better prepare for the kinds of questions they would be expected to answer.

My correspondence with regulatory agencies such as the CDC, FDA, ASRM, and AATB as well as New York and California health department was also made possible by email. My

questions for regulatory agencies related mainly to specific regulations, standards, and guidelines and where I could access them. The disadvantage of email was that I could not discuss lengthy matters, which required reflection and critique, so I reserved these for telephone and in-person conversations.

Fieldnotes and Diary

> "…The very thought of fieldnotes is, 'fraught with emotion…both in the field and later.' Fieldnotes may 'reveal the kind of person you are.' Their existence summons up feelings of professional and personal competence and obligation." Sanjek (1990: 34)

When I read my fieldnotes, I am reminded of the anxieties I faced in the field. I wondered how I would ever be able to capture and translate the complex richness of all that I experienced and represent it in text form. In my research methods class at the university, I had marveled at the copious fieldnotes of my discipline's predecessors: Malinowski, Boas, Evans-Pritchard, Mead, Powdermaker, Geertz, Rabinow and many others. The eloquent fieldnotes and personal diaries of these anthropologists were replete with thick descriptions of the worlds they encountered, and complete enough to be published on their own. My own fieldnotes by comparison were running logs, crammed with scribblings of people, events, places, keywords, contacts, jottings, with reminders scrawled in the margins of the notebook pointing to possible analytical routes that I could take when I eventually found a way to organize the material. While, I did not keep a separate logbook (to minimize items on hand), I maintained two notebooks: one to record my personal thoughts and reflections and the other to record my encounters in the field. After two incidents of theft in my dormitory, I slept with my notebook and digital recorder under my pillow, reaching for them first thing in the morning upon awaking. I am amused as I recall the fear and

paranoia of losing these treasured items – of value perhaps to no one else in the dorm other than me.

My fieldnote diary is a testament to the chaos and displacement I felt within myself and around myself as I struggled to adjust to my living conditions and the fast pace of travel from foot to bus to train to subway to cab back and forth from my field sites. Living on a limited budget meant foregoing the comforts of privacy. I stayed at various youth hostels for the duration of my fieldwork with six to nine backpackers in my dormitory at any given time. I would return from my long day of travel and work to find the common rooms in the hostel teeming with tourists eating, laughing, chatting, and playing board games amid the loud blaring of television or hip-hop music. Quiet reflection and privacy were a lost cause in such an environment. Before returning to my hostel, I would sit for a few hours in a coffee shop or restaurant to gather my thoughts from the day and combine my daily jottings – what Sanjek (1990:96) refers to as "scratch notes" and "head notes" to produce a more coherent form of writing. On the occasions when I returned home late in the evening, after most coffee shops had closed, I had no choice but to brave the crowded common room or sit in a relatively quieter spot in the hallway. A pair of earplugs saved the day on several occasions. Despite my vow not to sleep before finishing my fieldnotes, there were a few occasions when overwhelming exhaustion took over and I pushed writing to the next day – regrettably so – for human memory is not a stout recording device. I experimented with recording fieldnotes by speaking into my digital recorder on the way home in the train or on occasions where I did not have other people around me. The advantage of having audio recordings was that they also captured surrounding noises, which acted as memory triggers during transcriptions. Lack of privacy served as a hindrance to audio recording. I did not feel

comfortable talking about details of my fieldwork into a recorder when there were people in my personal space. More audio recordings also meant more transcriptions. In the end, nothing was a substitute for writing.

Fieldnotes were an expansion of my daily jottings. Daily jottings were usually written on the spot or soon after an incident or event and simply consisted of a description of what I saw and did throughout the day with no analysis. I would record my reactions in the margins and expand upon them later in the day as I reflected on them in my fieldnotes and personal journal. As much as I tried to create an artificial boundary by separating my fieldnotes from my personal reflections, they merged and overlapped in the days nearing the end of my research. My note pad and pen remained at hand at all times. During conversations, I would pull them out, ask permission and begin writing. My status as a researcher was clear to both my informants and to myself. I did not expect to "blend in" and be part of the organization (although I wished I did for greater accessibility) so if an event called for note taking, I did not hesitate to request permission to write. Cryobank directors rarely objected to my note taking. In the event that they did object, they would tell me and I would stop writing. I would, however, include the information in my "head notes." Cryobank employees were more concerned than directors about what I wrote especially when the issue related to interpersonal conflicts. Recently recruited employees were also worried about the consequences of accidentally misinforming me. Some asked to see my notes. Others asked not to be directly quoted. I experimented with different ways to encrypt parts of my private conversations with employees, using my native language, Urdu, as an encryption tool as it was not understood at any of my research sites.

At times, it was not possible to take written notes. Some of the most interesting and

revealing conversations took place when I put my notebook away. Head notes substituted for fieldnotes on such occasions. I would arrange my head notes in the form of a story for easy recall as I later wrote up my fieldnotes. For example, what was the theme of the story? What was the plot? Who were the characters? Where did the conflict lie? I would then remember keywords and string the first syllable of each keyword into a mental mnemonic that I would then recall when I wrote out my fieldnotes. Where permitted, I would follow up with informants and ask them to repeat the same story, this time on record. I often found that the audio-recorded version of the story would be more cautiously and carefully worded than the unrecorded one. I documented both versions in my records.

Interviews

I conducted 154 in-depth, open-ended, semi-structured interviews with 40 cryobank employees. Interviews were a useful way of gaining access to perceptions and introspections that mere observations did not capture. Using a linguistic focus, I wanted to examine the values, beliefs and motivations behind the evaluations of donors and recipients. My goal was to identify commonly occurring patterns and themes in the responses, which would allow me to make theoretical claims. I used a semi-structured interview protocol because I wanted to ensure that I covered the topics pertaining to my research questions. Yet, I also wanted to leave the interview open-ended to allow the conversation to flow in new directions that my respondents considered important. I divided my questions according to institutional and individual persona-centered questions. The former were more profession-oriented questions while the latter focused on the personal histories of the respondents. As personal and professional histories were often intertwined, answers flowed back and forth between the two domains. The general format of the

interview protocol began with open-ended questions about the respondent's professional background and involvement with cryobanking. I usually began with an open-ended question such as, "Can you tell me about yourself and how you became affiliated with cryobanking?" Such questions often elicited answers that also drew upon the respondent's personal life. For example, two directors related that they became involved in cryobanking because they identified as gay and lesbian and wanted to have children of their own. They also worked with gay and lesbian couples who faced similar dilemmas, but were discriminated against and denied access to fertility services in the community.

Other open-ended questions pertained to everyday life at the cryobank. I would ask respondents to describe their daily activities and challenges, as well as unusual incidents or conflicts and their resolutions. I would move from open-ended questions to more specific questions during the course of the interview. I would let individuals speak for as long as they wanted, making mental notes and writing keywords for follow up alongside the audio recording. I would pay particular attention to instances in the interview where respondents seemed especially interested or passionate or if they mentioned a concept which required further clarification. I would go back to these topics and probe further: "You mentioned that donors should not be anonymous. Why do you think that?" or "You will not accept clients above age 50, but you accept older donors. Why is this?" I tried to use identical wording in my questions to ensure some degree of comparability. However, the open-endedness allowed possibilities for conversations to drift into entirely new domains.

Each day presented new challenges at the cryobank. New incidents would instigate discussions of larger social, political and moral issues. I would use these incidents as

opportunities to ask questions to those who had witnessed or heard about them. For example, once I was sitting in the director's office when the nurse practitioner came in. She was visibly frustrated because a 47-year old woman wanted to be inseminated, but was not willing to have the nurse practitioner (NP) perform a physical exam on her. According to the NP, the woman had not had a pelvic exam in ten years and it was irresponsible to inseminate her even if she offered payment. I observed the conversation between the NP and director, and interviewed them both to gain more insight about their decision to not inseminate the woman. I used this incident to pose further questions to the cryobank director and employees about women, age, responsibility, and cryobank intervention: What was the cryobank's responsibility to its clients? Did financial payment for insemination absolve the cryobank's responsibility in any way? Could cryobank employees refuse services if they thought the woman was "too old" to bear children? Did cryobank employees determine recipient eligibility like they determined donor eligibility and the reasons behind their decision?

Sometimes, I used real and hypothetical cases based on prevailing news and media stories to generate discussion. For example, during my research at one cryobank, the story of the Yearning for Zion Ranch in West Texas emerged in the media. The ranch, which was raided by state authorities on suspicion of housing abused juveniles, was later discovered to have 700 residents, 416 of them children fathered by one man. The court arrested the man and his wives and took custody of the children[7]. As newscasters discussed several versions of the story on various television channels, and debated on marriage, polygamy, morality, children's rights,

[7] A complete story can be found at: http://en.wikipedia.org/wiki/YFZ_Ranch [last accessed February 17, 2012]

women's rights, I decided to extend the debate into the domain of sperm donation. Was it possible for a sperm donor to father hundreds of children, as many newspaper stories claimed? Did children have the right to know their donor's identity? Should sperm donors have a responsibility towards children born from their sperm? Should sperm donors be anonymous? What were the actual chances of unwitting donor sibling incest? Could a sexual relationship between donor siblings be called incest if neither party was aware about it? Would it be incestual for a daughter to carry her mother's eggs as a gestational surrogate and for a mother to want to be inseminated with her dead son's sperm even though there was no sexual relationship? Such questions were meant to clarify definitions and meanings (e.g. how did cryobank employees understand incest), provoke strong moral responses and serve as evidence of how culture acted as a constraining factor even as fertility procedures resulted in new familial configurations.

While my interviews focused mainly on cryobank staff who dealt directly with recipients, donors, and sperm, I also interviewed financial and IT managers, operations managers, and other technical and administrative support staff to understand quality assurance procedures as well as understand their views on affiliation with cryobanks. How did they view fatherhood and sperm donation? Would they ever consider being a donor (if male) if they had the opportunity and the reasons why or why not? Ethically and morally charged interview questions were good topics to initiate informal focus group discussions, especially when respondents shared a working space where privacy was not possible.

Recording Interviews

I carried two recording devices with me in case of technical difficulties, and digitally record all my interviews, which I fully transcribed later. Detailed note taking during interviews

interrupted eye contact and proved to be distracting for both the respondent and myself. It also hindered the interview because interviewees felt obliged to stop to allow me to finish writing my notes. I decided to write down key points and short phrases in my notes, which I expanded upon in later that day after returning to my hostel. Relying heavily on technology risked the possibility of a lost interview in case the technology failed, although the presence of two recorders lessened the chances of such failure. Still, there were drawbacks such as the odd undecipherable word slurred or drowned out by background noise. Most of the recorded interviews were over an hour long. Others were shorter in length ranging from two to forty minutes. The shorter two or five minute interviews mainly consist of answers to clarification-oriented questions. There were noticeable differences in the ways some employees adjusted their language in the presence and absence of a recording. As much as I wanted to place the recording device as inconspicuously as possible, both the interviewee and I were aware of it, and the probability of self-censoring remained higher than in the absence of taking notes or recording. Although newer employees were more uncomfortable with going on record for fear of saying something that would jeopardize their job, there were times when senior employees also preferred to speak "off the record."

Consent

Although written consent was elicited from research participants at the beginning of the interview, I always asked verbal permission before recording. Respondents had the freedom to tell me to stop recording or mention to me if something was "off the record." From the point of view of my research, such moments of conflict and hesitancy were important because they revealed more about cultural beliefs and practices than rehearsed speeches. My ethical dilemma

lay in how I would use “off the record information.” Depending on the relevance of the information for my dissertation, I would not use direct quotes from the individual, paraphrasing instead, the main idea of the quote and generalizing the profession of the source to make individuals non-identifiable.

For the sake of donor and client privacy, I was not permitted to record the details of meetings between them and cryobank employees so I elicited oral consent from all parties before taking notes. Before I was allowed into the room where client-staff consultations were taking place, the director or employee would describe my project to the donor or client, explaining that I was an independent researcher who was not affiliated with the cryobank and their refusal to participate would not affect their treatment in any way. Donors and recipients could ask me to leave at any time if they felt uncomfortable with my presence. When the donor or client consultation was over the phone, the director elicited oral consent before putting them on speakerphone. Only one recipient did not want me to sit in on a consultation meeting. In another instance, I hesitated to approach a visibly upset and grieving family whose minor son had advanced cancer. Client services staff also advised that I allow the family privacy. For the most part, donors and clients did not have a problem with my sitting in and observing. I would usually sit in a corner or position myself strategically to the side or behind donors or clients so that my note taking would not cause unnecessary interruption in the conversation.

Interviews and Power Dynamics

My perceptions of studying “up” varied in relation to the position of cryobank staff. After overcoming numerous obstacles to reach cryobank directors for interviews, I often found myself overcome with awe and gratitude as I sat in the waiting room nervously anticipating my

meetings. This sense of awe, I realized, was directly proportional to the position of the individual in the managerial hierarchy. During my predissertation interviews with the upper management, I often struggled to overcome the “halo” effect. Cryobank directors were dynamic, articulate and charismatic individuals with many years of knowledge and expertise in their field. I felt obliged and grateful for their generosity, time and patience. One cryobank director spent several hours talking to me even though I did not have a prior appointment with him. He not only invited me to lunch (which he paid for), but spent the next four hours explaining the history and current issues facing the industry. During the course of my dissertation research, I had many personal gestures of kindness extended towards me. For example, one cryobank director would personally drive me to and from the train station for the duration of my two and a half weeks there. Several cryobank directors and employees offered their home as a possible residential option when I was having accommodation problems. I was invited for dinner to the homes of a few cryobank directors and employees and introduced to their families. The blurring of personal and professional boundaries and the presence of strong personalities clearly more knowledgeable than me presented the dilemma of obligation. I struggled not to succumb to the “halo effect.” According to Thomas (1995), the halo effect is a common experience many researchers face, which misleads them to uncritically accept the very paradigms they are meant to appraise. Following his advice, I tried to adopt a sense of detachment from my research participants by separating personal and professional roles and relationships and becoming better acquainted with their habits, styles of dress and rituals of interaction. Audio recording my interviews also helped because I had the opportunity to listen after acquiring physical and emotional distance from the “field.” Listening repeatedly to the recordings also allowed better understanding of people’s

conversation styles and habits.

Having a semi-structured interview protocol also helped me retain some sense of control. At times, it was difficult not to have the conversation steer into a direction that the respondent wanted. For example, one cryobank director who was also a pathologist by profession enjoyed discussing the molecular structures of bacteria and viruses for extended periods at a time. I was fascinated by his depth of biomedical knowledge and interested in learning more, but my limited time with him forced me to find ways to bring the conversation back on topic. I would wait for a pause in the conversation before interjecting with, "How did the discovery of HIV/ AIDS in semen affect the operations of *your* cryobank?" Having a pre-planned semi-structured interview protocol reminded me of the questions I needed to ask even as I allowed the conversation to flow freely in new directions.

Gender, age and the professional position and status of the individual also contributed to the power dynamics of the interview sessions. Although my interviews with senior male directors tended to be relatively more scripted because I had limited amount of time with them, in retrospect, I also question whether my cultural upbringing as a woman in a patriarchal South Asian society also influenced my notions of maintaining a respectful formality with older men in positions of power and authority. Without this perception of hierarchical authority – magnified by gender and age – I found myself at relatively more ease when talking to members of both sexes.

I consider the participants in my study as co-creators of knowledge. They chose what to share with me, how to present what they shared and what to omit. I would share my inferences and analyses with them, often hypothesizing aloud during our conversations hoping they would

provide a “reality check” for accuracy. Many of my respondents had limited exposure to ethnographic literature and were curious to read anthropological accounts on reproductive medicine. Our interviews and discussions were, therefore, a collective learning experience.

A Note on Coding

In 2009, I conducted follow up interviews targeted at clarifying questions and concepts from previous conversations. These interviews were then thematically coded and indexed with the help of ATLAS.ti6, using techniques from grounded theory. I preferred Atlas.ti to NVivo for my data coding as Atlas.ti provided me with the option of analyzing both text and graphics. I transcribed all interviews manually and imported them on the Atlas.ti coding software. Data were coded using grounded theory techniques in that primary codes were generated from repeated words, themes and concepts in the actual text of the interviews, fieldnotes, electronic correspondence, promotional material, news articles and other primary and secondary data. I made separate notes on how I defined various codes. Some codes were already defined in my interviews. For example, in an interview with a donor coordinator on donor selection criteria, the donor coordinator listed emotional maturity as an important quality in sperm donors. In my next interview question, I asked the donor coordinator what the term emotional maturity meant to her. Next, I searched other interviews to see whether other cryobank employees used the term “maturity” as criteria in donor screening. I would then make “maturity” a subcategory under the umbrella category of “donor eligibility – social,” where I use the category of “social” to differentiate from biological eligibility criteria such as infectious and genetic disease screening. My initial analysis of data consisted of line by line coding and generating as many specific, narrowly defined codes from the actual texts that I considered significant. These codes were then

further categorized into broader themes and recoded using my own categories.

Content Analysis

In addition to ethnographic interviews and observations, I examined the content of cryobank web sites as well as promotional materials such as brochures, reports, donor catalogs, and profiles. I studied online account opening forms for recipients detailing how to order and use sperm vials for home inseminations, how to detect ovulation, and time insemination. To me such information revealed the social messages women were given about their choices, roles and responsibilities about fertility, motherhood and agency. Similarly, I observed how cryobank web sites invited men to become sperm donors. I wanted to see how information about the donation process was presented to prospective donors. What was included in and omitted from brochures and web sites about donor eligibility criteria? What types of information were men asked to reveal about themselves in online questionnaires? What kinds of questions were repeatedly asked at various stages of the donation process and why? Were different types of donors asked different kinds of questions? I compared anonymous donor, directed donor and client depositors forms to compare similarities or differences in language, which revealed deeper underlying issues relating to relationship and identity as well as masculinity and sexuality.

Some cryobanks kept records of their print advertisements over the years and were willing to share copies with me. When seen in an historical perspective, the advertisements revealed the increasingly sophisticated use of euphemisms to market donor sperm. Some cryobanks kept marketing dossiers, which included publicity and promotional materials such as press releases, presentations, handouts, donor essays, staff impressions of donors, donor profiles, and professional evaluations. Some cryobank directors shared standard operating procedures, lab

analysis reports and other quality assurance protocols. Legal contracts, tax forms, consent forms, medical and genetic history forms and professional evaluations of donors by psychologists and comprised additional sources of information.

Sources of secondary data included media stories, public blogs, online forums and message boards on sperm donation as well as articles in magazines such as Conceive and Pregnancy to understand representations of sperm donation in popular culture. Cryobanks frequently advertised in such magazines[8]. Other sources of secondary data comprised official web sites of regulatory agencies such as the Food and Drug Authority (FDA), American Society for Reproductive Medicine (ASRM), American Association for Tissue Banks, Society for Assisted Reproductive Technologies, Center for Disease Control and the health departments of the state of New York, Maryland and California (as these three states have specific regulations on the regulation of human tissue transfer, including human sperm). While reading the history of the FDA's involvement with cryobanks, for example, I searched the agency's web sites to see if it had issued warning letters to any cryobanks after inspection. Additionally, online databases such as JSTOR, Lexis-Nexis, ProQuest and PubMed/Medline were helpful for accessing scholarly articles.

Professional Conferences, Seminars and Presentations

Professional conferences, seminars and presentations provided an opportunity to meet otherwise inaccessible policymakers and professionals. For example, I attended two AATB

[8] For example see: http://www.scienceforums.net/forum/showthread.php?t=7001; http://forums.fertilitycommunity.com/donor-issues-egg-sperm/;http://www.ivf-infertility.com/phpBB2/; http://groups.yahoo.com/term/i-am-looking-for-a-sperm-donor; http://groups.yahoo.com/phrase/sperm-donor (this link lists several yahoo groups on sperm donation) [last accessed February 17, 2012].

annual meetings as a participant and presenter. At receptions, wine and cheese socials and dinners, I was able to meet FDA officials, state employees, AATB and ASRM office bearers, and a number of individuals from cryobanks and egg banks to surrogate agencies, biotech companies and law firms. At one dinner, I expressed to an AATB official that I wanted to meet someone from the FDA since I was not having much luck setting up face-to-face meetings. The AATB official immediately took me to a round table where some FDA officials were enjoying dinner and pulled up a chair for me. Interjecting work-related questions into social conversations was not always easy, but since many conversations related to spouses, children and family – questions that were central to sperm banking – I found ways to tactfully link these topics to regulations and policies about donor screening and testing. My presentation on donor anonymity at the annual fall meeting of the AATB Reproductive Council in 2010 gave me a chance to engage with and elicit feedback from my stakeholders – primarily cryobanks. The meeting challenged me to speak to a non-academic audience and discuss the usefulness of my research outside of academia. The presentation also made me realize the existing communication gap between industry practitioners and academics and the need for more collaboration between the two.

Conclusion

Considering the disparate range of sources and individuals that I draw upon across different physical and virtual locations, I prefer to use Gusterson's (1997) term "polymorphous engagements" as better suited to my data collection strategies rather than simply participant observation. Gusterson employs polymorphous engagements in the context of multisited research to refer to collecting data from multiple sources across diverse locales. As my research strategy

could not be longitudinal, I had to rely on a wide variety of cross-sectional data to get as comprehensive a picture of cryobanking as possible. My sources of data weaved through oral narratives and written records, current and past practices and future projections. Although my primary unit of analysis was the cryobank, I know that institutions do not operate in a cultural and social vacuum. Cryobank policies originate in individuals – their beliefs and practices. These beliefs and practices interact in multiple and complex ways with those of other actors: government and professional agencies, donors, recipients, journalists and members of the media, activists and so forth. In the process, new cultural values and beliefs are shaped and old ones challenged or maybe reified. While my research was constrained because of time and finances, and by no means should be considered a complete and in-depth analysis of every aspect of the industry, I consider it a starting point to bridging the divide between cryobanks and academia. One of the major reasons that cryobank directors allowed me entry into their premises was so that I could ethnographically represent how their facilities functioned. For many years, cryobank operations have been shrouded in secrecy, resulting in erroneous public perceptions about the industry and its capabilities. Yet, cryobank representatives were not always aware of the ways in which they unintentionally contributed to these misperceptions – something that my research helped them identify during our meetings and conversations.

CHAPTER 3

A Donor By No Name Is Just Another Number? The Management of Anonymity in Cryobanks

In 2005, 15-year-old Ryan Kramer traced the identity of his anonymous sperm donor by submitting a cheek swab along with $289 and the donor's date and place of birth and college degree to FamilyTreeDNA.com, an online DNA databank. This donor information was all that the cryobank had provided to his mother at the time of her insemination. It took about nine months for the DNA bank to trace two men who shared the same Y chromosome as Kramer. Although the men did not know each other, the similarity between their Y chromosomes suggested that there was a 50 per cent chance that all three had the same father, grandfather or great-grandfather. Both men shared the same last name, albeit with different spellings. Using another online site, Omnitrace.com, Kramer purchased the names of everyone who had been born in the same place on the same day. Only one man had the surname he was looking for. Within ten days, Kramer made contact with the man who admitted to being his sperm donor. The details of the meeting were not made public except the fact that the sperm donor agreed to it[9].

That a teenager had managed to destabilize the longstanding practice of donor anonymity with a little cash, technological savvy, and help from consumer accessible DNA banks, was a matter of concern for many cryobanks, but not a surprise. Since the 1990s, DNA is being used outside of forensics in a number of databases for everyday purposes by law enforcement,

[9] I find the question worthy of asking, but do not have an explanation for why the alleged man had to *verbally* admit to his donor status. I can understand that despite the high accuracy of DNA tests (also paternity tests), verbal confessions must still be offered to verify identity, yet I find such confessions part of all legal proceedings i.e. verbal confessions are sought from the accused before the court prescribes a sentence, even in cases where all evidence clearly establishes the party to be guilty. What would have happened if Kramer's sperm donor had refused to accept his status?

security firms, immigration agencies, and genealogists, sometimes without the donor's knowledge or consent, because it is person-unique, more identifiable than one's social security number, and relatively stable over time. Moreover, computer scientists established in the mid-1990s that it was possible to re-identify person-specific information, which was previously stripped of identifiers, through data linkage techniques and computer algorithms. It is, therefore, not difficult to track and re-link someone's private information.

Kramer's motives behind tracing his donor have been widely discussed by journalists and bioethics scholars in terms of the rights of children to know their biological heritage. Advocates of donor identity disclosure argue that donor-born children are not part of the anonymity and privacy contract between donors and recipients and must, therefore, have the autonomy and freedom of choice to obtain information about individuals with whom they share their genetic history. Kramer's case reveals the geneticization of identity. It is intriguing the length he went through to trace the source of his biogenetic ancestry – an act, which reveals both personal and cultural notions of rights and entitlements to the donor's private information by virtue of sharing his biology. What is equally intriguing is that neither the mother (recipient) nor the donor – the original signatories to the contract – adhered to its terms and conditions. Both parties had contractually chosen to be anonymous to each other at the time of donation/ insemination. This contract of anonymity, which was administered by the cryobank, not only prohibited recipients from seeking information about donors from the cryobank at any time (although one loophole was that it did not specifically prevent recipients from seeking donor information from third parties), but also explicitly stated that the identity of the said donor would forever remain

anonymous[10].

The decision of both parties to reverse their anonymous status alludes to the idea that anonymity is an impermanent contract which may be revoked with or without the consent of the contracting parties. Notions of anonymity not only change with technology, but also with time, circumstance, and the volatility of human decisions, especially when these decisions pertain to an unforeseen future. For Kramer's mother, a change in marital status i.e. divorce from her husband (presumably for the sake of whose infertility she had agreed to an anonymous donor) and the birth of a child prompted the reconsideration of her decision. For Kramer's sperm donor, personal circumstances and emotional frame of mind at the time of contact led to rethinking the promise he had made to the cryobank and recipient over 15 years ago[11]. But it is not only donors and recipients who break the terms of contract. Cryobanks, too, may be compelled to reveal the donor's identifiable information if subjected to a court subpoena in the "best interests of the state" e.g. in case of a criminal or public health concern. If cryobank contracts and consent forms are no more than formalities, then what becomes of the protection of private information? Moreover, how is the authority of cryobanks affected in the process?

Donor anonymity has been the subject of a number of legal and ethical debates over the years. Yet, these debates have pertained to its pros and cons: Should or should not sperm donors be anonymous? What are the repercussions if donors are forced to reveal their identity? The

[10] This is my own assumption based on examining the said cryobank's consent forms from the 1990s, the time period when Kramer's mother' was inseminated. The forms do not define the meaning of "identity."

[11] The Kramer case also brings up the issue of proprietary rights. At the time of signing the contract, donors must legally transfer ownerships rights over semen to cryobanks. Yet, the fact that Kramer's donor *owned up* to his status when he could just as well have denied it, shows that in some ways he was thinking of *his* semen as a substance over which he still maintained proprietary rights. Semen remained his biological property because it came from his body, although he no longer had legal ownership rights over it.

differences between legal definitions and practical applications and understandings of anonymity are seldom the subject of inquiry. If bioinformatics have indeed established that anonymity, as it is legally defined, is impossible to ensure in current times, why does the fiction of anonymity continue to survive in cryobanks? What does the donor's private information mean anymore if anonymity does not exist? Clearly, cryobanks put in a lot of practical effort to disaggregate donors from their body tissue and personal identifiers. Therefore, anonymity must mean *something* and must serve some purpose. Hogle (2011) observes that anonymity and identity are managed in biobanking whereby certain aspects of the donor are made visible to some or all audiences while others are obscured. In cryobanking, recipients are given the opportunity to get to "know" the donor through profiles, catalogues, baby photos and other narratives, but this knowledge is strategically partial and pieced as the donor's face may be concealed and his information is selectively chosen and filtered by cryobanks to tailor a sellable product. Donors, too, contribute to this process of identity management by selectively revealing or concealing parts of their lives from cryobank representatives. I argue that the performance and management of "anonymity" meets different needs of donors, recipients and cryobanks, and while perfect anonymity is neither possible nor preferable even to cryobanks (as they may need to keep donor records for future medical and legal purposes), the idea of contractual anonymity gives the parties involved the reassurance that the flow of information is under reliable control, in this case, the control of cryobanks. This reassurance of control of information, limited though this control might be in actuality, gives a certain freedom from an unforeseen and undetermined future. It temporarily eases donor and recipient apprehensions about conditional futures or feared what-if

scenarios. Anonymity must be flexible enough to be undone should other conditionalities materialize.

My ethnographic fieldwork explores the assumptions cryobank employees make about donor and recipient needs for anonymity. Yet, my data indicates that donors and recipients operate from a personal understanding of anonymity, privacy and confidentiality, which may not necessarily be the same as legal definitions. In some cases, opting for anonymity was as much a financial decision for donors and recipients as it was a way to delay decision making about an unforeseen, distant future. While sitting in on meetings between cryobank staff and donors, I observed that it was the staff, who frequently counseled uncertain donors to opt for an anonymous status. In some cryobanks, therefore, the decision to have anonymity was a reversible option, while identifiability was not. This was because cryobanks allowed donors to change their mind before they became identifiable. In other cryobanks, however, the decisions for anonymity or identifiability were strictly irreversible and irrevocable. In the absence of any regulatory measures, the conditions of anonymity were set by internal cryobank policies, which in turn, were based on the personal beliefs of cryobank owners. Nevertheless, anonymity had a temporal dimension to it, which allowed participants to suspend immediate decisions about a conditional future event.

In this chapter, which serves as a prelude to my next chapter on constructing, managing, and marketing the donor's public persona, I examine in the light of Hogle's (2011) observations of identity management, how cryobanks manage donor "anonymity" – how they highlight and obscure parts of the sperm donor in the process of protecting his private information while also satisfy regulatory "good tissue practice" conditions, and promote the biological quality of their

product to recipients. In this process, cryobanks paradoxically end up simultaneously maintaining and diminishing the privacy of donor information. I begin by discussing how anthropologists have approached anonymity within the context of gamete and organ donation. Then, I move on to legally accepted definitions of anonymity, privacy and confidentiality as applied in cryobanking, and the problems and challenges these definitions pose when they do not practically work as assumed.

The Under-theorization of Anonymity in Anthropology

In anthropology, the concept of anonymity has seldom been the subject of direct ethnographic inquiry, although anthropologists have been interested in what anonymity *does* to cultural notions of kinship, relationality and reciprocity. From Malinowski's (1922) elaborate descriptions of the *kula* to Sahlins' (1972) typologies of reciprocal exchanges, anthropologists have historically placed greater value on reciprocity because they saw it a function to maintain social order. In contrast, anonymity escaped attention because it was associated with *non*-reciprocity – the "all too fleeting 'mistake' of the 'free' or 'pure exchange'" (Konrad 2005:40). In Western societies, anonymity has signified a negation of relationships, an idea rooted in Marxian notions of concealment and alienation. Marx (1988 [1932]), writing in the wake of the industrial revolution in Western Europe, saw capitalism as an estranging force between humans and nature, laborers and their mode of production, and buyers and sellers. This estrangement depersonalized and dehumanized social relationships, transferring value to the product itself, and away from the time and effort of the laborer who produced it. Anonymity was imagined to render social relations invisible, nameless and faceless, and for this reason, it could not foster social ties. In fact, the concept of anonymity stood in opposition to the Durkheimian notion of

social solidarity (1997[1893]) or Giddens (1981)'s idea of "presence-availability" – the coming together of actors in close physical proximity to sustain interpersonal relationships. Anonymity, by making relations absent, represented the undoing of social solidarity.

It was Titmuss's (1970) idea, which associated anonymity and social cohesiveness in a novel, albeit controversial way. As a social policy reformist, Titmuss believed that anonymity and social cohesiveness could coexist when exchange was of a nonfinancial and altruistic nature[12]. Arguing for a non-commercialized, welfare-based model of blood donation, Titmuss proposed in the "The Gift Relationship" (1970) that the gift of anonymous blood donation – the giving and receiving of a part of one's embodied self to and from strangers, not only made the act personal and intimate, but also promoted social solidarity, cohesiveness, and communion. These values were further magnified by cultural perceptions of blood symbolizing kinship, sacrifice and life. For Titmuss, the importance lay not in the naming or embodied presence of the individual performing the act. Rather, it was the intention and performance of the act itself that mattered, and the idea that one could sacrifice a part of oneself for a stranger with whom there was no possibility of self-interested personal ties (as opposed to family and kin relations where reciprocity was expected).

Titmuss's ideas on the gift were derived in part from Marcel Mauss's (1990 [1925]) landmark anthropological study of gift exchange and reciprocity in Melanesian, Polynesian and Canadian Indian societies. Yet, according to Mary Douglas (1990), Mauss would not have

[12] The concept of altruism has been a longstanding subject of interest in religious studies, philosophy, bioethics and anthropology. Although it is beyond the scope of this chapter, social scientists such as Tober (2001), Almeling (2006), Konrad (2005), Ragoné (1994), Scheper-Hughes (2007) and others have critically examined altruism in the context of gamete donation and surrogacy to understand how the term is understood by donors and recipients.

agreed with Titmuss's thesis. For Mauss and Douglas, there was no such thing as a free gift because there could not be an anonymous *relationship.* Gifts locked givers and receivers in an indefinite relationship of reciprocity where not returning the obligation threatened the individual's honor and status. Moreover, gifts could not be anonymous as they retained the *hau* or spirit/ essence of the giver, which constrained recipients to make a return lest they be afflicted adversely. Anonymity blocked the principle of reciprocity and balance. It made "persons (as relations) invisible," and hence, for early anthropologists, it was not an important or valuable subject of study (Konrad 2005:35).

Organ and tissue banking are two other areas, which have been anonymity to the center of social scientific attention. In organ donation and transplantation, especially, the principle of anonymity was adopted with the hope of permanently concealing and severing social relations between donors, recipients and their families. Hospital staff used anonymity to make distant, not only physically, but also emotionally that which was unpleasant to endure. By physically intervening between donors and recipients and preventing their mutual contact, hospital staff tried to assuage the feelings of grief, guilt and anxiety experienced by living recipients and their families as well as the families of the deceased donor. Anthropological studies on organ and tissue donation, however, showed that anonymity did not, in fact, sever social ties between donors and recipients. On the contrary, it linked participating actors into a bond of kinship on the basis of their shared anonymity (Konrad 2005). Social scientific studies suggest that recipients of organs and tissue imagine a personal relationship with the donor where they ritually incorporate into themselves not only a part of the donor's body, but personhood as well (Lock 2001; Sharp 2000). Anonymity fails to break the obligatory credit-debt relationship that the language of

gifting produces. On the contrary, this relationship, at times, becomes "tyrannical" especially when the perceived value of the "gift" given (e.g. loss of life in order to obtain the organ) is more than the perceived value of the return "gift" (Fox and Swazey 1992; Scheper-Hughes 2007).

Some social scientists have challenged such easy imaginings of personhood and relationality in the light of new technology. Taking the case of blood donation, Waldby and Mitchell (2006) argue that contemporary blood banking has reduced whole blood transfusions, dividing blood into subsets of proteins tailored to suit the clinical needs of a particular patient's condition. They claim that this fractioning of human blood may have significant effects on the ways in which donor-recipient relationships are envisioned. Still, ethnographic data is lacking on contemporary blood banking and transfusion practices and the ways in which they are affecting imaginings of donor-recipient relationships. It remains to be seen whether these imaginings become as rhizomic as the biological material they represent.

The case of human blood is different from gametes, which produce rights-bearing individuals. Blood transfusion may require testing and typing, but does not have any effect on the genetic make-up of an individual. Blood products are rarely traced back to their original donors for genetic lineage in the same way as gametes and cell lines. Same is the case for immortalized cell lines. Research on cell lines has commonly tended to focus on their future regenerative capacity, seldom focusing on their past source. Hogle (2010) observes that confidentiality is particularly important in research on cell lines as their derivation from embryos is politically and emotionally charged. Embryo donors must sign confidentiality agreements that prevent researchers from knowing about their social, biological or pathological contexts. The case of the HeLa cell line serves as an exception, but demonstrates how stories of Henrietta

Lacks' social identity and personhood including narratives of race, class and gender become tied to stories about the biology and behavior of the cell lines themselves. The abbreviation of Lacks' name to HeLa is another binding link between identity as both cell source and person.

While traceability is discouraged in embryonic stem cell research, Hogle (2010) observes that donor cells carry with them genetic histories that continue in new, far more intimate and transformative ways in the bodies of recipients – ways that are quite different from previous metaphorical notions of the organ donor living on in the body of the recipient. Drawing on Landecker (2007), Hogle (2010: 445) claims, "There is a ghost-in-the-dish that can be conjured only in the sense that stem cells exert a type of agency somewhere between recalcitrant tool and cell with 'spectral quality of the person' as Landecker puts it (2007:176)."Yet, some research projects may require traceability, not only of the source of the cell lines, but of their specific human ancestry to determine, for example, epigenetic influences on the genome as well as the inheritance of specific characteristics from parental sources. In sperm donation, the desire of the donor to protect his social identity is offset by the desire of offspring and recipients to trace the donor's pathological and biological origins. In both cases, as I discuss in detail later, there is a desire for protection from the uncertainties of the future. Yet, while the philosophy behind anonymous donation focuses on forgetting the source, in the second, the offspring's desire to trace the donor signifies remembering the source. The labeling of the child as "donor-born," itself, attributes a specific biological identity, which ties the child and the child's birth origin to the sperm donor.

If anonymity is assumed to render invisible, faceless and nameless, to confound identifiability by erasing or masking unique, person-specific characteristics, and to negate social

ties, then it fails to live up to any of these definitions. The biological cannot be decontextualized from the cultural and the social. Cultural understandings of human biological materials seek connection with a human source. Organs, gametes and tissue are culturally perceived as originating from a human source and are, therefore, rarely imagined as existing in a vacuum. Yet, this real or imagined connection with the donor means that there is identifiability at some level. Anonymity, then, must mean more than non-identification to those who seek it. Below, I briefly sketch out early twentieth century cultural perceptions of artificial insemination, which led to the adoption of anonymity in cryobanking. Late twentieth century shifts in the social, political, legal and technological environment challenged these views rendering anonymity visible in discourse.

The History of Anonymity in Donor Insemination

Historically, artificial insemination's notoriety necessitated its secrecy. The practice was seldom reported and depended very much on the physician who dared to perform it. One of the few early documentations of artificial insemination by anonymous donor is attributed to Dr. William Pancoast of Jefferson Medical College in Philadelphia. In 1884, Pancoast reportedly inseminated the wife of an azoospermic Quaker merchant with the sperm of one of his “best looking” medical students in anatomy class. Although the merchant was aware of the method of insemination, and the donor-born son was eventually informed, the wife of the merchant remained oblivious to this fact throughout her life (Daniels and Golden 2004). The secretiveness of the act, the fact that it was only disclosed to the male members of the family and that it was reported 25 years after the fact by one of Pancoast’s students (who was also suspected as the sperm donor) hints at donor insemination’s questionable moral nature as well as male assumptions and apprehensions about women’s ability to grasp the gravity of an act, which was

so socially and morally scandalous that it was performed on them without their consent. Moreover, semen was obtained from masturbation, a religiously condemned and morally frowned upon act. The social acknowledgment of a named donor threatened the conjugal stability of heterosexual marriage by imitating a kind of technological adultery. It also served as a painful and embarrassing reminder to the infertile or sub-fertile husband of his failure as a man to perform his conjugal duty. Anonymity's function was to keep hidden social and moral controversies. It protected the husband from facing social stigma on account of his infertility and from the anxiety of a broken genealogical connection. It protected the physician from condemnation for performing an immoral practice; the woman from charges of adultery; the donor from legal responsibility towards the resulting child as well as embarrassment from public disclosure of an immoral act. Lastly, anonymity protected the child from being labeled an illegitimate bastard and denied a share in inheritance.

Donor anonymity also gave participating parties protection not otherwise granted to them by law. A history of US family law cases reveal that courts, which followed patriarchal and patrilineal modes of biologically-based economic inheritance, were ill-equipped to deal with the novel forms of family and kinship structures that assisted reproduction produced. Up until the 1960s, the intrusion of a third party donor into the marriage between a husband and a wife was considered adultery. The status of the resulting child – who did not share biological lineage with the wife's husband – was especially uncertain because it called into question the ability to inherit from the father. Donor conceived children were assigned the same status as those born out of wedlock – illegitimate – even when the husband provided written consent to his wife's

insemination process[13]. The Catholic Church branded donor insemination as a religiously sinful and immoral practice. In 1950, Pope Pius XII, stating the official position of the Roman Catholic Church, condemned artificial insemination by donor for its immorality both inside and outside marriage, because there was no "bond of origin" between the resulting child and the husband – "no moral or juridical bond of conjugal procreation" (Pope Pius XII 1950:252). The Pope's statement was followed by the Archbishop of Canterbury who declared artificial insemination a criminal offense worthy of prison term for all those who were involved in it (Daniels and Taylor 1993). These social and legal pressures fed into the general desire to keep the use of donated sperm as much of a secret as possible. Only a few physicians/ gynecologists were prepared to inseminate their patients, frequently choosing donors from a limited pool of young, unidentified, medical students, who physically resembled the recipient's male partner. Sometimes sperm from more than one donor was used in a given insemination cycle to erase traceability to a single donor [14] (Lesher 2001). Anonymity and secrecy guarded all parties from unpleasant confrontations in the present as well as possible future interferences.

In the US, cultural and political changes from the 1970s onwards gradually led to a greater tolerance of artificial insemination by third party donors and an expanding market for donor sperm. Some of these changes included the sexual revolution, feminist and gay rights movements as well as a rising number of financially self-sufficient single women choosing to delay reproduction until middle age. Commercial sperm banks were also greatly aided by courts'

[13] See for example, *Doornbos v. Doornbos*, 23 U.S.L.W. 2308 (Cook County, Illinois, Superior Court, December 13, 1954) http://blogs.kentlaw.edu/files/doornbos-v-doornbos-appeal-139-n.e.-2d-844-_1956-1.pdf (last accessed: October 5, 2011). Also see: Gursky v. Gursky, 242 N.Y.S.2d 406 (N.Y. Sup. Ct. 1963) http://scholar.google.com/scholar_case?case=4747072466341057567&q=Gursky+v.+Gursky&hl=en&as_sdt=2,50&as_vis=1 (last accessed: October 5, 2011).

[14] This practice is no longer in use because of the importance of genetic traceability.

decisions to legally separate the roles and responsibilities of the biological and social father from the sperm donor, and acknowledge the donor-born child as legitimate with rights to inheritance if the adopting father provided written consent to the procedure[15]. In 1964, Georgia became the first state to grant legitimate status to a child born from donor sperm. Four years later, in People v. Sorensen (1968), the California Supreme Court ruled that the role and responsibility of the sperm donor was equivalent to that of a blood donor, and that the legal father was the one who consented to his wife's insemination[16]. In 1973 and 1974, the Commissioners on Uniform State Laws and the American Bar Association, respectively, approved the Uniform Parentage Act, which designated the husband as the "natural father" of a child if he consented to his wife's insemination under a physician's supervision. Since the 1980s, the growth of genomics, and advancement in genetic testing and have contributed to the rise of a biogenetic concept of the "self" as I discuss in greater detail in Chapter 6. The concept of the geneticized self entails a genetic determination of one's biological, social and environmental traits. The need to obtain knowledge of one's genetic origins including predisposition to diseases has been a key factor in arguments against donor anonymity and secrecy.

The Dilemma of Anonymity Today

The above historical accounts demonstrate that anonymity served to protect the rights and define the responsibilities of donors, recipients and offspring, which they statutorily lacked in

[15] In many US states, the donor is the biological father of the child unless it is clearly specified that the recipient is married to another who provides written consent to the procedure. Problems arise in cases where the husband's written consent is missing or where the recipient is unmarried at the time of insemination (Cuticchia 2008). The presence of cryobanks as third-party witnesses to the procedure of artificial insemination proves especially helpful in these circumstances as they furnish the necessary legal evidence to delineate and clarify donor and recipient roles and responsibilities.

[16] Source: People v. Sorensen 68 Cal.2d 280. [Crim. No. 11708. In Bank. Feb. 26, 1968] http://scocal.stanford.edu/opinion/people-v-sorensen-22620 (last accessed October 5, 2011).

courts. Today, however, artificial insemination is much more culturally accepted and openly discussed. Many states have laws delineating that sperm donors are not legal fathers and do not have parental rights or responsibilities towards donor-conceived offspring. So, what purpose does anonymity serve today? I think anonymity serves not only a legal purpose but an emotional one as well. It provides psychological protection from the *possibility* of the occurrence of a future scenario, a future defined in terms of risk. Anonymity is oriented towards the conditional future, the "what if" scenario, or rather, the apprehension that the scenario *might* turn out to be real. For the parents – the recipients of artificial insemination and their partners – anonymity means protection against the possibility of an interfering donor figure who may want a say in paternity and parenting[17]. For the future offspring, the donor's anonymity is arguably thought to protect from the psychological trauma of knowing that one's biological origins are not the same as social upbringing.

For donors, anonymity means protection from possible intrusion by recipient or offspring in the undetermined future. Men signing up to be anonymous donors most likely do not desire to be fathers to the resulting offspring. They may or may not have children of their own, may or may not desire fatherhood in the future, but they do not desire connection with the donor-conceived offspring at the time of signing the donor contract. Moreover, non-identification protects donors from the social stigma attached to masturbating for money (a reminder of sex work). The donor's identification may not only have implications for him, but also his family. For example, the knowledge that a donor has HIV or Huntington's disease has emotional effects

[17] Moral debates question whether donors stop being parentally responsible even though they must contractually waive parental rights. See for e.g. Weinberg, Rivka (2008), "The Moral Complexity of Sperm Donation," Bioethics 22(3): 166-178 for an interesting theoretical take.

on him and his immediate and extended family (who may also be afflicted if the disease is genetic) as well as practical consequences for health and life insurance, employee status, and disability rights. In the case of genetic disease, the implications may even extend to his racial and ethnic group if the group is marked for carrying certain disease traits (e.g. Tay- Sachs in Ashkenazi Jews, Sickle cell anemia in African Americans and sub Saharan Africans).

Botkin (2010) does not consider family members identifiable if no identifiers are specifically gathered on them. However, I found during the course of my fieldwork, that donors would sometimes disclose names and other identifiable information about immediate family, marital partners, children and so forth. Although cryobank employees would not document the names, donors gave enough detailed descriptions about their families over the course of providing medical, social and "pedigree" history that *were* documented (many times without the family member's consent), that they raised questions about what was private information and whether donors were actually breaching family members' privacy by disclosing sensitive information about them without their consent. For example, donors were asked about their immediate and distant family members' birth origins (whether adopted), ethnic origins, religious beliefs, educational and professional qualifications, age, marital status, history of pathology, miscarriage, medications and drug use (sometimes questions about incarceration also came up), surgery, cause of death, age of death, genetic disease history, vision problems, bone structure, ability to tan, freckles after sun exposure, dimples, cleft chin, psychological problems, alcohol consumption, donor' relationship with them and so on. The question of privacy and confidentiality also subsequently arose. In the next section, I discuss how terms such as anonymity, privacy, and confidentiality are defined in human subjects research, computer

sciences, legal and biomedical fields as well as the problems with these definitions. I consider it necessary to mention these definitions because they affect cryobanks in various ways. As cryobanks deal with security of online data, legal, clinical and research issues, the ways in which these different disciplines define anonymity, privacy and confidentiality also matters.

Definitions of Anonymity, Privacy and Confidentiality in Law, Computer Sciences, Human Subjects Research and their Applications for Cryobanks

Anonymity

"Anonymity," originally comes from the Greek word – "anonymia," meaning "without a name" or "namelessness." In research and clinical practice, however, anonymity is about more than withholding one's name. It refers to withholding unique identifiable information, while *publicly* sharing the data attached to that information. According to one definition of the University of Wisconsin-Madison's Social Sciences Institutional Review Board (UW-IRB), research data should not have any identifiers from the point of collection if it is to be considered anonymous, for example, gathering voter data on political candidates without obtaining names, addresses and other identifiers of research participants; collecting saliva for measuring cortisol levels and disposing it without identifying genetic markers (Larson 2010). The moment any identifiers are attached to biological data, there is no anonymity. By identifiers, I refer to the 18 potential markers listed in the Health Insurance Portability and Accountability Act (HIPAA) Privacy and Security Rule, a set of national standards, established in 1996, for the protection of certain health information categorized as private. Commercial cryobanks are usually not considered HIPAA covered entities under HIPAA's 2006 45 CFR § 160.103 unless they perform inseminations or are subsumed under a covered entity such as a hospital or other medical

institution[18]. Nevertheless, many cryobanks honor HIPAA. HIPAA lists 18 potential identifiers, which include names, addresses, dates and other identifying numbers. When paired with similar identifiers or non-identifiers, this data may reveal a person's identity and information attached to that identity. For example, one can link any combination of characteristics relating to income level, ethnicity, sex, age, and zip code to identify someone without using names.

According to the UW IRB's definition of anonymity, data is either anonymous or it is not. Elger and Caplan (2006:662), however, find a varying range of biological data in European and American biobank research employing different understandings and degrees of anonymization ("completely anonymized," "unlinked anonymized," "unidentified," and "de-identified," to "traceable," "coded," "identified," "identifiable," "personal data" and several variations in between). They define anonymized biological material as one stored alongside associated information such as type of tumor, medical treatment, and donor's age, but the donor's identifiers are stripped irreversibly (so that researchers and end users do not have access to them) or reversibly (where end users and researchers could link identifiers with the help of a code). Biological samples containing DNA cannot be truly anonymous. Quoting Lin et. al (2004)'s study, Elger and Caplan (2006) state that DNA fingerprinting, which compares DNA sequences at 30-80 statistically independent single nucleotide polymorphisms, can uniquely define a single person. Anonymous, in their opinion, is an appropriate term only for archaeological samples.

[18] HIPAA 2006 45 CFR § 160.103 pertains to health plans, health care providers or clearing houses and other entities specializing in "preventive, diagnostic, rehabilitative, maintenance, or palliative care, and counseling, service, assessment, or procedure with respect to the physical or mental condition, or functional status, of an individual or that affects the structure or function of the body," and to entities which engage in the "sale or dispensing of a drug, device, equipment, or other item in accordance with a prescription." Neither donors nor clients are considered cryobank patients. Source: http://www.hhs.gov/ocr/privacy/hipaa/understanding/summary/index.html [last accessed 11/06/2011].

Sperm, by virtue of being a biological sample, bears the donors DNA and, therefore, has the potential of being identified.

If some of the current sperm donor data is to be classified under a category, the closest it would get to would be the reversibly anonymized category. This means that the data is anonymous so long as identifiable information is not relinked to it. Computer scientists studying reidentification sciences have nevertheless demonstrated the limits of such anonymized data through computer algorithms which re-identify records of previously de-identified individuals.[19]. Cryobank employees inform that discovering the donor solely by linking non-identifying information is rare, however, changes in technology have also resulted in accompanying changes in what counts as private or public information. For example, up until the 1980s, cryobanks included the donor's state of residence and alma mater in donor profiles until the internet became popular and recipients began searching online in school and college search engines and yearbooks to trace donors. At one cryobank, a recipient successfully traced an anonymous sperm donor by using non-identifying information from his long profile such as his favorite quotes and favorite music. She ran a keyword search on various social networking sites until she came across the donor's MySpace profile. In this instance, the donor diminished his own privacy by

[19] In the mid-1990s, Latanya Sweeney of Carnegie Mellon University, then graduate student in computer sciences and one of the pioneers of reidentification research and theory, successfully traced the medical data of William Weld, then Governor of Massachusetts, from a list of 54,000 hospital records released by the Massachusetts Group Insurance Commission (GIC) to third party researchers. GIC's data pertained to the number of hospital visits made by state employees. The data was stripped of identifiers such as names, addresses, social security numbers and other contact information. Sweeney requested a copy of the data, and purchased the complete voter rolls from the city of Cambridge for $25. The voter database comprised names, addresses, ZIP codes, date of birth and sex (among other information) of every voter. Knowing that Governor Weld lived in Cambridge, Massachusetts, which had a population of 54,000 people and seven zip codes, Sweeney combined the voter data with GIC records and successfully discovered his medical records including details of all diagnoses and prescriptions. She then mailed this data to the Governor to alert him of the breach in his privacy. Source: Shaw, Jonathan (2009) "Exposed: The Erosion of Privacy in the Internet Era." Harvard Magazine. September. < harvardmagazine.com/2009/09/privacy-erosion-in-internet-era> (last accessed November 11, 2011)

using identical information on his social networking site and donor profile. From his MySpace page, the recipient discovered that the donor was a musician. Much to his shock, she appeared at one of his concerts with a photograph of the donor-conceived offspring, informing him that he was the father of her child. The donor may not have seen much difference between self-representation on a social networking site and the questions he answered for his sperm donor profile. Further research on self-identification and representation on social network sites and donor profiles would yield interesting answers to the sperm donors' understandings and interpretations of public and private information. Donor profiles are very similar to social networking/ dating sites, after all, and require donors to portray themselves as socially and sexually desirable.

The meanings of anonymity and privacy were often interconnected, although I did not find explicit definitions of anonymity in cryobank contracts and consent forms, which instead focused on the protection of private and confidential information. One cryobank brochure explained anonymous donors to recipients simply as donors whose identity was not known.

Privacy and Confidentiality

Privacy and confidentiality are commonly understood as legally protected and *restricted* information, accessible to *selected*, privileged parties e.g. conversations between doctors and patients, attorneys and clients, teachers and students and so forth. So, if a hacker succeeded in tracing a patient's name, address, name of employer and number of hospital visits, this would represent an infringement in the patient's privacy. If the hacker obtained details of the conversations between the doctor and patient, nurse's notes, results of diagnostic tests and prescriptions, this would qualify as a breach in the patient's confidentiality.

Although neither HIPAA nor the Common Rule (which pertains to research with human subjects) define private information, legal scholars understand it as personal information, which, if made public, can cause harm or embarrassment to the individual, especially if it is used by adversaries against individual interests[20] (Le Bris and Knoppers 1997; Botkin 2001; Allen 1997; Lessig 2004; Ohm 2009). The right to privacy over one's personal information, therefore, refers to the right to restrict access to that information from others. Loss of privacy refers as much to the actuality of identification as much as it does to the potential of being identified. Legally, sperm donors have limited rights to self-determination, that is, to determine their actions, and arguably, limited rights to privacy as well because they sign away proprietary rights over their semen to third parties (cryobanks) in exchange for money. Cryobanks may further sell, exchange or distribute donor semen to other parties – either recipients or third party researchers. The more individuals semen is shared with, the less control donors or even cryobanks have over how it will be used. Cryobanks may give semen for research or destroy it if the donor has reached his limit on the number of pregnancies or if the donor tests positive for a certain disease. Semen vials which have been lying in storage for a number of years or "disqualified" because they were frozen before the availability of a particular mandatory infectious or genetic disease test are also sold to research firms[21]. This way, cryobanks can recover some of the costs of testing and

[20] Source: Department of Health and Human Services (DHHS) Federal Policy for the Protection of Human Subjects ('Common Rule') – 1991(http://www.hhs.gov/ohrp/humansubjects/commonrule/index.html (last accessed October 5, 2011)

[21] Many cryobanks prefer to elicit advance consent from donors as it is difficult and costly to repeatedly contact the donor every time consent is required. Moreover, the donor may move to a different location and not wish to remain in contact, may be busy or not interested in responding or may just not want the annoyance of repeated contact. Consent forms are deliberately worded broadly and vaguely as it is difficult to specify in advance the type of research semen will be used for in the eventuality that it is used for research. Nevertheless, cryobanks reassure donors that the samples will be used for ethical research purposes. Bioethics scholars question the validity of

storage as well as find a more productive and less costly use for semen other than destroying it or letting it remain indefinitely in storage.

Unused semen vials are sold to research firms for non-clinical research such as semen analysis well as clinical research such developing tests for prostate cancer detection. The sperm banks where I did my research claimed they did not provide sperm for stem cell research at the time, but they did not want to rule out future possibilities. Crime laboratories and the FBI also obtained de-identified semen samples from time to time for staff training on rape analysis and for various forensic purposes[22]. Moore (2007) has observed that seminal discharges are public property and indexed for posterity in the FBI's Combined DNA Indexing System (CODIS) – a complex, hierarchical and relational database system, linking crimes to other crimes or to previously convicted offenders. Cryobanks were not aware that forensic tests included DNA analysis. Not all research results in the loss of the donor's privacy, but researchers can accidentally discover identifiable aspects of the donor during the course of their research, which may or may not be harmful to the donor. Discovering a gene for hair or eye color may result in some loss of privacy, but may not be harmful, while discovering that the donor carries a rare genetic anomaly or that his DNA matches that of a felon may have consequences for the donor, especially when the discovery requires retracing him.

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advanced informed consent, especially when those consenting have no way of knowing about the future use of their biological materials (Elger and Caplan 2006).

[22] Some cryobanks developed separate research protocols for cancer related research for which they recruited donors separately, while others did not. As sperm donors signed off their rights to the ownership of semen, it was up to cryobanks how to use it. Many cryobank consent forms indicated to donors that their semen might be used for "ethical research purposes," but it was not specified what kinds of research because of the future unpredictability of research and because cryobanks were not always able to retrace the donor to get his consent after he left the program.

As the environment around tissue banking has become increasingly regulated since the HIV/ AIDS epidemic of the 1980s, notions of risk, responsibility and their management have come to define the industry to a considerable extent. Ideas about privacy, ownership and self-determination, therefore, become important as cryobanks must balance donor and recipient rights to privacy while also keeping sperm samples identifiable for testing, analysis and marketing. Donor anonymity occupies an ambiguous position within this legally charged realm. The ambiguity primarily derives from assumptions about what the concept of anonymity symbolizes. In principle, anonymity entails within it two countervailing forces: where it promotes honesty and expressive freedom, and prevents unpleasant confrontations, it also paradoxically increases the chances of corruption and dishonesty by hindering accountability and transparency, and by compromising the reliability of information[23] (Levmore 1996). Anonymity is more socially acceptable, argues Levmore (1996:2202) "not when it is complete but rather when there is anonymity as to some recipients or subjects but identifiability to a responsible intermediary. This sort of intermediation is found acceptable where it encourages communication without an excessive sacrifice of reliability."

From a legal perspective, the consequence of the intermediary role that cryobanks play between donors and recipients raises the value and onus of communication or action to them as they are the identifiable party. Many cryobank directors also see their role as moral guardians and trustees for their donors and clients – a relationship built on years of gaining trust and

[23] Hence, the secret ballot may be socially sanctified for members of the general public in many democratic countries; however, voting by elected representatives or public authority figures cannot be secretive and must be part of the public record. Elected representatives are considered accountable to the public, and therefore, secrecy is not acceptable when decision making has widespread societal consequences.

confidence. Such a relationship also places added responsibility on cryobanks to keep verified records, not only for the sake of recipients, but also to protect their own legal position in a court of law. From a regulatory, quality assurance-related standpoint, sperm donors are not anonymous and cannot be anonymous to cryobanks for a number of reasons. Cryobanks are required to link sperm samples with the donor's identifiers, medical and genetic history. Identifiability becomes all the more important if the donor or sperm test positive for a certain infectious or genetic disease. Where genetic disease is involved, the sample may need to be traced back not only to the donor and his previous test results to determine if the disease had a certain origin point, but also to his family. The retracing can take place years after donors have completed their contract and are no longer part of the program if concerns arise about the health status of the child or if more information is sought on the donor or if the state issues a subpoena for donor records. Many cryobanks have anonymous donor records on file for 10-25 years, and some cryobanks indefinitely keep records of all donors. The mere fact that cryobanks have the ability to trace donors reveals a link between them that is not broken.

It appears then that men may be contractually signing away their rights of ownership over semen, but cannot waive their responsibility for it. As semen is exchanged through a commercial transaction, I liken it to selling a product with an unlimited warranty. Privacy is conditional upon the operation of the product. If the product operates as expected, the donor's privacy will remain protected. If the product malfunctions in some way, then the terms of contract may be revoked by the participating parties, at times in arbitrary ways not specified in the contract. For example, donors are explicitly forewarned that they may lose their privacy if the state determines that doing so is in its "best interests." However, cryobank contracts do not give recipients the

authority to breach a donor's privacy at will. Yet, some recipients arbitrarily choose to do so if they believe that donors and cryobanks have not held true to their part of the contract. There is then a feeling on the part of the contracting parties that the donor is in some ways latently responsible for his biological material, even though the donor may not be deliberately responsible or even aware of its "malfunctioning." In sharing their sperm with more than one recipient, donors are also sharing a part of their biology and personal history. This shared biology and history becomes part of the offspring, extending into both past and future in new complex and unpredictable ways, which cannot be controlled by either donors or cryobanks. To what extent can donors have privacy if they have agreed to share not only their own, but also their family's biogenetic legacy through their reproductive material? This question lies at the heart of legal and moral rights-based arguments demanding the identification of the sperm donor[24]. For cryobanks, the challenge is to find a way to balance the privacy needs of donors and recipients who do not wish mutual contact, while sharing enough information to satisfy those who require it. In the next section, I show how cryobank employees understand and manage private information.

[24] See for example the 2000 Johnson v. Superior Court (California Court of Appeal, Second District. 80 Cal. App. 4th 1050, 95 Cal. Rptr. 2d 864), where the parents of one donor-born child petitioned to obtain the anonymous donor's identification. The child, a five-year-old girl, developed Autosomal Dominant Polycystic Kidney Disease (ADPKD), which the parents claimed had been transmitted through the donor. The parents petitioned for the disclosure of the donor's identity (including his name, address and medical history) and sued the cryobank for failing to communicate that it had knowledge about the prevalence of the disease in the donor's family history. The court ordered the donor to appear at his deposition, but did not require disclosure of his identity. However, the Judge warned the donor that he diminished his own privacy by engaging in multiple commercial transactions, which affected the lives of several families. Hence, he had limited privacy interest and it was unreasonable for him to assume that his identity could never be disclosed.

Managing the Donor's Private Information

At the time of signing the contract, the names of anonymous sperm donors are ritually replaced with a special identification number, which can also be a serial number. These numbers may be delinked from the donor's name for everyday purposes, but are nevertheless, identifying within the cryobank because only one donor possesses a particular number. Donor numbers operate as a kind of "human inventory marker" within a cryobank, and distinguish different donors and their sperm samples from each other. This differentiation is important not only from a quality assurance perspective – to ensure that donor records are paired with the correct sperm sample for testing and evaluation, and the desired sperm sample is shipped to the correct recipient – but also from a marketing perspective. Marketing requires cryobanks to show diversity in their donors through a number of social categories: race and ethnicity, age, profession, education, hobbies, hair and eye color, achievements and so forth. Recipients who choose an African American donor with brown eyes and dark hair would probably not want a Caucasian donor with green eyes and blonde hair. Hence, at the very least, sperm must be identifiable on the basis of phenotype and contagion. Donor numbers and variously colored labels help cryobank employees visually identify vials.

Although donor identification numbers are unique within cryobanks, two donors from different cryobanks may have identical numbers. In order to trace their identity, however, one needs additional information such as the year the donor has been inducted into the program, the name of the sperm bank, the geographic region of the sperm bank and other identifiers. If one is determined to discover the donor's whereabouts, one can be aided by the fact that cryobanks usually recruit donors living in the vicinity within a certain mile radius. This is mainly because

donors have to commit to a long-term time-frame ranging from six months to two years during which they have to make regular visits to provide sperm. Long distance travel is inconvenient, expensive and unreliable. If one is able to link the sperm bank's zip code with the information in the donor's long profile – information that sperm banks consider non-identifiable (education, profession, baby photo and other details), one might not necessarily discover the donor's identity, but it could be a starting place for a search.

At cryobanks, I often found the verifiability of the donor's identity a great cause of anxiety among cryobank staff. Was the donor who he claimed to be? Did the sperm sample really come from the said donor? Donors were forbidden to take their "collection cups" home if they were having difficulty producing an ejaculate at the cryobank (unlike client depositors who were not only allowed to bring their partners into the collection room to help sexually stimulate them, but could also take their collection cups home if they could not produce a semen sample at the cryobank[25]). Donors, on the other hand, had to be on cryobank premises to produce a semen sample and lab technicians had to verify that the donor checked in and labeled the vial correctly. Donors could not be trusted to take collection cups home for fear that they might get someone else's ejaculate and receive payment for it. A combination of factors such as the donor's need to remain non identified, receive payment and produce semen samples for strangers with whom he had no relationship and no obligation, contributed to cryobank employees' suspicion that donors were inclined to be dishonest about their motives.

[25] The difference is that client depositors are storing semen for themselves whereas donors are storing semen for use in others, hence, there is more at stake in terms of testing.

Donors were instructed to write their personal identification number on the semen collection cup as well as fill out a form with their identification number and date of semen collection at every visit to the cryobank. Proper identification of semen was part risk management and quality assurance, and part security measure of keeping out undesirables and imposters. It was not enough that donors identified themselves, they had to provide relevant identifying evidence to prove they were who they claimed to be. Some of the anxiety of cryobank staff stemmed from the few ways available to them for cross-checking donor information. Cryobank staff had to rely on the donor's word as truth. Contacting his family members directly would be a breach of the donor's privacy and the family's as well. Additional tests to verify donor identity included criminal background checks. Most cryobanks kept photographs, police records and fingerprints on file for all donors, regardless of their status. One cryobank had a special surveillance system, which identified donors by their finger prints before allowing them access into the building. This meant that the fingerprints of current donors were part of the cryobank's internal surveillance database. Even when names were avoided, at times donors had to be identified in ways, which were possibly more identifiable than names. Anonymity represented risk and danger, and could not be an option *until* valid identification was verified. Only after that, began the task of de-identification.

Cryobanks used special databases to delink HIPAA-specified identifiers from the donor's laboratory results, medical, and genetic records. Donor data was stored in an internal electronic database, not connected to the internet. One cryobank director exercised even more caution by only archiving printed donor records to further lessen the chances of a security breach (more of a threat when data was stored electronically). Delinked donor records were frequently cross-

indexed to allow employees the ability to track donor information such as the number of vials sold to a particular recipient, number of vials remaining in inventory which had or had not passed quarantine, history and evaluation of pathology and so forth. Donors were not only linked to their semen samples, but also to the recipients who purchased the vials. The link between donors and recipients was important to limit the number of pregnancies by a single donor[26]. Hence, even at the level of information and inventory management, the connection between donors and recipients was maintained despite the de-identification of donor data.

Cryobank employees' accessibility to donor data was restricted, varying with the relevance of their professional position within the organization and their level of contact with donors. So, for example, lab technicians had access to sperm analyses records as well as infectious and genetic disease results from external labs. As lab technicians were also in charge of keeping track of inventory, they required access to records, for example, on the number of vials of a particular donor in storage, quarantine, and post-quarantine, as well as the number of vials shipped to recipients. At times, lab technicians also required access to the donor's medical records to trace the history of pathology. Similarly, donor coordinators and client services staff had access to the donor's social behavior-related data: personal essays, questionnaires, interviews and surveys as well as information on medical, psychological and genetic records along with the number of vials sold. Only the cryobank's top management such as directors and

[26] Sperm banks informed me that the idea that a single donor could sire hundreds of offspring as popularized in the media was incorrect because banks limited the number of vials sold by each donor to a certain number of individual recipients or family units (nuclear family or both partners in a lesbian couple) based on the distribution of recipients over a certain geographic region. In the US, there is no federal or state law limiting sperm donation. The ASRM recommends 25 live births per population area of 850,000 to avoid the chances of inadvertent consanguineous conception. Source: Practice Committee of the Society for Assisted Reproductive Technology. 2006 Guidelines for Gamete and Embryo Donation. Fertility Sterility 2006; 86(5 Suppl): S38–50.

owners had access to complete donor and recipient data. Thus, a master document of donor and recipient data existed with detailed sensitive information, some of which was identifiable, and which was prone to intentional or accidental infringement by unauthorized and authorized parties.

Financial reimbursement posed yet another challenge to the donor's privacy. Donors were often hired as independent contractors, which meant they had to report their earnings to the Internal Revenue Services (IRS). Being able to receive written checks and declare income meant being identified by name and social security number, which also identified their date of birth, address and other private information. Some cryobanks tried to resolve the identification issue at their end by using computer software, which gave donors a vendor number. This vendor number was different from their unique identification number to obviate the need to use names or identification numbers when cashing checks. Nevertheless, checks revealed that donors were paid by a biobank.

The marketing of donor profiles posed yet another challenge to the donor's privacy and confidentiality, which had to be managed. Cryobanks had their own policies on what was considered identifiable based on the personal beliefs of the directors and employees. Some cryobank marketing campaigns featured the donor's audio interviews with messages for the imagined future offspring, handwriting samples, phrenology and facial features reports, personality, social behavior and lifestyle- related tests[27]. The information in the tests had to

[27] While phrenology is discredited today as a 19th century pseudoscience, which linked facial features to personality types, it is used in a specific way by some contemporary cryobanks to enable recipients to predict the future child's physical features. For example, some cryobanks provide a detailed description of the set, size, shape and color of eyes, size, length and wide of nose, shape of face (round, square, oval), size of ears, type of chin (cleft, protruding),

managed in a way that made each donor unique enough to be distinguishable from the other donors, yet not so unique as to be identifiable. For example, some cryobanks made all donors use the same pen to fill out personalized essays. Other cryobanks were critical of such an activity because for them it was the handwriting, not the kind of pen used, which could be considered identifiable. Some cryobanks sold donor baby photos – because "recipients warm up to babies," as one cryobank employee put it – but determined photos beyond the age of three or four as too identifying. Other cryobanks did not offer any photographs because of the concern of cryobank directors and employees that recipients would focus too much on the donor's appearance, rather than what they considered the "real" reason for insemination: to have a healthy child.

As one can see from the above examples, the purpose of the donor's profile was to build a connection between donors and recipients – a kind of relationship marketing to "warm up" recipients to donors, while at the same time not share names, addresses, phone numbers and so forth. It was a very different understanding of anonymity than the one which claimed to sever social ties. In this case, social ties were encouraged in specific ways at the level of imagination with the option of being realized in the future. Relationships and connections between donors and cryobank employees were also highly valued. Cryobank employees needed the donors' trust to encourage their honest representation. There were few ways of verifying donor information outside of what donors disclosed to cryobanks, and hence the donor's ability to be truthful about his personal and family history was of utmost concern. Gaining trust was important for donors,

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high, low or receding hairline, condition of teeth, whether the donor needed braces as a child and so forth. The future offspring's physical appearance is divined, as it were, by using the donor's physical appearance as a proxy. Coupled with other factors such as the donor's ethnic background, baby photos, handwriting analysis, staff impressions, genetic history, personality and lifestyle evaluation, recipients can imagine what their future child might be like.

too, as they shared many deeply personal and intimate stories with the understanding that employees would protect their private information. Employees selectively excluded certain donor narratives from their written records (e.g. names of partners, family members) and certainly from their public records (e.g. conflicts with family members). Nevertheless, personal narratives helped establish a social bond between donors and cryobank staff at one end, but unbeknownst to donors, could also lull them into a false sense of security and trust, resulting in the disclosure of a fact, which could get them disqualified.

In the course of their interactions with donors over time, many cryobank employees came to know their names. Some even admitted to addressing anonymous donors by their first names even though they were aware that they were not supposed to do so. One employee explained the social awkwardness of addressing a donor by his serial number or even with a "hey." It was easier to talk about donors in third person or represent them by their serial numbers when talking *about* them, rather than when talking *to* them. For the employee, names were personal and facilitated a bond between donors and employees, which was important for establishing trust. Cryobank employees *wanted* a relationship with donors, and addressing by first name was an act, which signified recognition, acknowledgement, and respect – cultural values that helped build trust between two parties. Cryobank employees were not above likening donors to themselves and their kin. As female employees typically interacted with donors at my field sites, I overheard some elder female employees refer to donors as sons or nephews, checking up on them to make sure they were eating well and balancing their sleep and study

times[28]. Another female donor coordinator shared how she would sometimes discipline young, college-going donors by withholding their "allowance" (reimbursement for donation) until the end of the month if she found out that they had been out "partying all weekend." Younger female staff would sometimes speak of donors as a possible mate or brother. Sometimes, connections were established in unexpected ways. One cryobank employee revealed during the course of their interaction that her daughter went to the same university as the donor although she was in a different department. Cryobank employees further disclosed establishing close relationships with longtime donors, keeping up with their birthdays, anniversaries, graduations, birth of children (some donors were married and had children of their own). The boundary between public and private was a permeable one even though some boundaries remained clearly defined such as employees could not discuss donor or recipient information outside the cryobank. Within the cryobank however, the boundaries between public and private became more ambiguous and overlapping. How did cryobank employees then communicate these differences to donors?

Communicating Private Information at Cryobanks

The need for maintaining privacy seemed to fluctuate with the change in donor status. Anonymous donors were contractually prohibited from searching for or publicly disclosing identifying information about recipients. They were also discouraged from sharing their donor

[28] As discussed in the introduction, upon asking the reason behind why donor coordinators were all women at my fieldwork sites, I was informed that the matter happened to be coincidence, as some of the previous donor coordinators had also been men. Still, some employees, both male and female were of the opinion that women were better socialized than men to maintain social relationships. Moreover, they claimed that donors found women less threatening and easier to confide in. As mentioned previously, cryobank employees suggested that men found it less threatening to communicate with female staff than with male staff. I am also inclined to think that women were strategically placed as donor coordinators based on the idea that donors could lower their guard and reveal aspects about themselves that they would not otherwise reveal in conversation. Then again, the converse might also be true and donors might not always feel comfortable discussing certain issues with members of the opposite sex.

status with intimate partners, friends and family members (although cryobanks could not legally prevent or penalize them for doing so). Prospective donors, on the other hand, were encouraged by the marketing staff at some cryobanks to *share* information about the cryobank's program with friends, and were rewarded prizes such as movie tickets for bringing in friends and relatives who could be prospective donors. In the eight meetings between donor coordinators, anonymous donors, and prospective donors to which I was allowed access, donors did not question how their private information would be protected. Notably, cryobank employees did not tell donors that they would be anonymous. Anonymity was not a term used to describe the protection of donor information. Donors were explained that cryobanks had two kinds of programs (1) anonymous donor program where men could choose to remain unknown to both the recipient and offspring and (2) open donor program, where men could choose to be unknown to the recipient at the time of her insemination, but that any resulting offspring had the option to ask cryobanks for donor-related information at the age of 18. Donors were assured that their confidentiality would be protected. At times, the word privacy and confidentiality were used interchangeably, but anonymity was never used except to describe the program. In other words, I did not hear the phrase, "We will protect your anonymity."

Donor coordinators had at hand a checklist that they went through as part of their protocol with each prospective donor. For example, donors would be explained that their identification number or code was given to them to protect their "confidentiality" and that they would be identified by this code when they received any paperwork from the cryobank. Confidentiality was sometimes explained as identifying information. "We would never give out your name, your date of birth, where you went to school, your adult picture, anything that can be

identifying. And likewise with our clients, you obviously can't get their names or phone numbers or anything like that," clarified one donor coordinator to a prospective donor. Another donor coordinator substituted the term confidentiality for "privacy" but used similar descriptions about not sharing identifiable information about the donor or his family. Donors were instructed to inform cryobank employees every time they changed their mailing address or contact information. Some cryobanks hired private investigators to look up donors if they failed to remain in contact. Hence, donors could be traced, even when they did not want to continue contact with cryobanks.

I found that in the meetings between donors and cryobank employees, donors rarely asked questions pertaining to how their privacy and confidentiality would be protected. There was an understanding that cryobanks would protect their private and confidential information. Most donors were concerned about the possibility of being identified and forced to pay child support in the future. This apprehension of being contacted by unwanted recipients was a common concern regardless of marital status or age. At times, when donors appeared unsure of how they would feel about contact with future offspring, cryobank employees advised them to choose anonymity. At these cryobanks, anonymity was a reversible option, which could be reconsidered (unlike identification, which could not be reversed). At other cryobanks, however, *certainty* was viewed with suspicion, especially when donors gave cryobank employees the impression that they had not thought through their decision enough. Donors were, therefore, instructed to take more time to reflect upon their decision. During one meeting, a donor coordinator did not allow the donor to write his status down as anonymous despite his arguing for several minutes that he was clear in his decision. "But I'm telling you, I'm positive I want to

be anonymous, why I can't I write that now?" he asked perplexed. The donor coordinator responded, "Next time, when you come in for you next visit to sign the consent form, write it then. Right now, go home and really think about it. We want donors to be sure."

For the cryobank employee the decision to be anonymous was a grave one that required serious consideration of long-term consequences. Donors were not only responsible for their gametes, but also for what their gametes could potentially become. Donors were asked to envision a yet uncertain future, their signature on the consent form acting as the only seal of certainty – or was it? Some bioethicists cast doubt on consent forms signed far in advance of an event. Knoppers (1993:183), for example, questions the validity of acquiring advance consent for an anticipated future date. She observes, "What normal contract concerning an issue as important as renouncing or assuming civil status in relation to a non-existent, future child would be considered legally valid on the basis of an anticipatory consent given two decades before its realization?"

Some cryobanks did not think it fair to make the donor consent affirmatively to an event, which had not yet come to pass. According to the director of one cryobank, "Regardless of various declarations made by the donor about their willingness to have or not have contact with a child, they still have civil rights like all of the rest of us and, therefore, can change their minds about what they want to do." The cryobank's policy allowed donors to reconsent two decades later if the offspring wished contact. Anonymity was considered changeable and modifiable with circumstance for this cryobank. The donor's word could not always be accepted as bond because he had the right to change his mind, a civil right afforded to him by the state through its non-interference in his personal matters. The cryobank's policy was flexible enough to take into

consideration future uncertainties and ambiguities in the donor's life, yet it posed another problem to the validity of contracts and consent forms. If donors were allowed to change their minds, then contracts and consent forms were a mere formality lacking any binding. Some cryobank directors found such an idea unacceptable.

"I am in favor of [the] open donor [program] if you do it from the beginning," commented one cryobank director. "I think that individuals who want to be open should be participatory and open from the beginning, not "when and if I decide I'm going to be open." It should not be that I turn around and say, "*Now* I want to have it." You can't do that. That's really unfair for the participants because you're putting some expectations on the children." The cryobank director's statement brought up once more the dilemma cryobanks face when trying to weigh the conflicting rights of donors, recipients and offspring. For the director, giving the donor an option to change his mind about his status was unethical to the child who could come to expect a meeting with the donor because it was contractually promised. The donor's desire to change his status was interpreted differently across cryobanks, depending upon internal policies and personal beliefs of cryobank directors and employees. At one cryobank, the donor's uncertainty was a disqualifying factor from the program.

During my fieldwork, a few prospective donors were disqualified from the program because they failed to reach a conclusive answer about their status. One incident was particularly prominent and concerned a graduate student from a renowned city university. The young man was conflicted between his decision to be an anonymous donor or an open identity donor. "I told him you had to make up your mind. Either go one way or the other," said the director who finally decided to disqualify the donor because of his uncertainty. "He tried to tailor the whole donation

program to his needs, trying to find other alternatives so he could still be a donor: 'Okay, can I be this or can I be that? Can I be an anonymous donor now or can I start off as a known donor and then switch?' I said, "No! What do you mean? Is this a joke?" The cryobank director suspected that the man was attracted to being an open donor because of the money. Many cryobanks paid more money to open identity donors because of the assumption that fewer men would volunteer to reveal their identity otherwise. There were no systematic longitudinal research studies that confirmed or denied this assumption. Many of the apprehensions came from the cryobank's own experiences of donors as well as from reading about experiences of other cryobanks in countries where donors were compelled to disclose their identity. The paradox was that cryobanks offered more money (immediate short-term benefit) to attract open donors into the program, but did not want to hire men who admitted to being drawn in simply for the money as this made apparent the starkness of the commercial transaction (see marketing chapter for details).

For the cryobank director, not only did the donor's indecisiveness translate into monetary greed, but his desire to gain greater control over his future in a way that foregrounded his needs at the expense of the future offspring, not to mention the authority of the cryobank, portrayed him as vain, selfish, irresponsible and short-sighted in the eyes of the cryobank director. Contrary to what some courts had ruled (e.g. People V. Sorenson 1968), a sperm donor clearly did not have the same role as a blood donor (short-lived responsibility, immediate payment). The sperm donor may not have been labeled a father, but he was expected to bear the responsibilities of one without parental rights, however. The decision to be or not be identified had to be approached with conviction because it was unalterable.

At yet another cryobank, a donor's "anonymity" was short-lived and temporary, serving only as a tool to allow donors and recipients the time to mentally and emotionally prepare for contact. The cryobank director had a strict identification-only policy based on his personal philosophy that children had the right to know about their biological origins. Accordingly, recipients and donors were unknown to each other at the time of the recipient's insemination. Cryobank policy required recipients to initiate contact with the donor within the first three months after the birth of the child. If recipients failed to make contact by the child's first birthday, the cryobank director initiated contact. "Anonymity" allowed donors and recipients the initial protection from unwarranted contact as not all inseminations resulted in pregnancies and not all pregnancies resulted in birth. The cryobank director arbitrarily chose the three-month time period for contact, assuming it would give recipients enough time to settle in after the birth of the child and psychologically prepare themselves for contacting the donor. The donor, on the other hand, had a less active role in initiating contact. "Anonymity"/identifiability was, sometimes, a choice the donor could make with some room for negotiation, and sometimes the choice would be made for him.

For recipients, notably, choosing an anonymous donor did not necessarily mean that they wanted to exclude his presence from their family. Some sperm bank employees revealed that recipients, especially working and middle class single women and lesbian couples chose anonymous donors because of the relatively less cost of their sperm vials[29]. Most anonymous donor vials cost between $400-500/ vial and open donor vials cost between $500-600/ vial. As

[29] My use of class here is in the Weberian sense of capital that typically corresponds with income, profession and education.

some recipients required more than one vial to conceive, total costs could quickly escalate. Cryobanks justified the higher costs of open donor vials because it cost them more to track and maintain contact with such donors. The costs were then transferred to the clients.

Millennium 2000 and Anonymity Under Fire

> "We have the responsibility to recognize that the people who purchase donor semen do it with the understanding that the donor will remain anonymous and we maintain that. That's just the silent majority we don't hear from. People that want things changed are those people in the social media and so on, and we do respond to those people in different ways, but the majority of the people want to stay the way the rules were when they purchased the semen."

- Cryobank Director 1

> "It's not the silent majority [who want to do away with donor anonymity], it's the vociferous minority. They are driving themselves to the point where they need to know. In French, there's a term for it - when you turn around quickly, you say "faire vôtre face." So [recipients] turn around all of a sudden when they realize, "Hey, I made a mistake [by choosing anonymity]! Let me try to correct it." Well, on whose back are you going to ride to correct it? Who are you going to blame? So, they're blaming the sperm banks. They're not blaming themselves. They're saying, "Sperm banks do something about it! We are demanding that the information be released now!" Donor Sibling Registry? I think it's a chat room approach, a Facebook approach. You can't have that. You have to be able to connect the dots, you can't just say, "I used Donor 665." Which 665 did you use?

- Cryobank Director 2

> "I think that at least the traditional couples who sought sperm donors really did want to have the donor to be anonymous; they did not want the donor to be part of the family structure at all. However, I would like to point out that that child wasn't part of the agreement. The parents and donors were. I will submit that parents don't have the right to make decisions for the children, that at some point, the child has their own rights and interests that may be different than the original parents'. That's why I gotta get out of the business before those kids reach age 18 [laughter]!"

- Cryobank Director 3

From the late 19th century until well into the 1980s, one of the main arguments in favor of donor anonymity and secrecy of artificial insemination was to safeguard the welfare of the child. This somewhat paternalistic position was proposed to save the donor-born child from the psychological trauma of knowing that his biological origins were not the same as his social upbringing. This secrecy policy has come under fire in recent years, more so since the 1990s as donor-born offspring reach adulthood. Certain factions of public opinion claim a rights–based, biogenetically-oriented stance for donor-born offspring to know their biological heritage. According to the pro-donor-identification groups (comprising of donor-born offspring, activist groups, parent support networks, bioethicists, philosophers, child rights and other human rights agencies) anonymity may have worked to the advantage of donors, recipients and cryobanks, but it was, arguably, not in the best interests of children. For these groups, children have the right to know their origins for their physical and emotional well-being. Not knowing biological origins is not only emotionally traumatizing, but may also result in the deprivation of important biogenetic information, which might put them at a disadvantage especially if a disease can be prevented or treated with early detection.

Haimes (1993), however, finds moral rights-based claims problematic in that they construct openness and truth as unproblematically "good" and secrecy as unproblematically "bad." Merrick and Blank (2003:2) further note that many rights-based claims pit rights bearers against each other because of fundamental differences in opinions and interpretations about what constitutes a right, and who should have rights. Conflicts result because there are no clear hierarchies or priorities of rights, leading to their overlap. Rights, although revered as moral

constructs, also have an important legal component and must exist within a legal framework in order to be protected. Moral rights are not always the same as legal rights and currently, there exist no federal or state laws, which mandate parents to reveal the child's origins (whether from "natural" or assisted birth). Additionally, the language and rhetoric of rights and the weight attributed to them is never static, but shifts with changing social values and technological breakthroughs (Merrick 2003). Ideas about the "welfare of the child" are not the same as they were a decade or two ago and will probably not be the same in another decade or so. Up until the early 1980s, the general consensus in policy and practice was to protect children from the information of their "missing" genealogy as it was considered to cause them life-long psychological harm. Social scientific literature on adoption shows how issues of anonymity, privacy and secrecy were managed between adoption agencies, birth parents and adoptive parents. Modell (1994) observed how the adoptive child was given a new birth certificate with names of the birthparents systematically erased and replaced by names of the adoptive parents. Birthparents were expected to forget the child, adoptive parents were expected to take on the characteristics of birthparents, and adopted children were usually not privy to information about their genetic ancestry for their own welfare. Yet, this notion of "the child-as-if-begotten, the parent-as-if-genealogical" continued to privilege genealogical connections, even as it tried to erase them. A latent tie to biological kin remained, which threatened to breach any contractual vows of confidentiality and privacy of the adoptive family or birthparents, if the child learned of his or her background and decided to trace the birthparents, or if the birthparents and adoptive parents decided to revoke their privacy contract.

Yet once, contact was made, what were to be the roles of these strangers who were now

linked together by biological and social ties? Adoptive parents, too, had a relationship with the birthparents as both shared the child. The disclosure of the sperm donor's identity carries a similar dilemma in that the roles and responsibilities of donors remain unclear even though courts specify what donors are *not* (i.e. legal or intended fathers). If donors cannot be imagined as fathers (as compared to birth*parents* in adoption because they have participated in the birth of the child) then what must their role be in the life of offspring who seek their contact? Clearly donors are not sought out by offspring for their legal or social role, but because of shared biology. Yet, there are no metrics, which define what constitutes or should constitute this relationship. Moreover, resemblance talk among families based on likeness ("he looks just like his mother; her nose resembles her grandfather") reinforces genetic connection as the norm, and perpetuates a sense of difference in families created through assisted reproduction who may be left wondering "who is the other half?" (Becker et. al 2005; Wolff 2004). The media, too, plays a role in romanticizing donor and offspring relationships, featuring stories of donor-born offspring in search of their long lost "fathers." Cryobank catalogues further perpetuate the preoccupation with physical appearance, resemblance and likeness, not only to recipients and their partners but to local and global celebrities and cultural icons.

Today, the pro-donor-identification lobby has been vocal enough to influence and change public policy on donor insemination in much of Europe, Scandinavia, Australia and New Zealand. Sweden was the first country to abolish donor anonymity in 1985, giving donor-born offspring the right to obtain identifying information about their donor upon reaching the age of 18. Austria and Australia followed suit in 1992 and 1995 respectively with information available for Austrian donor children from age 14. Similar laws were passed in New Zealand, Germany,

Norway and the Netherlands. The UK joined this group with the implementation of the Human Fertilization and Embryology Authority (Disclosure of Donor Information) Regulations 2004, from 1 April 2005. Once they reached the age of 18, children born from ova or semen donated after 1 April 2005 had the right to obtain identifying information about the donor. Previously, they only had access to non-identifying information, including the opportunity to ascertain whether they might be biologically related to a prospective marriage partner.

From the perspective of recordkeeping, the argument goes that a centralized, federally backed donor registry would allow greater reliability of tracking and control of donor and recipient information. Yet, there are no laws compelling recipients to report donor-inseminated births. Even if such laws existed, they would be hard to police without the help of the recipient's physician. This is not currently possible because of doctor-patient privacy laws. Hospital birth certificates do not require patients to list methods of conception or differentiate between sperm donors, biological, or adoptive fathers within heterosexual couples. As federal law considers procreative liberty a private choice, there has not been any initiative so far on the part of the US federal government to establish a national registry. US cryobank directors, nevertheless, fear loss of control over information that is technically the property of their institution. Moreover, many cryobank directors see themselves as guardians and trustees for their donors and clients who entrust them with the ability to safeguard their private information. Loss of control and authority over donor and recipient data could also result in their loss of privacy and confidentiality due to a third party's data mismanagement.

Donor privacy has already dwindled in recent years with the creation of non-profit initiatives such as Ryan and Wendy Kramer's Donor Sibling Registry, an unofficial online

registry set up by the mother and son duo in September 2000, five years before Ryan Kramer traced his sperm donor[30]. The registry claims on its web site to connect "thousands of members" i.e. donor-born half-siblings with each other and with donors. Cryobank directors are skeptical about whether such connections are indeed authentic or legitimate – or as one cryobank director put it: a casual social networking/Facebook approach – because all cryobanks have their own internal methods for anonymizing donor data. Nevertheless, donor sibling registries are a physical manifestation of the desire for connection between biological kin. What I find most interesting is the contradiction between the "open" face claims of the registry for sperm donors and cryobank donor records, and the various levels of privacy it upholds by only allowing access to registered members, requiring a membership fee, keeping separate web pages with usernames and passwords for donor half-siblings, advising donor-born offspring not share their private information including usernames and passwords with "other families"[31]. Perhaps, most ironic is the role reversal of the DSR and cryobanks, where sibling registry owners now wish to exclude access of *their* private information from cryobanks. In their user policy, the registry owners warn "lurking" cryobank employees, journalists and researchers to not invade the privacy of its members by disguising themselves as recipients and offspring, and instead collecting their personal data. Thus, the adoption of pseudonyms by those who wish to remain unidentified, and claims for privacy are being exercised by various actors in quite traditional ways – to protect from possible harm or risk, to prevent unauthorized access, to obscure, to participate without being identified – even as claims are made for its abolition.

[30] Source: https://www.donorsiblingregistry.com/about-dsr/history-and-mission/ (last accessed December 5, 2011).
[31] Source: https://www.donorsiblingregistry.com/user-policy/ (last accessed December 5, 2011)

Conclusion

While anonymity may technically be difficult to uphold, and privacy and confidentiality can be breached, they are useful tools because they allow a certain sense of freedom from responsibility, accountability, and the anxiety associated with it. Anonymity, privacy and confidentiality provide some measure of relief (temporary though it might be) that one's information, including information that may be potentially embarrassing, harmful or sensitive is under reliable control. Anonymity has a spatial and temporal component to it. Men who sign up to be donors may be at a stage in their lives when they don't want to be parents or are unsure about what their relationship status will be 18 years from the time of donation. Anonymity "buys time" to suspend such decision making to a relatively more distant future. Once relinquished, however, the process of identification cannot be reversed. Notions of anonymity change with technology, beliefs and laws. Moreover, what comprises private information is interpreted in different ways by different individuals, even in cases when formal/ legal definitions are known. In my fieldwork examples, the cryobank employees' cultural values, at times, preceded over standard procedures. Social mores dictated that employees address anonymous donors by first names even though they were aware that they were breaching standards of anonymity. Donors were also known to share their "secret identity" with family, intimate partners and friends even though they were advised not to do so. Thus, the concept and practice of anonymity were flexible enough to encompass multiple meanings. While anonymity represented avoidance, delays, concealment, dishonesty, it also represented freedom, relief, and control.

CHAPTER 4

Marketing and the Representation of the Donor's Social Identity

In 2009, California Cryobank announced its Celebrity Look-A-Like program. The sperm bank's intention was to "humanize" the otherwise alienating process of artificial insemination by providing prospective clients with non-identifying information about the donor while simultaneously concealing his anonymity. [32] Prospective parents could now scrutinize photographs of celebrities who resembled the cryobank's donors to get a visual image of what their potential offspring might look like. A team of California Cryobank employees spent several months matching donors to their celebrity look-a-likes. On October 20, 2009, ABC Nightline featured an interview with California Cryobank's communications manager. The news agency while critiquing the program as the latest trend in designer babies, nevertheless framed it in sensationalized language:

> "What if you could "birth" it like Beckham? In other words, what if you could deliver a baby boy who would grow up with the chiseled good looks of the international soccer star David Beckham? Or maybe you prefer a baby boy with the matinee idol visage of Ben Affleck? Or a baby boy who will one day resemble Duane "The Rock" Johnson? Celebrity worship, it seems, has gone *in utero*. With the help of the California Cryobank fertility clinic in Los Angeles, your child might actually look like that star. It's a service that's bound to cause confusion over the question, "Who's your daddy?" Scott Brown, the director of communications at California Cryobank described the characteristics clients sought in the donors: "It can be the shape of the eyes, the nose, the mouth, any specific feature. It can be the shape of the head. It can be the complexion. It can even be the hairstyle because you're talking about [what] someone looks like. That's what we're going for. Right now, the top guys on our list are Paul Walker…Ben

[32] ABC Nightline interview with Scott Brown, Manager, Communications, California Cryobank. http://a.abcnews.com/m/screen?id=8873549&pid=26 (Last accessed: April 4, 2010).

> Affleck… Scott Caan… Brett Favre…Jeremy Shockey. It's a pretty wide range of the guys."

The news feature made genetic inheritability seem like a simple, direct process from the donor to the child without any mention of the role of the mother or the environment. Also missing from the picture was any mention of the possibility that gametes could result in the birth of baby girls as the zygote contained an equal number of sex chromosomes. Perhaps from a marketing perspective, the images of Brett Favre or Duane Johnson lent themselves to easier imagination of baby boys than baby girls. It appeared that the intention was to portray sperm donors as possible sexual partners for recipients. The sperm donors' bodies were not portrayed as a whole, but as a pastiche of body parts each of which could be separable, their genetic expression controllable. A donor could have the nose of Keanu Reeves, jawline of Brad Pitt, and mouth of Will Smith. This pastiche of physical features was then reassembled in the body of the donor, giving consumers the impression that physical traits were somehow transmitted from donor to offspring in a simple and systematic manner. The cryobank's web site focused heavily on the donor's looks, provoking recipients to be curious about the donor's physical appearance.

> "Have you ever wondered if your favorite donor looks like anyone famous? You know how tall he is and his hair and eye color, but wouldn't it be great to have an idea of what he really LOOKS like? Now you can find out with a CLICK of your mouse!"

However, this message was followed by a disclaimer:

> "CCB Donor Look-a-Likes™ are judged to be the best of our subjective abilities. Whenever possible, more than one celebrity is listed to give you a better general sense of what the donor looks like. No celebrity is meant as an exact match for any donor, nor should you assume that your future children will look like any celebrity listed. At times, two or more celebrities listed for a single

> donor may not necessarily resemble each other. In these cases, consider the fact that many people look like both their parents, without their parents actually looking like each other."

The disclaimer acknowledged that cryobank employee decisions to match donors and celebrities were subjective. The comparison of donors and celebrities with biological kin is intriguing because donors do not have biological ties with the celebrities they are subjectively made to resemble. However, despite this subjectivity, the advertisement claimed it aimed to give recipients a "better general sense" of the donor's physical appearance. While the advertisement does not detail exactly how this "general sense" is conveyed, my own interpretation is that similar looking celebrities lead one to imagine a donor who resembles them. On the other hand, the converse can also be true and more celebrities can also make the donor's visage more difficult to imagine. From the point of view of protecting the donor's identity, the cryobank's advertising message appears counter intuitive at first glance. Why would a cryobank spend thousands of dollars and labor time on a campaign only to negate its effectiveness? On the one hand, the marketing message prompted recipient curiosity about imagining what the donor "really" looked like. On the other hand, it cautioned recipients not to expect that donors or offspring would actually resemble the celebrities with whom they were compared. Upon close reading, however, one can see that the Celebrity Look-A-Like campaign is actually an exercise in identity management by superimposing another face or parts of a face on the sperm donor. In a previous chapter, I observed that cryobanks must manage donor anonymity. If anonymity is associated with facelessness, as appears to be the case in cryobanking, then putting another face or parts of several faces on the donor is an exercise in identity management. I use the term "identity" in this chapter to refer to the donor's public persona – the social traits attached to his

personhood that make him identifiable to and connect with the public. These consist of promotional materials comprising information deemed non-identifiable, and appearing in donor profiles, brochures, catalogues and other promotional material.

The sperm donor's identity is a patchwork of images, voices, narratives, and desires constructed at the interstices of discourse and interactions between donors, sperm banks, recipients and regulatory agencies. It incorporates into itself physical resemblances with celebrities, expressed recipient desires and imaginings of ideal partners, cryobank staff expectations and appraisals, regulatory requirements, and aspects of the donor's own personality – whether traits he already possesses or ideals he wishes to attain. As I show below, the work of imagination aided by the donor's facelessness plays a primary role in the creation of desirable donor identities. Imagination allows cryobank representatives the freedom to stitch together various piecemeal narratives about donors, enhancing certain characteristics while omitting or downplaying others. The donor's identity is based on the many different imagined and expressed expectations of all the actors involved in the donation process. Donors project a front that they expect would appeal to cryobanks and recipients, cryobanks project images of donors that they imagine would attract recipients, and recipients model donors on their ideal sexual partners or mates.

This chapter examines the social construction of the donor's public persona as represented in donor profiles and catalogues. I show how, in addition to risk and safety requirements discussed in previous chapters, notions of quality donors are partly dependent on the ways in which cryobank employees represent cultural and social traits they assume will be valued by recipients. I follow the process of donor recruitment focusing on how men have to be

"donored up" to fit desired social traits in donor profiles. Men must learn to respond in ways that appear altruistic and that satisfy standards of acceptable, socially desired behavior. Identity making and management is an active endeavor on the part of both donors and cryobank employees.

Cryobanks as Storytellers: The Role of Imagination

Writing in the context of global cultural processes and global flows of ideas, objects and people, Appadurai (1996:31) calls for the acknowledgement of imagination as a social practice and a social fact, which is key to all forms of agency. "No longer mere fantasy (opium for the masses whose real work is elsewhere), no longer simple escape (from a world defined principally by more concrete purposes and structures), no longer elite pastime (thus not relevant to the lives of ordinary people), and no longer mere contemplation (irrelevant for new forms of desire and subjectivity), the imagination has become an organized field of social practices, a form of work (in the sense of both labor and culturally organized practice), and a form of negotiation between sites of agency (individuals) and globally defined fields of possibility."

I would like to apply Appadurai's concept of mediascapes to the landscape of narratives and images created in the marketing of donors at sperm banks. The image-centered, narrative-based accounts and "strips of reality" about sperm donors that such marketing produces and features on web sites, brochures, and catalogues are also a form of work, which engage with recipient imagination in complicated ways and result in complex relational experiences with donors, certainly at the level of imagination, but also with the potential to materialize in the future. As producers of expert knowledge and privileged narratives on the products and processes of sperm donation, cryobank representatives are also storytellers in that they actively

draw upon words and images to provoke recipient imagination. Similar to Lippman's (1994:12) description of biomedical experts, cryobank representatives establish their expertise and authority through a "wealth of raw material from which to choose when they construct their explanations, their stories, for the conditions that interest them." They are producers of cultural discourse in that their ideas, beliefs, methods and decisions are embedded in the morals and values of the society in which they live. Serving as intermediaries between donors and recipients cryobanks must protect the identities of both parties unless they consent to be identified. This means that any physical connection between donors and clients is broken, in some cases for good, and in other cases until a time when the offspring reaches legal adulthood and desires contact. This broken link is nevertheless reestablished in a different way – through carefully tailored stories and narratives. Cryobank employees exercise considerable discretion in framing and moderating these narratives for regulatory agencies and recipients.

In striving to balance what is biologically valued (sperm as a pregnancy resource) and what is socially valued (the social status of the donor), cryobank employees become co-producers in the existing social order around cryobanking. In the following sections, I show how cryobank representatives manage the sperm donor's identity by selecting certain kinds of men and socially conditioning them to embody the characteristics they believe will appeal to recipients (and future offspring). While certain donor characteristics are strategically highlighted at the expense of others to comply with recipient demands, cryobank staff do not give in to all that recipients want, especially not when recipient demands conflict with the donor's wish to remain unidentified to recipients. Cryobank staff also influence and shape in subtle ways

recipient needs to know the donor. Mediascapes work to establish connections between recipients and donors even though both parties are physically separated through time and space.

Cryobank Marketing in Historical Perspective: The Role of the Internet

Since the late 1980s, much of cryobank marketing has been targeted to online audiences as the industry's main target market – middle to upper class professionals – are presumed to have internet access. The internet has served as both bane and boon for the industry. It has allowed cryobanks to break physician monopoly over artificial insemination and advertise directly to clients. But it has also resulted in greater visibility and scrutiny from various actors and stakeholders: regulatory agencies, consumer rights and infertility support groups, competing cryobanks, the media and so forth. One cryobank's marketing manager commented on the pressures facing the industry as follows:

> "Prior to 10 years ago [1990s], there were no communities out there. People who were using our services not only wouldn't talk about it with their families and friends, they certainly wouldn't go public and look for it. So not only do we have to provide great service to our clients to make them happy we have to be aware that every client that we deal with, is probably going to have some attachment to some special interest group that could have a huge reflection on future business if we give them a bad experience. So everybody has a big voice now, right? It's not just writing a letter and complaining to the company that you didn't like our service. It's posting a blog saying [our sperm bank], they were terrible, the specimen was bad, blah, blah, blah. We've got to avoid that."

Online media has rendered cryobanks more visible to a wide range of audiences, allowing them to participate in public commentary. Cryobanks, therefore, feel more pressured to put up a strong public front as negative ratings are more likely to hurt business if unjustified. The internet has

decentralized physician knowledge and authority, and facilitated the role of the patient advocate, a role which now demands that patients assume responsibility for seeking alternative knowledge (i.e. outside of the physician's advice) about their ailments, so that they can choose the most appropriate form of treatment for themselves. The availability of open source web sites on biomedicine and health (e.g. WebMD, Healthline etc.) have contributed to alternative sources of biomedical knowledge. Cyberspace is the site of connection between virtual patient advocacy and support groups, who "voice," their ideas and opinions through public blogs, bulletin boards, email listservs and so forth. Anonymity and secrecy are seldom possible on the web and sperm banks can only control what they post on their web sites not what anyone else says about them on other forums. Cryobanks now have the additional task of building good relationships not only with their clients, but also with the advocacy groups that the clients might be a part of, with the hope that these groups also become their advocates.

At one end, cryobanks are constrained because they must fulfill recipient demands to ensure good ratings in the market, at the other, they must also balance these demands against the need to protect the donor's identity. There are limits to the extent to which cryobanks will share donor information with recipients. Below, I describe the work of donor identity making and management at my fieldwork sites. I have divided the remaining chapter into three sections. The first deals with the social qualities cryobank personnel seek in "good" donors. Yet, these qualities do not suffice on their own; cryobank employees see their job as enhancing and adding value to donors to transform them into the products they hope recipients desire. The second section of this chapter deals with how cryobank staff respond to recipient demands, adhering to some requests while refusing or modifying others. The third and final section pertains to the

representation of the donor's persona in catalogues and profiles so that he is transformed from a vial of sperm into a figure who is familiar and desirable to recipients.

Identity Management Part I: The Selection and Conditioning of Sperm Donors

In her classic work *Reproducing the Future*, Strathern (1992:38) examines the culture of consumerism, remarking how choice is not completely dictated by consumers. It is marketing which determines what choice should look like. Products that are designed for selling are customized to anticipate consumer wants, "presenting back to the consumer 'choice' in the form of a range of products out of which 'choice' can visibly be made. To choose responsibly, our active citizen must know what is being offered, much of this knowledge being filtered through appearance: things must look what they are supposed to be. Apples must look like apples. One might say they have to be appled-up; varieties are selected for marketing which have the most apple-like qualities. Qualities essential to the realization of choice become displaced, as it were, from the product onto what is presented for the consumer's discrimination."

As products, donors and their sperm are also selectively chosen and marketed in ways that are meant to appeal most to clients. Yet, the choice of donors offered to clients is ultimately determined by cryobank staff. Sperm donors are selected because they possess certain qualities that are valued by cryobank staff and recipients. However, cryobank staff must work on socially enhancing these qualities to transform donors and their sperm into a product that recipients expect and are familiar with. Donors are not presented to recipients as a homogenous category (like Strathern's example of honey crisp apples). Nevertheless, they must possess certain general qualities that are culturally valued e.g. height, education, musical and athletic talent, intelligence

and so forth. Cryobank employees must further enhance these qualities through testing, evaluation and presentation.

Prospective sperm donors have to go through a lengthy screening process before they are determined eligible for the program. One donor coordinator showed me a recruitment chart, which was structured like a pyramid, the idea being that men must start from the bottom of the pyramid and work their way to the top. I could not help, but compare the similarities between the illustration of men in the recruitment chart competing to overcome hurdles to be inducted into the donor program and Martin's (1991) reference to the gendered scientific descriptions of the fertilization process involving millions of sperm competing to reach the prized egg. I was informed that the initial recruitment process took about three or four months during which each prospective donor was assessed by several cryobank employees. Men had to first fill out an online questionnaire providing detailed information about themselves and the reasons for their interest in the program. A cryobank employee examined the questionnaire and flagged any responses for ineligibility. Eligibility was determined by the prospective donor's willingness to provide both information about himself and his family history as well as comply with cryobank rules and procedures. Donor information was based on a "need to know" (i.e. regulatory mandate) and "nice to know" (i.e. marketing) standpoint. As one cryobank director explained, "There are things that we believe in as the right thing to do even though it's maybe not specifically in the regulations, and there's things that we do based on what people want." Some "need to know" questions included semen analysis results, medical and genetic history while "nice to know" questions pertained to education, hobbies, favorite books, quotes, music and so forth. The

information donors provided in response to these questions affected their social value and overall marketability.

Donor questionnaires included a self-evaluation portion where donors had to list their race and ethnicity, skin tone, hair and eye color, hair texture, height, weight, frame or bone structure, education, whether education was from an accredited institution, degrees obtained, profession, occupation, interest and hobbies, dietary preferences, alcohol, tobacco and drug related habits, condition of teeth and vision, marital status[33]. If married, men were asked to list the number of children. This gave both cryobanks and recipients an idea of previously ensured pregnancy. Questions relating to lifestyle, sexual health, physical and social traits were commonly mixed in together. I noticed that while questions about the donor's education, occupation, and other vital statistics were only asked once, questions about his sexual behavior were repeatedly asked in different ways to verify whether or not he was telling the truth.

Cryobank staff worried that men might hide aspects of their sexual behavior for fear of being condemned. Unlike degrees and transcripts, which could be verified, cryobank staff did not have independent means of verifying if a prospective donor engaged in high risk sexual behavior. Some cryobanks asked physicians who performed physicals on donors to examine their bodies for anal tears in order to determine homosexual behavior. Overall, however, the donor's body is not always a conclusive site of evidence and cryobank staff have to rely on the donor's honesty to self-report. Men are often not disclosed the reasons for their disqualification for fear that they

[33] Schmidt and Moore (1998) have observed that several sperm banks list race and ethnicity as their primary category of donor distinction, although some cryobanks have now replaced the term "race" with "ancestry". Since questions about race and ethnicity are classified along with biological attributes such as hair color and eye color, it appears to me that cryobanks may be classifying race and ethnicity as biological traits.

would make changes to their information and reapply to gain financial compensation. Monetary payment is used to attract donors, but is simultaneously seen as encouraging lies and deceit. Hence, all prospective donors are viewed with some skepticism and suspicion. Some cryobanks may take various measures to conduct background checks on their own: calling up other sperm banks in the vicinity to verify if the donor was employed elsewhere, scouring online email listservs, web sites and online message boards on sperm donation, and hiring private investigators to trace a donor's background if they suspect he is lying.

Men who are selected at the initial application stage are scheduled for a phone interview with a donor coordinator and asked to verify the information they have provided in their application. At this stage, if their verbal and written narratives are found to be consistent, they are called in for a semen analysis and a fasting blood draw to test for infectious diseases, sperm count, motility and morphology. Once the semen analysis report is completed and approved, the men are called in for a face-to-face interview with one or more cryobank staff, usually donor coordinators, but cryobank directors may also be present. The donor's initial application and telephone interview are reviewed and interrogated again in detail. Depending upon affordability, some cryobanks employ additional professional staff to interview donors, such as psychologists and geneticists. Once they pass this stage, men are qualified as full-fledged donors. Qualified donors are expected to visit the cryobank between one and three times a week to "deposit" a sperm sample. Sperm is tested every three to six months for FDA mandated infectious diseases as well as for certain common genetic diseases such as cystic fibrosis, alpha and beta-thalassemia, sickle cell anemia, Tay-Sachs, and Canavan Disease. Some cryobanks also perform chromosome analysis upon recipient request.

“Donoring Up”: Instilling Altruism

As noted in chapter 3, the idea of altruistic blood donation was first proposed by Richard Titmuss (1970). A social reformist, Titmuss (1971) sought ways to encourage societal cohesion. For him, a model based on financially driven blood transfusion was faulty because it encouraged lies and deceit. He proposed a system of blood giving and receiving that was not financially motivated, but rather, depended on the unselfish kindness of strangers. This euphemism of the “altruistically” driven “free” gift continues to dominate the organ and tissue industry, masking not only the commodification of bodies and body parts, but minimizing death and loss.

Social scientists have critiqued the language of gifting and altruism to show that the gift/ commodity dichotomy does not really exist (see Chapter 3 for a discussion on anonymity and gifting). Tober (2001) deconstructs the concept of altruism and claims that there is no such thing as “pure” altruism as even feelings of personal satisfaction that donors claim may be driven by self-interest. Her interviews with sperm donors reveal that the three reasons they “donate” is for money, to pass on their genes, and to help others. Further probing into what donors meant by “helping others” she found that the answers were egotistically driven. Donors believed they were helping disadvantaged recipients who were unable to have children. Reading donor essays and questionnaires where men were asked why they chose to become donors, I found the presence of what I call “rescue” language embedded in the language of altruism. Notions of rescue bring to mind Christian values of salvation and protection from harm. The donor’s claim to help others because he was blessed with great genes and wished less fortunate others to benefit from the same can be interpreted as a desire to help others. However, this desire is also based on an ego-driven need to perpetuate his genealogical lineage, even though he may never actually have

contact with the child.

Interestingly, I seldom heard the language of gifting used within cryobanks in conversations between donors and employees. The language of gifting and altruism only appeared on cryobank web sites, promotional materials and donor essays which were targeted at the *recipient*. Cryobank representatives were aware that pure altruism was not possible, but thought it important for the donor to leave something positive – a verbal or written legacy as it were – which would make the future child feel like it was worth more than just the product of "masturbating into a cup for money" as one cryobank employee put it. But men had to be trained to learn the language of altruism, just as they had to learn to feel comfortable exchanging their semen for money. My fieldwork shows that cryobanks simultaneously engage in the act of shaping donor attitudes towards sperm provision by luring men with the promise of money, but also subliminally teaching them the language of "helping others" through promotional materials.

The following interview excerpt from a cryobank director reveals how advertising was used in the early years of the industry (early 1980s) to influence men's social attitudes towards sperm provision:

> "We used to have an ad that I did many years ago on cable TV. It started with a dog, a very mad dog barking. It caught your attention. And that was to me something that…because you didn't expect it. And after it caught your attention: "We're recruiting sperm donors." So the ad came on, spoke a little bit…the agent saying all that. But it began with a dog. It had nothing to do with the ad, but when it played on TV, if you're watching, all of a sudden you say, what is this ad about? It's like a coca cola ad; it has nothing to do with coke, but actually they're advertising coke. It's just a subliminal message. And it came at the end and said where to call and all that. It cost like $6000 per month to keep it up. But that was in the old days when people were ordering sperm and you had enough money in the income base to allow for marketing."

For the director, budget constraints and limited airtime on television meant that the advertising strategy had to have a sure-fire way of gaining viewer attention. But the director's comments about subliminal advertising also imply that attitudes towards sperm donation had to be socially conditioned because sperm donation was not a common cultural practice. Money was used as an incentive to override social stigma and feelings of hesitation that men might feel about masturbation or providing their biological reproductive material to someone else. Some cryobank employees believed that the desire to give one's own reproductive material to someone else was not conventional biological instinct and, therefore, had to be socially shaped. One male cryobank employee summed up these statements in the following manner:

> "It's not a natural thing [sperm donation]. I'm not at the point that I need money that badly to be a sperm donor, but even if I were, I would think twice before I became a sperm donor because I could not live comfortably with knowing that there could be "little me's" out there that I have no relation with but they are biologically from my body. It kind of disturbs me. So, I think that would prevent me from being a sperm donor, regardless of whether I was anonymous or willing to be known. Just the fact that there are people out there that are willing to use my sperm to create their children and I know nothing about this person could be biologically connected to me is something that I'd rather not think about. I mean it doesn't make feel uncomfortable, but I always felt that if children were produced out of my body, they'd be my children and that's it. I think that's my personal greed that any children that get biologically formed out of my body are mine. I think it's a part of me that's out there and if that's the case then I would want to know and be a part of that, but being a sperm donor, that's what you do. You are not meant to be a part of their picture. And it's difference of opinion."

The male employee attributes "personal greed" rather than cultural and moral values behind his desire to have ownership of his reproductive material and its products. His use of the term "greed," implies a negative moral judgment on his part that his act is selfish, but that this

selfishness is natural and instinctive, whereas the act of donating to another is not. For him, the desire to own his genetic material and its products is so strong that he is not persuaded by financial remuneration (which is contrary to the business of cryobanking in which he is involved). He does not mention the role of his female partner in the co-creation and ownership of the child (although he is a heterosexual, married man). His idea of "little me's" indicates that he sees his offspring as miniature copies of himself rather than individuals who may bear resemblance to him and his partner, but are also products of their environment. The employee seeks both biological and social connection to the offspring and views the sperm donor's role as unconventional and extraordinary.

Almeling's (2011) research shows how many cryobank representatives expected and accepted that men were financially motivated while egg donors were expected to donate for selfless reasons. The cryobank employees in my research were of the opinion that altruism was learned behavior and had to be inculcated over a period of time. Some employees were of the opinion that men had to first be attracted with the promise of money while altruism came at a later stage as they realized the value of what they were doing. One cryobank employee observed:

> "Typically, you get a larger pool of donors if you start with the dollars. The altruistic thing for a 20-year old is a rather foreign concept. The anecdotal information I have from the people who deal with donors is that many of them are initially attracted by the money and then start understanding what it is they are doing and the mindset becomes more altruistic."
>
> *Me: What do you mean by altruism?*
>
> "That their motivation changes and they start feeling that it is a good thing they are doing, that instead of working at 7-11, they come donate. I don't think it's quantified in any way that's more the gut feeling that the donor coordinator and managers have."

Another employee similarly observed:

> "I think that the financial aspect definitely might appeal more to college students than somebody that has a full-time job. So, I think it really helps them while they're in college. But it's funny, because some donors will go to college and they'll mention that's the reason they started donating as the primary reason. But then they'll graduate and have full-time jobs, and they'll still be here donating. They'll be like, "You know, after being in the program for a little while, it made me realize that I was helping people, and even though I'm really busy right now, and I don't need the money anymore because I'm working full-time, it feels good to know that I'm helping people."

In the above interview, altruism is described as a desire to help others, but also an act that results in ego gratification ("feeling good"). Moreover, the idea of commodification is also simultaneously conveyed in that the cryobank employee views the sperm donor as a paid employee, only one who is paid to provide his semen to others than work as a paid employee at a convenience store. The employee's choice of a convenience store such as 7-11 instead of a professional job also indicates an element of social in that the donors he is thinking of (perhaps college students) belong to a lower social class. The assumption is that people in the lower socio economic strata are more inclined to provide sperm in exchange for money than those that belong to a higher social class (although as I show later, donors that are ultimately chosen must embody middle class values). Many cryobank employees believe that the desire for money in exchange for semen precedes the desire to help others. Yet, from the earlier interview with the cryobank director who discussed advertising on cable television, it appears that the concept of exchanging semen for money is itself a foreign one, which needs to be socially conditioned through advertising. The cryobank employee's comment about his "personal greed" not to share

his reproductive materials with other people also suggests that exchanging semen for money is not a culturally conventional act under most circumstances. Perhaps one domain in which semen *is* exchanged for money is prostitution and sex work. Sperm donors may also be said to engage in a kind of reproductive labor in that their bodies and bodily products are measured by market value (Tober 2001). The exchange of semen for money must, therefore, be couched in the language of donation and gifting to distinguish it from sex work. Yet, despite widely using the language of gifting, donation and "helping others" in their marketing campaigns and in their communications with donors and recipients, cryobank employees do not always attribute altruism to sperm donors.

Age, profession, and social class are seen as factors influencing donor motives. Younger, college students are commonly seen as self-centered, monetarily driven and seeking short-term gains, although some cryobank employees pointed out that there were some exceptions to this rule. In my own experience attending a donor recruitment seminar at a college campus, I found that undergraduate male students had more than one concern on their minds as they considered sperm donation. There was a curiosity about what the process entailed, which included the sexual aspect of sperm donation (e.g. collection rooms, porn and masturbation), the lure of financial remuneration, but also a concern for possible future consequences, moral and financial responsibility for the resulting offspring, and protection of personal identity. Yet, the majority of cryobank staff saw younger donors as less responsible. Cryobank staff also made frequent comparisons with egg donors claiming that sperm donors were "less involved" in parting with their semen as masturbation and ejaculation were "easy" processes compared to egg donation, which was a more "involved," "emotional" process as women were "more attached" to their eggs,

having to undergo extensive hormonal treatments with potentially dangerous consequences. Eggs were also retrieved through a surgical, non-sexual procedure compared to semen and it was easier to logically assume that women were driven by more than just money to be able to endure such hardship[34].

Addressing the topic of donors, commodification and altruism, one cryobank director observed:

> "The money factor is what attracts donors. If you take that away, they are not interested. So you have to say can I raise their level of altruism from 0 to 1, not to 10, by having them wait to get paid for a period of six months from being tested and coming at a regular time. You see, you have to raise…the carrot is always going to be there. How you get to the carrot is really how you can dictate their participation. And we dictate. You've *got* to come in once week, you've *got* to donate once or twice a week, you've *got* to come in! We have to do your testing on a monthly basis for you to get paid seven months down the road. If you don't do that, we don't pay."
>
> *Me: You mentioned that you want to raise their level of altruism. I'm curious…how are you defining altruism?*
>
> "Well, if one reviews what they put down and you read their: 'Why do you want be a donor,' the basic answer is, 'I want to help other people.' Second most popular: 'I want the money.' So, you go 50-50. Altruism is when you say I want to help other people. You maybe disguise it with, "I also need the money," but just by saying, 'I would like to help other people, I heard of other people that needed help and so on and so forth, that in itself…you're at least presenting yourself as caring for other people. Now what altruism is, is when you donate your sperm or blood or any other organ and don't get payment for it. And I have that as well. Altruism can add another component as when you reveal your identity. And I do have people who've done that, who've said I don't want to get paid. But, I think that what we also discover is egocentricity, where an individual thinks that he has such God-

[34] For an excellent analysis of how egg and sperm banks construct gendered notions of women as more altruistically driven and men as financially driven, refer to Almeling (2006, 2011).

> given resources that he wants to be able to help others achieve who he is, and indirectly see himself perpetuated in an indirect way, even though he'll never know whether there are children procreated from the sample. And I do have that individual too."

The director sees altruism along a hierarchical scale which is determined by commodification. He draws a dichotomy between commodification and altruism. The conditions of donor anonymity and the exchange of semen for money represent self-centeredness for him, the opposite of which – foregoing financial remuneration and disclosing identity – translate into altruism. According to him, donors are primarily driven by financial motives and altruism is a trait that cryobanks must teach them to adopt at least in language. The director seeks to teach altruism through discipline, by delaying financial gratification (the metaphor of the carrot representing financial remuneration) to such a time that donors learn to adhere to cryobank rules and procedures. The director is skeptical about whether altruism in the sense of selflessness really exists in practice, but nevertheless wants to verbally hear from donors that they are thinking of more than just themselves.

Paradoxically, many cryobanks foreground financial remuneration in various forms: free pizza, movie tickets, $75-$100 per useable semen sample and the convenience of setting up one's own donation schedule while also adding that money should not be the sole motive for donation. There remains uneasiness with the commodification of human gametes and children[35]. Moreover, psychologically, it is considered more comforting for donor-born offspring to know that they are worth more than the product of someone who wanted to pay his rent or receive

[35] Several social science scholars have analyzed the cultural controversies of the commodification of body parts. See for example Sharp (2006), Scheper-Hughes (2000, 2004 a, 2004b, 2006), Radin (1996) and Almeling (2011) among others.

money to buy beer. Cryobank web sites had separate web pages for prospective donors, which used specific language to frame the provision of semen as “donation” and “gift of life” to help build families and give suffering infertile couples the chance to have children. Men who were ultimately chosen as donors were those who could successfully internalize this language and repeat it back to cryobank personnel.

One cryobank used altruism, masculinity and heroism as a marketing strategy to attract donors from certain life-saving professions: firefighters, police and emergency medical technicians (EMT). The marketing campaign was influenced by the events of 9/11 in which individuals, especially men, from these three professions were regarded national heroes for saving lives. According to one cryobank employee:

> “I think those positions are always respected Maybe police, sometimes people have mixed opinions, because they get tickets or whatever. But I think in general, people have a lot of respect for them, but I think 9/11 definitely bolstered their image. It’s even more noble to be a firefighter now. Not everybody necessarily sees firefighters and police in action, but after 9/11, everybody saw the images of the firefighters covered in the soot, and that image stays with you…. So if we’re going to start taking guys without college degrees, we need to make sure that we take a narrow part of that segment, something that would be equivalent, maybe, to a college education.”

As the cryobank campaign focused on sperm donors, it excluded the message that women, too, had been part of the firefighting, EMT and police teams involved in the 9/11 rescue operations. Police, firefighting and EMT professions are associated with a valorized and romanticized sense of masculinity and strength where men risk and sacrifice personal safety for the benefit of the community. On the contrary, school teachers, bus drivers and janitorial staff may also consist of

male community workers, but these professions do not carry the same speed, urgency and danger as emergency service professions. The cryobank employee's words indicate a strong correlation between class and masculinity. Working class men without college degrees could only be considered at par with college graduates if they occupied the socially valued position of the working class hero. The marketing campaign's message portrayed rescue workers as physically strong and as ready to engage in the heroic act of rescuing infertile couples from their reproductive dilemma as they were to save lives of those in danger.

Whether the campaign has actually resulted in increased donor applications from rescue workers remains to be seen. At the time, I did my research, the hypotheses circulating at competing cryobanks were that masturbation for money was probably not considered a noble act by firefighters, police and paramedics and while the message of altruism and saving lives was conveyed in marketing messages, individuals who joined the military, police, EMT and firefighting professions were actually driven by the financial compensation and benefits promised to them. Thus, cryobank directors and employees had varying ideas of donor motivations, but many believed that monetary compensation was what primarily attracted donors. The paradox was that even though cryobank employees were skeptical of men who primarily expressed short-term financial motives, marketing and advertising messages focused on the promise of easy money, which attracted applicants with monetary motives.

On the other hand, the "financial lure" theory could not explain why there were occasions when even promises of a higher remuneration failed to bring in donors. As the example of the previously discussed employee shows, men may not always be persuaded by money. For example, cryobank personnel recounted how difficult it was to recruit donors of certain ethnic

backgrounds even though they were demanded by recipients. Some cryobanks paid men of racial and ethnic minorities double the amount they paid to "White" or Caucasian. So, while cryobanks would ordinarily pay donors $75-$100, some would pay donors of certain racial and ethnic minorities $200 per useable sample to encourage them to apply. However, cryobank employees reported that this strategy of paying more did not always result in an increase in the actual number of ethnically diverse donors. One cryobank employee shared that of the cryobank's current donor list of 116 donors, only two were African American while the rest identified as Caucasian. Another cryobank director similarly reported that out of the 20 recruited donors in the past year, only one was African American and one was part Hispanic and Lebanese while the majority identified as "White." Cryobank staff theorized that fear and suspicion of how their bodily products might be used probably prevented certain ethnic minorities from being donors, especially African Americans and Native Americans, who suffered long histories of slavery, exploitation and experimentation in the past (e.g. the Tuskegee syphilis study on African American imprisoned men). Hence, men had their own complex motives for choosing or not choosing to provide sperm, which did not always involve a financial motive.

Constructing Donor Quality: Selecting "Good Donors"

Although cryobanks considered recipient interests and regulatory agency requirements when selecting donors, they also had their own selection criteria, which did not always pertain to the quality of sperm. Donors were selected on the basis of possessing certain socially valued qualities. Cryobank staff saw themselves as enhancing these qualities to craft donors into marketable products. Staff often listed these various qualities together when describing their

ideas of "good" donors. One cryobank director described his view of a "good" donor in the following way:

> "The idea of a good donor…I can only think of a good donor is one who is…represents himself honestly because we don't check into the background obviously, that has a good health history and tests negative, has a good recovery from freezing, has a good count, maintains a religiously coming here within the schedule, adheres to our protocol, I don't have to run around after him. And a "bad" donor would be…well, a bad donor would never be in the program, okay? A "bad" donor would be a guy who starts for a month and then disappears."

The donor is being valued here not only in terms of the quality of his sperm, but also from the standpoint of cryobank convenience. Accordingly, good donors were those whose sperm could withstand semen analysis, but also those who were disciplined, independent, punctual, and obedient. I mentioned altruism as a quality that cryobank staff believed had to be instilled in donors through social conditioning. However, certain social qualities had to be present in men prior to their eligibility as donors. I mention a few of these qualities below.

Age, Emotional Maturity and Responsibility

I mentioned above that cryobank staff usually co-related donor age with responsibility. Younger donors were preferred because they had better sperm quality (sperm count, motility and morphology) than older men, who took a longer time to conceive on average. Additionally, as men grew older, there was a higher probability of transmitting certain kinds of genetic and chromosomal defects to the child (Kidd et al. 2001; Wyrobek et. al. 2006[36]). Many cryobanks

[36]See for example, the 2006 study led by scientists at Lawrence Livermore National Laboratory (LLNL) and the University of California, Berkeley, which shows that genetic quality of sperm deteriorates as men age. https://www.llnl.gov/news/newsreleases/2006/NR-06-06-01.html [last accessed: April 6, 2012].

also preferred to recruit younger donors because of the assumption that they had "cleaner" sexual histories than older donors[37]. Yet, cryobank staff worried that many young donors did not seriously consider their decisions to donate sperm and were only concerned with immediate monetary gratification. Employees would look for signs of "emotional maturity" in their donors. One donor explained emotional maturity in terms of the donor's age, social status and expected social behavior. Accordingly, college students were seen as emotionally mature if they could successfully adapt to an independent living environment on campus away from their families, display greater personal responsibility and exert greater self-control over social behavior. Donors had to maintain what one employee described as a long-term committed relationship with the cryobank rather than a casual "one-night stand." Cryobanks had to make a long-term financial and emotional investment in their donors and wanted them to be worth the investment. One cryobank director's words revealed how this investment affected the ways he chose donors:

> "You do have people who start for a period of two or three months and then decide that it's not good for them, so guess what? *I'm* stuck with the initial testing. *I'm* stuck with the vial. I can't do anything with the vial. I can only use it for research or throw it away. So that's a chance *I* have to take as a business man. So when I choose somebody, I have to look into their eye, I have to think what kind of individual this is to make sure that they at least stay with me for six months, come in twice a week, build up their inventory, because that is the basis of a sperm bank, of a *bank*. The only way a bank makes money is to have money. The only way I can make money is to have a donor sample. I can't have a donor come in once. Most people think that the donor comes in once and

[37] "Clean" was a term borrowed from urban slang by cryobank employees to refer to the donor's sexual health status. To be "clean" meant to be free of STDs. The reference is specifically made to the exchange of bodily fluids, leading to the notion that STDs "taint" or pollute the body in some way. The fact that term is only used for sexually transmitted infections and not other kinds of infections such as influenza, the common cold, gastroenteritis, which may also be contagious or contaminating shows how STDs are perceived as a threat to the prevailing moral order in a way that other air borne and water borne diseases are not.

> that's it…bye bye! How is that possible? I wouldn't even have time to collect enough data or know enough about the individual so we need to see him periodically; we need to see him on a regular basis that tells me what kind of individual it is."

The cryobank's director's self-reference as a businessman and comparison of the sperm bank with a bank or financial institution reveals that he sees the donor as a commodified investment from whom cryobanks extract labor and add value by improving and enhancing the product (sperm). According to the cryobank director, the donor's value is created extrinsically by cryobanks through investing physical, emotional and material labor. Good quality donors are those who bring in a sustained return on investment, who can obey instructions and be committed to the program. Cryobanks need some reassurance about their return on investment before they commit to investing in the donor. The director sets up his argument in the logical, rational language of economics. Yet, his method of selecting donors is far more intuitive and subjective, based on feelings and emotions from past experiences. He talks about gauging a donor's honesty and commitment to the program by looking into his eyes. For cryobank staff, a lot more is at stake than recipient and regulatory agency needs. They must first determine whether the donor is reliable and trustworthy as they have to deal with him on a daily basis. But, since there is no way to read the donor's mind or determine his intentions, staff look for outward signs of behavior and compare them with their own personal experiences and interpretations.

A donor's emotional maturity and sense of responsibility was judged in many complicated ways. According to one donor coordinator:

> "If there's a donor who seems to not understand what's going on, a donor for whom English is a second language – we have some international students, for example, where we know they don't

> understand what they're getting into, so that is in one way the same thing as immaturity, right? We want to make sure that they understand. You have a donor who doesn't even want to read the consent agreement. He's just like, "Okay, where do I sign? Ok, open…you make more money," – even though you don't [laughs] but, "Oh, you make more money here. Which program do you do? Is it quicker and takes a shorter amount of time and makes me the most money per month? I can donate how many times per week? Oh, I can do 10. My specimens are great." So [laughs] you get different comments that different donors will make and that will trigger your, "Okay!" [holds hand with palm facing forward making a motion to, "Back up! Keep your distance,"] and then we talk about it. So, the coordinator will tell me this guy is really immature. He is making a joke about everything, doesn't understand. And then we will disqualify the donor."

The donor coordinator sees incomprehension, eagerness, greed for money, and inappropriate humor as signs of emotional immaturity. She does not distinguish between men who are not *able* to understand because of a language barrier and those who do not *want* to or are unwilling to understand the complexities of their roles and responsibilities. For her, there is no difference in the two categories because the end result is the same: the donor does not understand his responsibilities. Sperm banks do not want to invest in foreigners with whom they cannot maintain a long term relationship and whose movement and travel they cannot monitor. Donors must live near the sperm bank's vicinity for regular and travel and easy accessibility, and must be traceable by the sperm bank in case cryobanks desire further information regarding their medical history or if the future offspring desires contact. Overseas donors are difficult to follow up on so they are not taken into the program.

Other employees indicated emotional maturity and responsibility as punctuality in showing up for appointments (which signaled that the donor was considerate of other people and

their time), maintaining a full time job and "good family life." All these qualities were considered synonymous with a donor's personality and reflected North American cultural ideals. Structural inequalities were seldom mentioned as playing a role in the prospective donor's life. As the prospective donor was only known at a superficial level in the initial stage of the recruitment process, every action and behavior was scrutinized and evaluated. Whether he paid attention to cryobank instructions, completed his application and other paperwork on time, looked interested in interview sessions (i.e. didn't stare at the clock), didn't seem "too eager," (i.e. money-hungry) or make insensitive comments or jokes all determined his eligibility into the program before he was even considered for semen analysis.

Sellability

As mentioned above, "good" donors had to possess the "right" social characteristics to be sellable. In addition to being easy to work with, donors had to possess traits recipients considered desirable e.g. education, musical and athletic talent and ambition. As one donor coordinator observed:

> "Generally they need to be in college for more than an associate's degree or they should already have their Bachelor's and be going further, unless they have something else that's amazing about them like if they started their own business or if they are an artist or musician or anything like that. And if they're not, then we generally just don't take them. And usually, you can tell when communicating with them that they're not the brightest kind."

Social class was an important factor in the selection of donors. Higher education was a marker of social class. Donors had to embody middle class values in order to be selected. Artists and musicians did not necessarily represent middle class backgrounds, but the social value of their

professions was perceived to be on par with a college degree. However, not every artist and musician had equal social value. Classical musicians who played complex musical instruments such as piano or guitar had higher social value as they were closer to middle and upper class standards than singers in a Goth garage band.

Prospective donors had to undergo various standardized tests such as IQ and professional personality and lifestyle assessment tests. Some cryobanks hired professional psychologists to evaluate donors "just so that we don't have a psychopath on our hands." Yet cryobank employees were also aware that scoring on randomized tests was neither predictive of the donor's future actions nor an accurate measure of intellect. Excelling in college was an indicator of intelligence and responsibility, but being an average student in college did not necessarily reflect the depth of one's capabilities and talents. Nevertheless, donor programs favored the forward thinkers, entrepreneurs, and achievement oriented over the disabled, the mentally ill and institutionalized, inmates, criminals, and welfare seekers. Not only were such individuals socially marginalized, but also considered unworthy of participating in reproduction or parenthood. Structural inequalities which deprived individuals from getting a college education or employment were a moot point of discussion because such donors were not sellable and recipients were not interested in them. Even if recipients never saw or met the donors, cryobank staff felt responsible for the donors they selected. Many considered themselves guardians making decisions on the recipient's behalf and felt they could be held morally and legally accountable by recipients, offspring and courts if they did not do their duty honestly.

Sexuality

Unbridled sexuality represents danger to cryobank employees. As I observe in other chapters, the language of "donation," "specimen" and "collection" cleanses and medicalizes the sexual nature of the act of masturbation. Parallels to sex work and anonymous sex, which would make the act of exchanging semen for money illegitimate and socially stigmatized, must also be managed by cryobank employees. Anonymous sex is also commonly associated with gay men, making gay sexuality deviant and forbidden on cryobank premises. Gay men are barred from being anonymous donors, although as I discuss in chapter 6, the legal language claims to focus on homosexual behavior and not identity. I found that it was frequently female rather than male employees who selected pornographic material (magazines, videos, wall posters) for donors, perhaps another indication of aversion to gay sexuality.

Sex was contained within the boundaries of the "collection room[38]." The walls of the collection room were made sound proof so those on the outside could not hear any sounds associated with sex. At one cryobank, a fan producing white noise was placed outside the collection room and switched on when donors were inside. Pornographic videos were kept under lock and key at many sperm banks as donors were alleged to steal them. Stealing porn also represented uncontrolled sexuality, which needed disciplining. If donors wanted porn videos for sexual stimulation, they were instructed to check them out at the front desk and return them when they were done. Cryobank employees kept track of the time donors spent in the collection rooms. Most employees estimated the "collection procedure" to last not more than 15-20 minutes. If the donor was in the room for over 30-45 minutes, employees could knock and inquire if anything was the matter. "We don't want them in there watching porn all day," commented one

[38] See Chapter 5 for a description of the "collection rooms."

employee. Expression of sexuality was allowed, but only to the extent necessary for producing the product – starkly reminiscent of sex work. Donors were discouraged from telling jokes of a sexual nature, which could portray them as frivolous and disqualify them from the program. On the other hand, sexual jokes relating to sperm donation were not uncommon among cryobank representatives.

At one donor recruitment seminar, I found that while cryobank employees tolerated overtly sexual, joking references to collection rooms and masturbation by young male college students, such jokes were not allowed after they were inducted into the donor program. Men were also not informed beforehand that identifying as having male partners would disqualify them. Cryobank staff worried that such information would cause candidates to lie about sexual behavior. Nevertheless, cryobank staff expected college students to be sexual, even hypersexual. In donor recruitment seminars, sexual abstinence was repeatedly emphasized as an important criterion of qualification. Prospective donors were warned that they would not be selected if they failed to abstain from ejaculation for a 48-72 hour period. In fact, I found that cryobank staff emphasized the importance of abstinence over and above other factors such as the possibility of future offspring wanting contact with donors. Privacy and confidentiality were mentioned, but glossed over in the assuring language that donor information would be kept confidential and not shared with third parties.

While anonymous and open donors were expected to be hypersexual, client depositors were expected to not be sexual. Client depositors were homologous donors who stored sperm for current or future partners for a number of reasons. Many were cancer patients about to undergo chemotherapy. Others stored sperm because of occupational hazards such as working with

dangerous chemicals. Some were military officials planning to travel overseas. Some sperm banks had separate collection rooms for client depositors, which were devoid of pornography on the walls. I was informed that client depositors were spared the pornography out of respect for their wives and girlfriends as well as to show sensitivity on the part of cryobank staff to their suffering, especially if they were cancer patients. Some client depositors were minors and cryobank employees felt it was morally wrong to provide them with porn. One donor coordinator stated:

> "Not only is it children, but it's children who are experiencing such an emotional time, because they're diagnosed with cancer, starting chemotherapy soon. So we really want to be sensitive towards everybody's needs. The donors here aren't here under the same circumstance as our clients (client depositors). A lot of our clients are cancer patients, so they're kind of experiencing a whole different aspect of life, whereas the donors are here…they're helping other people, but they're not having the same type of emotional hard times that a lot of our storage clients are going through."

The donor coordinator suggests that emotional and physical suffering transcend sexuality or negate it somehow. The expression of (heterosexual) sexuality is made more acceptable only when transformed into the noble goal of "helping others." Pornography represents a threat to client depositors' wives and sexual partners because it involves explicit imagery of (cardboard) women and their bodies who are not the client depositor's marital or sexual partners. By comparison, third-party donor sexuality is allowed because it is part of their paid labor and donors are not suffering from disease. The fact that donors, too, might have girlfriends or wives who might object was not of immediate importance because donors were considered paid employees. The act of receiving money automatically put the receiving party in a subservient

position to the giver i.e. the cryobank. The fact that producing semen was a sexual act regardless of one's health or status as a client depositor or donor was downplayed. Whereas teenagers over the age of 18 (i.e. college students) were expected to be hypersexual, teenagers under the age of 18 were "children" with whom associating sexuality was a criminal act, constituting a moral offense, which could be punishable by law. The donor coordinator's use of the term "children" instead of "teenagers" or "minors" is important here because it is meant to evoke a certain moral response on the part of the listener – the need to protect the child from the dangers of deviant sexuality[39]. The underlying narrative, however, is that sex and sexuality are dirty, shameful, deviant acts associated with queer sexuality. They must be made safe, legitimate, noble and heterosexual (but not hyper sexual) through the language of biomedicine, altruism and suffering.

Selection of Donors: The Role of Recipients

I have mentioned how donors are socially conditioned to embody values that cryobank staff and recipients desire. Cryobanks recruit donors according to the number of pooled requests received from recipients. While recipients may indicate they want donors with specific traits, cryobanks do not necessarily have a customized system of recruiting donor types other than through anecdotal references from employees and recipients. One cryobank director explained the process of donor recruitment in the following way:

> "It's like going fishing. You put a fish net, you get all kinds of fish and you hope somebody will buy it when you get to the market. Well, sometimes you're left with a lot of inventory that people don't want. Because, basically what we're doing is trying in our human way to satisfy the majority of individuals. In other words: what do most people like? What flavor do they eat the most?

[39] Popular North American culture also portrays children as vulnerable to attacks by child molesters and sexual deviants.

> Vanilla! So what you do is just get a lot of vanilla in. Don't get too much pistachio because it doesn't go as fast as vanilla."

Donors and their sperm were described as commercial products, which were bought and sold according to market supply and demand. If recipients wanted more of one kind of donor, then that was what cryobanks recruited. Customized donors were considered more of a trend in the egg donation industry. Cryobanks did not focus too much on precision marketing like some egg donation agencies because of the time and costs involved to recruit, test and quarantine the donors. Unlike donor eggs, which were usually not frozen as egg freezing technologies are only a relatively recent phenomenon, sperm has to be frozen and quarantined for six months before it can be released to recipients. Recruiting customized donors would mean additional waiting time for recipients. One cryobank director was of the opinion that recipients would hesitate to share the donor with other recipients if they invested so much time, energy and money into the recruitment of a customized donor. Some cryobank directors found the idea of customized sperm donors entertaining, but did not foresee it as part of their immediate program goals. "It's an interesting idea: custom made donor to match the recipient. I guess we could do it like a movie casting," joked one cryobank director smiling. But he also observed that such specific donor recruitment would put additional pressure on cryobanks to find enough customized donors with good quality sperm that would survive freezing and thawing, while recipients waited for insemination.

Some cryobank employees expressed concern that many cryobanks were already providing recipients with detailed checklists of donor characteristics and fueling false expectations about biogenetic inheritability. One employee observed:

> "Sometimes I feel that because clients pay so much money they expect that their child should be custom-made, according to their expectations, or what they want. And I think that's because certain sperm banks give them these extensive donor catalogues with not just height, weight, hair color, but, "Is he a dog person, or a cat person, what's his hat size, you know, tanability…"

The marketing of the sperm donor and the manner in which donor catalogues were constructed were a topic of contention between competing cryobanks. Many cryobank representatives agreed that donor profiles and other promotional material often presented a distorted view of genetics and inheritability whereby donor phenotypes and genotypes were collapsed into a single category. This led to the notion that recipients could somehow control the outcome of the child (perhaps one reason why the Donor Celebrity Look-A-Like program added a disclaimer on the web site). Cryobanks differed in their promotional strategies about how much donor information to share or withhold. Some cryobanks emphasized the donor's physical appearance more than others, claiming that it was an important expressed need by a majority of their recipients. In order to protect the donor's identity while also balancing the need to satisfy recipient curiosity for information about the donor's physical appearance, some cryobanks provided photo matching services. Recipients could provide photographs of themselves, their partners or family members to client services staff who matched them with resembling donors. Sometimes, celebrities served as a ready frame of reference because their international fame made them easily recognizable.

I have shown in previous chapters that semen is neither tested nor evaluated by cryobank employees as an isolated biological specimen. Likewise, it is also not marketed as an isolated specimen. Recipients and employees continue to seek some kind of connection with its human source. The faces and bodies of celebrities help provide, through fantasy, a comforting sense of

familiarity through fantasy to the cultural strangeness of technologically incorporating into one's body a substance that is otherwise received through an intimate sexual act. Cryobank staff informed that recipients had long drawn upon celebrity figures as a reference for physical appearance. Programs such as Donor Celebrity Look-A-Like only made this practice more official by trademarking it. While there are no research studies showing how effectively celebrity faces and figures protect donor identity, my own thinking is that programs such as Donor Celebrity Look-A-Like, which present donors as a pastiche of various celebrities may actually help to mask the actual donor by rendering more complicated the work of imagining his appearance. However, the converse may also be true and further research would provide more conclusive results.

In my interviews with cryobank employees who performed photo matching on behalf of clients, I found that recipients and employees were both engaged in the subjective practice of imagining futures and shaping desires in that the way in which donor information was presented made it seem that it was easy to get the desired child whose looks were customized to one's liking, although cryobank employees were quick to point out that photo matching did not guarantee expected outcomes. One client services employee who performed photo matching observed:

> "I'm all the time explaining to people that there is only so much engineering you can do around this. "It's not like you can pick 'A' from this column and 'B' from this column, and green eyes and brown hair and da da da…and you're going to put together this ideal child. I'm sure that you know dark couples have had fair children and you know, recessive genes are a trip, but it is true that the phenomenon is that that's the little piece that they feel they have some control over and you realize especially once you have the kid that you really don't have any control at *all* [laughs]. It just

> turns your life upside down…but, it is a very emotional process when people are selecting a donor, obviously. And so it requires a certain amount of sensitivity and being able to be empathetic and also be able to be objective, when you're helping people in this process. Because sometimes people will get very, very attached to a specific donor and you know, it's like, it's just a donor, this is not going to be the father to your child."

The cryobank employee's statement reveals that recipients may be viewing donors in ways that are more intimate and personal than what cryobank employees expect or want them to expect. Infertility and the quest for conception may involve feelings of loss of control over one's bodily functions. Donor profiles give recipients the idea of some choice and control over the insemination process. But cryobank employees felt they had to correct and advise recipients if they became too preoccupied with the immediacy of the donor's looks by getting them to think of the long term well-being of their future child. In this way, cryobank employees were subtly coaching recipients to not become too preoccupied with the donor's identity, but to focus on the outcome and what should be the actual reason for their insemination – the birth of a child. But just as recipients could not control the outcome of their insemination, cryobank employees could not control the ways that recipients imagined and related to donors.

Recipients formed emotional attachments to donors in various ways. Employees recounted how some recipients would purchase remaining semen vials of their favorite donor to prevent access to other recipients. At one cryobank, a Jewish heterosexual couple purchased the entire inventory of a particular Jewish donor's sperm and ordered the cryobank to destroy it after the wife gave birth to avoid future possibilities of consanguinity with other families. Sometimes, recipients would purchase the entire inventory of their favorite donor's semen so as not to share

with others. At times, recipients also stored extra vials with the concern that they would need more than one insemination cycle to get pregnant or would need the same donor's sperm for future insemination in case they wanted another child. For recipients, then, attachment to a particular donor gave his sperm the qualities of a treasure, something that was valued because it was rare and had to be exclusively owned. In controlling the distribution of this treasure, they were also trying to exercise control over the exclusivity of their legacy – something that biology would have not otherwise granted them. Sperm was no longer a "common property resource" to be shared among those who could afford to pay for it. With enough money, recipients could gain exclusive ownership rights over it and transform it into private property.

The work of mediascapes merged desires, fantasies and actualities to the extent that there were occasions when recipients were known to conflate donors with celebrities. At one fieldwork site, cryobank staff shared with me an incident involving a recipient who sought the cryobank's services, requesting insemination from a "friend." The recipient even had a letter from her physician who authorized the insemination (after being convinced that the prospective donor was a close friend). She presented the client services staff with the donor's MapQuest address, phone number and other contact information. Upon verifying, cryobank staff realized that the contact information was of actor George Clooney. The recipient was turned away and her physician informed. This example shows that for the recipient imagination and lived reality had converged to the point that she began to act out her desired imagined outcome. The only problem was that the "donor" had not given his consent in this case. The presence of cryobanks and their advertising messages may have fuelled the woman's ideas that she had limitless possibilities about her selection of a donor, which she was also conflating with the idea of a mate. However,

cryobanks also had the authority to refuse recipient demands.

Cryobank employees' descriptions of recipient requests for donors revealed that recipients chose donors for complex reasons. "People are less choosy in who they might get knocked up by than the person they actually choose on a piece of paper," remarked one cryobank employee, "because all they see is a piece of paper." Often, recipients conflated physical features with social attributes and achievements – an issue that was further exacerbated because donor profiles also reflected this practice. But, women were not always concerned with how the donor looked. One employee related:

> "One woman wanted a donor who played the piano because her husband was a concert pianist. She [the recipient] knew one's musical ability doesn't get passed down through genes, but she asked for it because it made her feel good. I went through the profile of all donors and found one of a donor who said he had learned to play piano when he was three years old and that it was his hobby. When I told the recipient that, she was so happy she did not even bother to ask what the donor looked like."

The recipient was aware that musical talent might was not inherited, but still wanted some reminder of her husband reflected in the donor. The husband's profession as a concert pianist was an important part of his identity and finding a similar trait in the persona of the otherwise unfamiliar donor might have acted as a source of comfort for her. The above example shows that there are many factors attracting recipients to a particular donor. Recipients may make certain decisions out of fear and anxiety of the unknown rather than from any scientific or clinical basis even though they may be aware of these narratives. For example, recipients could be aware that social traits might not be as simplistically transmitted genetically, yet may still make decisions out of fear of uncertainty. Tober (2001:139) describes an interview with a recipient seeking

artificial insemination who did not choose a sperm donor because he listed collecting guns as an interest. Justifying her choice, the recipient confessed that even though she knew that gun collecting was not inheritable quality, she nevertheless did not want a "little member of the NRA running around." During my fieldwork, cryobank employees recounted similar incidents. One cryobank employee recalled how a recipient refused a donor because she thought he was obese and that her children would inherit obesity from him:

> "There was one donor who was 230 lbs, 6 feet 3 inches and a history professor. He was a good looking man, but the woman did not understand that 230 lbs was a reasonable weight for him as he was 6 foot 3. She just saw his weight and rejected him because she did not want a ten pound baby! So we need to keep track of everything. Sometimes, we even ask what the donor weighed at birth so we can provide this information to recipients."

Here, again, one can see that there is anxiety on the recipient's part that the "sins" of the father can somehow be transferred to the child. The cryobank employee does not challenge the recipient's view, although she does not agree with it. Instead, cryobank policy is changed to obtain information about the donor's birth weight as if it could somehow affect the knowledge of the future offspring's birth weight. Moreover, this act also reveals societal prejudice against obese people, even though in this case, the donor is actually not obese given the standard weight for his height. Recipients are reacting to the images and narratives that are selectively highlighted by cryobank marketing. Descriptions about the donor evoke fear and repulsion as much as desire and appeal according to the recipient's own past experiences. Recipients may be aware of the logic of science and genetics, but may not always trust such narratives to appease their fear of the unknown future.

While at one end, cryobank employees are following recipient demands, at the other end, they are also influencing them by reinforcing or discouraging certain ideas and attitudes. Cryobank employees expressed their uneasiness with instructing recipients on the kinds of donors they should choose, but at times, felt the need to correct recipient thinking on matters of inheritability, and remind them of what they thought should be their real priorities[40]. Recipients were counseled to focus on their health (have regular physicals, monitor ovulation cycles, improve diet) as well as the health of the child. In the following interview, one client services manager explained how she counseled recipients when she felt they were too preoccupied with the donor's outward appearance, conflating her ideas of health and goodness[41]:

> "We have a lot of women who will call everybody in the office to ask, 'Well what do you think, is this donor cute? Is that donor cute? And everybody is, " I can't give you that information, I can let you talk to the client services person]. Sometimes, people will submit photos of male models, yes, yes, yes, yes! You know, movie stars...Brad Pitt. And what can you say? No, we don't have a donor that looks like Brad Pitt, but we do have donors that have these other characteristics that you're looking for. Tell me, *really*, what is the most important thing you're looking for in a donor? And for mostly everybody, it's health, you know, you want them to be a good person. I can tell our recipients that all our donors are at least okay looking. We don't have any donors that are very, very, very unattractive. That is something that we do screen for, but it's not the first thing obviously. Some are more conventionally handsome or good looking than others, but it's entirely subjective."

A cryobank director commented that the more categories of donor attributes that sperm banks presented to recipients, the more specific recipient questions became. One recipient, for example,

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[40] Recipients were paying customers and in a capitalist economy where business culture entailed the idea of "the customer is always right," the act of receiving money implicitly lessened the receiver's bargaining or assertive power.

[41] I would like to thank Claire Wendland for pointing out this conflation.

wanted exact measurements of a donor's nose to avoid a large-nosed donor. The director continued:

> "People ask us, do you have an IQ score. Is he a member of summa cum laude? That is not what we give out. What we give out is what I would call common knowledge attributes and with that, believe it or not, I have people who say when they say they are ethnically Russian, are they [donors] white Russian (member of aristocracy) or red Russian (blue collar/ communist) ? We don't ask that question….People ask, 'Oh what political party does he belong to? Is he a Republican or Democrat?'"

In a more humorous tone, another cryobank director recounted:

> "I've had really odd requests where….one woman said she wanted a donor who had been born in the South! In the *South*, you know, as if being born in Georgia or Mississippi made a difference. And then other people said, 'Oh I want a donor who's a *vegetarian*,' or 'I want a donor who likes *pets.'* I had this woman who said, "Well, what movie star does this donor look like?" Finally, I just said to them, 'You know, I'm not playing this game anymore. These guys are nice guys, they're sort of average looking, none of them is really ugly, thank goodness. But one woman wound up at my door saying, 'I don't want to use your donors, I want this guy. He's a friend of mine.' And boy! Talk about Mr. Plain Jane [laughter]. After being so obsessed with good looking men, she wound up choosing a man who…it would be very hard to apply the word 'handsome' to. Every few months I get a call and someone says, 'I want someone who's *really* tall, and *really* friendly, and *very* good looking, and *extremely* intelligent…' And my response is always the same, I laugh. And then I say, "Yeah, when I find him, *I'll* have his baby!"

In these various descriptions of recipient demands, there appears to be a discrepancy between what recipients want and what cryobank directors and employees expect them to want. Recipients had complex needs and related to donors in deeply personal and intimate ways, which were not always concerned with physical appearance. While employees gave more general, non-

identifying information about the donor – what the cryobank director called "common knowledge," recipients, at times, appeared to be concerned with the specifics of a donor. Employees tried to steer recipient focus back on the outcome of the insemination process i.e. the relationship with the child if they felt recipients were become overly concerned with their relationship with the donor (although it was the recipient-donor relationship that was emphasized in cryobank marketing). Nevertheless, cryobank representatives were also participating in the social commentary about the donor's physical appearance even as they critiqued recipients of the same. As one of the employee's statement claimed, cryobanks screened out "ugly" men even as they said that standards of beauty were subjective and secondary to other character traits.

During fieldwork, I found that after conducting donor interviews, cryobank staff would comment about the donor's physical appearance – his clothes, hair and physique. One donor coordinator recounted how she judged the same donor differently on two separate occasions because of his physical appearance when he came to pick up his monthly donation check. On one occasion, he appeared unshaven and unkempt with a leather jacket and bandana, which shocked the donor coordinator so much she complained to the director about his poor recruitment decision. Two months later, the donor coordinator was greeted by the same man. This time, he was "all dressed up, drop dead gorgeous like Tom Cruise or Kevin Costner." She asked for his identification and realized he was the same donor she had dismissed before. He attributed his previously disheveled appearance to having gone cross country on his motor bike during his two month sabbatical from residency and stopping on the way back to pick up his check. The cryobank employee acknowledged that she had judged the donor in a very superficial way. Her

opinion about him changed completely when he changed his attire and informed her of his medical profession.

For cryobank employees, the donor's appearance also mattered significantly even though it had nothing to do with inheritability. "If he looks ungroomed with dirty fingernails, I mean you could tell he's just… I don't want pass him on to somebody," said one cryobank employee. Why should the donor's physical appearance matter if donors and recipients never really saw or met each other? Cryobank employees responded that even if donors and recipients never saw each other, employees, as intermediaries still had a responsibility to act as trustees for both parties. "Regardless of what you tell them, you're still responsible," said one cryobank director, "I cannot say I am 70 per cent responsible, no court, no jury will think about it this way. You can't remove yourself. It's like a guardian or trustee relationship. You're always responsible." Cryobanks considered themselves morally, ethically and legally accountable for their actions even though donors and recipients were not always privy to the knowledge.

Identity Management Part II: The Representation of Donors

Donor profiles have been the focus of analysis by several social scientists (Almeling 2006; Moore 2007; Schmidt and Moore 1998; Tober 2001). Schmidt and Moore (1998:30) performing content analysis of sperm donor profiles find that cryobanks employ particular "discourse templates," or "modes of representing information that have become routinized and appear in specific types of information presentations" and that "organize novel or exotic information in ways that are highly familiar to an audience." Donor profiles focus on selected social characteristics such as hobbies, interests, lifestyle, diet, relationships, goals, education,

profession and so forth. Narratives feature positive relationships with friends and family and omit family squabbles and relationship conflicts. In turn, the questionnaires presented to sperm donors are also framed in ways that elicit a tailored response. E.g. questions such as, “Who are your heroes?” or “Who do you look up to?” compel the donor to answer in a way that makes him appear idealistic and striving to better himself. Questions such as “How do you see yourself in five years?” encourage a forward looking response, which portray the donor as an achievement oriented person – all culturally desired values of men by North American standards.

Donor profiles are available in both short and extensive versions. “Short” profiles are usually offered for free to create a “hook” from a marketing point of view and provoke interest among recipients. “Short” profiles usually include staff impressions, donor essays, a brief description of the donor’s physical appearance e.g. eye and hair color, skin color, hair texture, followed by education, profession, hobbies, interests (usually sports and music). Some short profiles also include a baby photo of the donor. Long profiles include more extensive information about the donor including his medical history as well as professional evaluations by psychologists and geneticists, personality, lifestyle and IQ assessments, handwriting analysis, phrenology reports and so forth. Recipients purchase access to varying degrees of donor information through these “short” and “long” profiles depending upon how much money they are willing and able to spend. Monetary access privileges some recipients over others to have more information about the donor. Nevertheless, this information is twice filtered by donors and by cryobanks which may selectively withhold, omit or manipulate it.

I have discussed in my previous chapter on anonymity how information, which may be considered identifying is strategically employed by cryobank personnel so as to establish an

emotional connection between recipients and donors. As recipients desire babies of their own, cute photographs of donors as children are used to persuade them to select a particular donor. Baby photos may foster recipients' own imaginings of future children who resemble the donor at that stage in his childhood development[42]. Through baby photos, recipients establish a connection with a past image of the donor as a child rather than the present adult donor. Some cryobanks also use audio clips of donors in which men leave recorded messages for future offspring. From a psychological standpoint, inspirational messages from donors to offspring are aimed to reassure and the comfort children of their social worth – that they are not the result of a purely commodified exchange, a morally troublesome idea because it is connected to slavery and buying and selling of children on the market. Such efforts of reassurance are not considered necessary for children born through more conventional methods of reproduction i.e. sexual intercourse.

To what extent the donor's voice is identifiable is a topic of debate, but there is an attempt on the part of cryobanks to manage the donor's identity by using temporality to establish a connection between the present donor and future offspring. Representations of voice and imagery are frozen in time. The recipient or offspring may be making connections in the present to the donor as he existed in the past. Emotional connections are, thus, made with a representation that does not exist or no longer exists. Likewise, the donor, at the time of making the audio recording is making a connection to a future offspring he can only imagine. Donors,

[42] Further research is needed with recipients to see how much of themselves or other family members they imagine in their future child as compared to the donor.

recipients and offspring may be separated by physical space and time, but the work of imagination fills this gap.

Identity Management in Staff Impressions Reports

In my final analysis, I show how donor coordinators use language and framing to craft the donor's public persona in a "staff impressions report" by strategically highlighting, and downplaying or omitting certain aspects of the donor's personality. Below is a staff impressions report written by a female donor coordinator:

> *Donor X is the quietest donor I have ever interviewed. Although I asked him many questions, his responses stayed timid. I got the sense that maybe he was nervous and maybe doesn't do much talking until he's warmed up to people. He by no means came across as unfriendly or rude, just reserved in this situation. In lieu of conversation, I took a closer look at his expanded profile in which he shares many interesting details about his life. His mother home-schooled him until he was 9 and he describes her as a loving and supportive teacher. His father holds 3 patents in robotics and is an avid musician. Several of his male relatives were boxers, his Grandfather boxed professionally and donor X followed in their footsteps to box in high school. He adds, lovingly, in his profile that his Grandfather was 'never knocked-out'. From his profile, you can tell that the donor is very fond of his family. What particularly stood out for me in donor X's profile was his reason for becoming a sperm donor - 'I would like to help others attain the families they desire. My son brings me great joy and pride, and I know there are other caring individuals who would be grateful to have such a wonderful son or daughter.' He is clearly proud of his child and his eyes light up and he speaks warmly of how much he cares for his son. Having the perspective of having children is a great quality in a donor.*

The donor's quiet behavior is interpreted as timidity. It does not appear that the cryobank employee asked the donor the reason behind his reticence. Unable to read his expression, she reframes it in a way that would draw a positive response from the reader/recipient. She decides

that the donor's silence is possibly because he is nervous or shy – more culturally acceptable (and sympathy drawing?) behaviors than sullenness, stubbornness or resistance. Silence, however, also signifies ambiguity, especially in the absence of visual or verbal cues, and can be interpreted in many ways. The employee, therefore, follows with a definitive statement as she assures the reader that the donor's silence was certainly not because he was rude, but rather because he was reserved in that particular situation. Finding the donor not forthcoming in conversation, she looks instead to his personal essay to find aspects that she can comment upon more definitively. She draws on the donor's family as a proxy for the endorsement of his character and comments upon their intellectual achievements and athletic skills, some of which the donor possess, such as boxing. But the most important aspect in the donor's essay, which leads the employee to judge the donor as "good quality" is his love of children and especially his son. Love of family and children are portrayed as desirable social traits, and the reality of family conflicts is not mentioned anywhere in the donor's profile. The idea of selling sperm to a third party is normalized by reframing it in the language of love and care for "grateful individuals" who will appreciate a child as special as that of the donor. The cryobank employee, therefore, reassures the recipient that the donor is a loving and caring man, a good husband and a good father to his son, and that his social values will have an impact on the recipient's future offspring.

Conclusion

In this chapter, I show how cryobank staff manage the sperm donor's identity by influencing donor and recipient attitudes and behavior so as to make them compliant with what the characteristics that cryobanks consider appropriate and desirable to them and to recipients

and regulatory agencies. The donor's persona must be managed, not only to make him more marketable, but also to protect his identity. Cryobank staff give recipient choices in selecting certain aspects of donors, but do not always comply with all of recipient wants. Even as they are critiquing recipient choices about donors, cryobank directors and employees are participating in social commentary about these donors. Mediascapes fuelled by discourse narratives, advertisements, television commercials, web sites catalogues, profiles, brochures and so on sustain recipient (and donor) imagination, giving the idea that recipients know the donor at some level and have some kind of connection to him, even though this connection is in the realm of the imagination. Donors and recipients are not without agency, however, and may respond to marketing messages in unexpected ways. Donors and recipients have complex reasons behind their decisions to seek artificial insemination. Cryobanks help sustain and perpetuate a social and moral order by reinforcing certain cultural and social stereotypes about masculinity, sexuality, nature and nurture. Yet, cryobanks also have the capacity to change the dynamics of this social and moral order by introducing new narratives and tools for discursive frameworks and practical applications.

CHAPTER 5

Is Sperm All the Same Under the Microscope? The Making and Unmaking of Categories in Cryobank Laboratories

I sit in the spacious office of a cryobank director, thumbing through sperm donor catalogues as he works at his computer. His desk is piled with files, sorted and classified into rows – each row signifying the different actions he must take on them. Around us, the cream colored walls are decorated with family photographs interspersed with degrees, diplomas and certificates marking the steady professional milestones - testaments to his current position of leadership and authority. For the past hour, I have been examining donor long profiles, which are only made available to recipients for a fee. I am struck by the array of information presented to prospective clients. Cryobank catalogues seamlessly merge the donors' social characteristics: education, profession, athletic and musical abilities, hobbies and so on, with the quality of their semen, measured in terms of sperm count, motility, morphology, viscosity, volume and so on. Clients receive the message that not only are they purchasing the best quality sperm in terms of a pregnancy resource, but their future children will inherit the winning qualities of the donor and be healthier, smarter, fitter and more physically attractive than possibly either recipients and their partners or children conceived through natural methods.

"But are all these traits really inheritable?" I ask the cryobank director, the disbelief thick in the tone of my voice. He turns away from his computer screen and smiles, shaking his head. The categories, I am told, are the result of client demands and help alleviate their feelings of

alienation during the insemination process[43]. They are also a way to maintain competition with other cryobanks. For the director, a cryobiologist and medical technician by profession, social categories such as the donor's race and ethnicity do not matter nearly as much. "Do you think there's a difference between Jewish and non-Jewish sperm?" he asks. "There's no yarmulke [on Jewish sperm]. I couldn't tell the difference under a [micro] scope." According to the director, "People are created equal. Sperm is created equal under a microscope. I test it, I store it." Nevertheless, he acknowledges that there is a market demand for "Jewish" sperm and he must respond to it if wants to stay in business. He tells me that he respects his clients' choices and understands that they may be important to them. As a biologist with expertise in medical and technical laboratory procedures, however, his primary interest is in understanding sperm as a biological specimen: its structure and function, its disease etiology, and its reliability as a pregnancy resource for his clients. "I look at what I do as a laboratory procedure rather than…," he stops in mid-sentence, then rephrases, "In other words, scientific method, nothing else. I don't apply any other kind of rule to what I do[44]."

I am intrigued by the director's response. It suggests a universal sameness of human biology underneath the differences of socially constructed categories. In other words, stripped of cultural and social identifiers and labels, sperm's biology-ness – its materiality and biological properties – does not change. The director's view is in stark contrast to that of many tissue

[43]I discuss these ideas in greater detail in my chapter on the social construction of the donor's profile.

[44] By scientific method, the cryobank director explains that he is referring to clinical laboratory procedures and standards for testing semen. This does not mean that the cryobank director omits his subjective judgment to screen donors. In a following statement he corrects himself and says that he does act as gatekeeper during the initial screening of prospective donors. Sometimes, he disqualifies them before they undergo semen analysis if he decides they are not appropriate for the program. However, since the cryobank director wears many professional hats within the organization, his standards for moral assessment of donors, as he suggests, do not always coincide with the clinical protocols for analyzing their sperm.

culture and stem cell scientists who view human tissue as malleable and its properties structurally and functionally modifiable from moment to moment. By drawing on the epistemic authority of science, the director uses his identity as a scientist to establish his credibility and distinguish himself from subjective and, hence, less credible practices of non-science. The director's words allude to the objectivity of the scientific method and its subsequent transcendence over cultural and historical factors. It suggests that science is somehow unbiased and value free as compared to the subjective ways in which clients select donors. Considering this view, one may ask: is knowledge about the biology of sperm – as technologically assessed by cryobank standards and procedures – different from ways of knowing the *donor's* social biography e.g. through interviews, surveys and questionnaires, and if so, how?

In this chapter, I explore how cultural categories are detached from and reattached to sperm at the semen analysis stage of its social biography. I argue that even though sperm is ritually separated from the donor's body to be tested, manipulated and evaluated, it is not completely dehumanized or disentangled from the donor. Neither his personhood nor his biogenetic legacy can be isolated by the scientific method. Cryobank lab technicians are privy to varying degrees of knowledge about donors, and evaluate their sperm in the context of multiple narratives: semen analysis results, infectious and genetic disease results, medical history records, and interactions with donor coordinators, cryobank directors, client-services staff and donors. Consequently, the ways in which lab workers understand "normal" and "abnormal" sperm are far more subjective and holistic than biologically reductive or grounded in the Cartesian mind-body divide. Yet we only see a numerical evaluation of semen on laboratory semen analysis

worksheets. In this chapter, I ethnographically explore the narratives behind these numerical values. I show how they are significant to the social construction of categories on sperm quality.

I begin by addressing the issue of science's objectivity, as brought up by the cryobank director. I draw on research in science and technology studies (STS) and the social sciences to show that what gets defined as science is a selective process rife with power struggles. I compare the shaping of the scientific agenda by internal and extra scientific influences to the work of cryobank laboratory technicians to show how their notions of sperm quality are similarly influenced by the forces around them even as they interpret and determine what they see under the microscope. Next, I move on to the ritual unmaking of categories as semen is separated from the donor and takes on the status of a biological specimen. I find Van Gennep (1960[1909]) and Turner's (1967) concept of rites of passage helpful in analyzing the changing status of semen, particularly in its "betwixt and between" stage as it transitions from raw material to processed product. Parallel to the observations of STS scholars, I use the metaphor of the cyborg to show how semen's risky liminal status is transformed into a safe, reliable pregnancy resource by attaching to it new categories of quality assurance. I find that while certain semen analysis procedures require semen to "speak for itself," lab technicians engage in various degrees of humanizing it by using it as a proxy for its donor. As donors have unique personal histories, semen too, reflects these histories. However, it is frequently the category of "abnormal" that makes lab technicians delve further into these histories.

Normative Practice and Boundary Making in Science

Social science scholars have long observed that scientific thought and practice are situated within a cultural and historical context, and respond to the social and political debates,

discourses and concerns of their times. Since the age of Western Enlightenment thought, science has sought a morally higher ground by being associated with reason, rationality, objectivity, and technological progress compared to what it dismisses as the emotional, subjective, irrationality of religious thought and belief. Yet, STS scholars have shown that the inner logic of systematic scientific procedure is also colored by cultural factors, which are, nevertheless, omitted from scientific language and text. Moreover, science is not universally defined. The question of what counts or does not count as science is infused with politically charged, value-laden, selective and inconsistent practices of boundary making between "scientific" and "nonscientific" categories. According to Gieryn (1999: xii),

> "Science is the symptom of the legitimate power to decide reality – its edges and contents disputed, moved all over the place, settled here and there as decisions about truthful and reliable claims are acted upon by jurists, legislators, journalists, managers, activists, and ordinary folk. Representations of science – where it is, and where it is not have less to do with the cultural realities they supposedly depict, and more to do with the cultural realities they sustain."

Social science scholars have drawn on constructivist approaches to show that there is no ahistorical, objective scientific knowledge, but that knowledge arises from locally situated scientific work "fabricated out of circumstances," (Latour and Woolgar 1979: 239) within a particular time, space and locale. Scientific language and discourse incorporate within it, and respond to the cultural, social and political controversies of the time. For example, Martin (1994) in her study of public and scientific discourse about the workings of the immune system shows how understandings of immune disorders are drawn from existing cultural metaphors. Hence, the value on "fit" bodies as flexible and adaptable parallels with late capitalist economic

understandings of flexible accumulation. Similarly, Morgan (1998) shows how twentieth-century embryologists have projected their own political and social anxieties onto interpretations of human embryos by drawing on existing cultural discourses of immigration policy, evolution, eugenics and "race betterment," comparative anatomy, and image technologies. Martin (1991) and Moore (2002, 2007) in their analyses of the scientific language around reproductive biology and human conception examine how the gendering of reproductive tissue is a mimetic representation of existing patriarchal societal norms, roles and expectations, which privilege and value male roles. Moore (2007) attributes the construction of hypermasculinized theories of human sperm competition and "kamikaze sperm hypothesis" (where sperm behavior is explained through metaphors of NASCAR racing, football, WWII fighter jets and nuclear destruction) to reactive forces against the cultural crisis in masculinity where men's roles in reproduction have been reduced to donating sperm[45]. The production and circulation of such scientific theories construct a social hierarchy among men based on ideas resembling early 20th century eugenic notions of biological and social fitness (Schmidt and Moore 1998).

The processes of scientific fact construction, then, are far more messy and chaotic than the neutral, objective tone conveyed by scientific language. Further, conflicts and power struggles within and outside the scientific domain affect and constrain the process of scientific consensus-making (Latour and Woolgar 1979, Pickering 1984., Lynch 1985, Collins 1981, 1985).

[45] I partially agree with Moore's proposition because I think women have historically been able to control men's biological, social and economic roles in reproduction long before the commercialization of artificial insemination. Child support, for example, is a way in which women have been able to limit male social role in reproduction in exchange for money. Birth control and single motherhood are ways in which men's reproductive roles are limited with or without their choice. According to Brod (1987), every generation of men has faced a crisis in masculinity as changing eras bring their own cultural anxieties and pressures for conformity with changing gender roles. Hence, this cultural crisis in masculinity predates commercial sperm donation practices.

Fujimura's study of the political and social history of the proto-oncogene – a gene that can become cancerous following a molecular mutation – shows that scientific goals are subject to considerable influence by the political agenda of actors outside scientific terrain, such as funding agencies, state bureaucracies and corporate sponsors. Thus, the scientists in her study are not only competing with each other to be the first to discover the workings of the proto-oncogene, they must also be spokespersons for their research project, and lobby for funding and legitimacy before stockholders, corporations, accountants, federal agencies such as the Food and Drug Administration (FDA), National Cancer Institute, and the Congress.

My own study parallels with the work of these scholars. I find that cryobank lab technicians' criteria for selecting or rejecting donors, the kinds of tests performed and the knowledge gathered on semen are also shaped, and to some extent, limited by other actors: cryobank directors, recipients, competitors, federal, state and professional agencies such as the FDA, Clinical Laboratory Improvement Amendments (CLIA), American Association of Tissue Banks (AATB), and American Society for Reproductive Medicine (ASRM) as well as emerging research in cryobiology. The kinds of knowledge collected and produced about the donor depend to a large extent upon what lab technicians are instructed to do by federal regulations and industry standards on quality control and good tissue practices, and internal standard operating procedures. Additionally, lab technicians must also apprehend the possibility of lawsuits by disgruntled clients, and the resulting adverse media stories, which could affect the cryobank's reputation. To them, therefore, sorting and classifying sperm according to the donor's race and ethnicity (as demanded by clients) become as important as sorting and classifying sperm according to standard industry procedures for disease risk. My fieldwork observations show that

these external influences inform the kinds of categories and value judgments lab technicians make about sperm, to the extent that their clinical gaze becomes accustomed to look for certain characteristics within semen, disregarding the rest as "waste." So for example, sperm is valued for its morphology, movement, progression, viscosity, volume and so forth while seminal fluid and its other components – prostaglandin, white blood cells, round cells and so on, are categorized as "gunk," "rubbish," and "debris."

However, lab technicians are not without agency. They must exercise their personal judgment as they interpret what they see under the microscope. Although playing an intermediary role in the cryobank chain of command, lab technicians are not authorized to retain or disqualify a particular donor, the information they provide to donor coordinators, medical directors and CEOs is crucial in influencing the final decision to select or reject the donor. For example, with the help of imaging and other evaluation technologies, lab technicians extract behavior-related "evidence" from donors' bodies about possible drugs, alcohol and sexual habits – evidence that that they must, in fact, determine and interpret. This information allows cryobank directors and donor coordinators to make clinical and moral decisions about what kinds of donors are appropriate (or not) for their program.

Lab work is as much a collaborative endeavor as it is an independent one. My research shows that lab technologists and technicians[46] co-construct narratives about donors and their

[46] Most cryobank laboratories are supervised by experienced cryobiologists who direct laboratory operations, and serve as liaison between the laboratory and other cryobank departments. Cryobiologists must have a bachelors' degree in science (B.S.), and depending upon the needs of the cryobank, may or may not be required to have additional years of experience in lab medicine or tissue banking. Working under the supervision of the head cryobiologist are laboratory technologists (also called Clinical Laboratory Science Professionals (CLS) /Medical Laboratory Technologists) and technicians (clinical laboratory technicians or medical laboratory technicians). Lab technologists must hold a Bachelors degree (BS) with a major in medical technology or another life sciences related

sperm by piecing together stories donors reveal about themselves and their families, stories "revealed" in their semen, and related stories gathered from mass media as well as personal and professional experiences.

Semen Analysis: The Processes and Procedures

Today, semen analysis consists of several complex procedures. Donors visit the cryobank between 1-3 times a week to "collect" a semen sample. Lab technicians perform blood draws and verify any updates or changes in the donor's medical or sexual history. Donors are given two sterile cups for collecting semen and urine samples. Semen is analyzed within an hour of collection, cryopreserved and retested within 48 hours to measure sperm survivability, as freezing has a deleterious effect on sperm motility. Semen analysis consists of testing sperm for count, motility, morphology, viscosity, volume and other related metrics. Semen may be tested in-house or sent to an external clinical lab for infectious and genetic disease testing. One the semen sample has passed these various tests, it is prepared for intra cervical or intra uterine insemination.

Unmaking Semen: Separation

In his famous study of the Ndembu people, Victor Turner (1970[1967]) used Arnold van Gennep's (1960[1909])] concept of *rites de passage*, to discuss three stages which marked life's important milestones such as puberty, marriage and death. The first stage involved a physical separation and seclusion of the ritual subjects from everyday life. Individuals would spend this time apart in a spatially distinct space where they would be given new names signifying their in-

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field. Lab technicians require fewer years of school and need an associate degree. All three professionals are trained in sperm pathology and may also have phlebotomy skills.

between status. Turner termed this “betwixt and between” stage as a liminal one. Liminal personae were stripped of their former status, yet did not possess a new status. Hovering between “here” and “there” they were ambiguous –neither male nor female (or perhaps both), neither living nor dead, although in some ways they were structurally dead. The last stage of the process involves the reintegration of the individual into the society, this time with a new identity and a new status. I find Turner and Van Gennep’s model useful in terms of tracing sperm’s cultural biography (as Kopytoff 1986 would call it) in the lab. Sperm also traverses similar stages of separation and liminality before it acquires the status of a product ready to be sold to clients. Sperm starts its journey from the male testicles where it develops and matures before it becomes part of semen - the white, viscous fluid produced in the seminal vesicles, prostate gland and urethral glands. Semen contains prostaglandin, fructose, fatty acids and lipids. Sperm cells comprise about 2-5 percent of the seminal fluid. They are made up of a nucleus containing the DNA and genetic material. They also contain mitochondria, which produce energy enabling the cells to move forward, and proteins to help bind the sperm with the egg during the process of fertilization.

The status of semen ritually transforms into specimen through a series of acts beginning from the time the donor enters the “collection room.” Collections rooms can be likened to the initiation huts described in Turner’s (1967) study. Marked as private spaces because of their ambiguous, sexual nature, collections rooms are a curious mix of medical instruments, sterile plastic “collection” cups, hand sanitizers, wash basin, white linen juxtaposed against pornographic wall photos and art, magazines, and videos. The rooms at once distance the act of masturbation and ejaculation from its sexual connotations by euphemizing the act, while

simultaneously acknowledging its sexual nature. Sexuality must remain confined within the boundaries of these rooms and donors are instructed to sterilize hands and genitalia before and after masturbation. The ejaculate is collected in a sterile cup bearing the unique identification number of the donor. This number stands in for both the donor and his semen from this moment onwards and maintains the connection between them throughout the course of testing, storing and shipping. Eventually, this number becomes the donor's identity and serves as an important way of distinguishing him from other donors.

Quality Controlling the Liminal Cyborg: Sorting, Classifying and Labeling

In its liminal stage, semen is categorized as "raw," "fresh" and "unprocessed." It symbolizes mystery, risk and danger because what resides within it and what it has the potential of harboring and transmitting is unknown. Liminality, as Mary Douglas (1966) observes is a dangerous and polluting stage because it confuses established categories and forms, violates moral norms and lays bare their contradictions. Liminal beings have variously been labeled monstrous, diseased, queer, insane, black or female and, thus, feared and marginalized by the society because of the threat they pose to the status quo (Clarke 2002). In feminist literature since the late 1980s, the metaphor of the cyborg has been used to signify pollution and liminality. Haraway (1989:588) borrowed the concept from cybernetics to describe the growing hybridity of organic life and technological systems in the late twentieth century, which blur the once imagined pristine boundaries between human and animal, human and machine, natural and artificial, mind and body, primitive and civilized, public and private, male and female, self-

developing and externally designed, and other such dichotomies[47]. The metaphor of the cyborg is a reflection of these multiple complex and layered meanings representing positive scientific progress, mutilation of natural processes, human-technological relationships, and the positive and negative consequences of changing postmodern human-technoscience interrelations (Davis-Floyd and Dumit 1998).

Cyborg relationships have transformed biology into what Sarah Franklin (2006:171) terms "transbiology - a biology that is not only born and bred, or born and made, but *made and born."* Stem cell research, regenerative medicine, tissue engineering, cloning, and prosthetics aim at the enhancement of biology through technology. Yet, as Hogle (2003, 2005:703) observes, these enhanced integrations of biology and technology are about more than striving for perfection or immortality. They are as much a way of controlling, designing and planning the body as an integrated unit of biology and technology – controlling predictability in an unpredictable world. Quality assurance procedures are, therefore, an integral part of managing and controlling biology and the liminality of the cyborg.

[47] In anthropological literature, connections between technologies, human bodies and body parts are acknowledged as being as old as the existence of human kind. The shaping of the modern day cyborg, however, is historically connected to the Industrial Revolution and the growth of capitalism in Western Europe when human-machine relationships became especially prominent in the public imaginary. Consequently, several works of fiction and nonfiction ranging from Marx's *Das Kapital* to Mary Shelley's *Frankenstein* reflect cultural anxieties about the destabilization of natural and cultural boundaries, shaking the longstanding Kantian view of the human body's inalienable autonomy and intrinsic value. Late twentieth century capitalism has especially had a profound impact on human-technology interrelationships as it is through technology that body parts – human organs, tissue and cells – have become a major source of market value – what Rajan (2006) calls biocapital. The mobility and transferability of these "spare" and "replaceable" parts have made possible their circulation as tools for therapy and research in local and global black and red markets (Fox and Swazey 1992; Hogle 1999, 2003, 2005; Waldby and Mitchell 2006; Landecker 2007; Lock 2003; Scheper-Hughes 2000, 2004a,b; Carney 2011).

What Comprises Quality Assurance and Control?

Quality control and assurance are two interrelated but separate concepts. Cryobank standard operating manuals define assurance as the act of giving confidence, the state of being certain or the act of making certain. Control refers to an evaluation, which indicates needed corrective responses; the act of guiding a process in which variability is attributable to a constant system of chance causes. One cryobank director described quality assurance as comprising "all the bells and whistles necessary to assure that whatever you do lives up to good quality." This means having qualified and trained personnel, and properly handling and documenting of all materials and information. Quality assurance, then, is the sum of ensuring that all the necessary components of quality control have been fulfilled. Quality control, on the other hand, is a particular step within the overall umbrella of quality assurance, which indicates that a specific measure within a procedure has been verified and meets the standard.

Examining the purpose of quality assurance in UK's stem cell science Sarah Franklin (2006) remarks:

> "Quality assurance, not just technical assistance, is now the element that must be added to biology to make it as good as nature – as good as the real thing – so that new made-in-the-lab biologicals, such as pancreatic islets, heart valves or skin, will function normally. But quality control is not added *to biology itself*. Quality is about *taking away* the dirt, the noise, the pollution, the pathology and the 'junk' that detract from the reliability of biological function. Therefore, quality control, while not 'in' the biotic component, culture medium, embryonic cell line, etc., is everywhere all around it – like a protective seal against contamination. In sum, if biological control is the motor, quality control is the car, the road system, the traffic lights, the map, the sign-posting and the speed limit. Quality control covers everything from the petrol to the bitumen."

I find Franklin's quote very fitting in the context of the cryobank sector. As I will show from interviews with lab technicians, quality assurance is not only imagined as "doing nature's work" as one lab technician put it, it is about taking *away* the "gunk," "rubbish" and "debris" from semen, which detracts from the reliability of its biological function. The underlying idea of quality assurance is control, quite literally, not only of the quality of sperm, but also the quality of the future: the quality of life that will be enjoyed by the future child to whom is linked the quality of the society's future.

From my research data, I understand quality as being both internal and external to semen. Semen, as raw material, must have certain internal characteristics in order to be acceptable to cryobanks. Yet, lab technicians also see themselves as further adding to semen's value by removing unwanted substances thought to hinder pregnancy. Hence, semen's internal quality is evaluated through standardized technological procedures, which render its structure and function measurable and quantifiable. Some of these procedures include testing for sperm count, motility, morphology, volume, viscosity, pH, white blood cell count, progression, linearity, and amount of wobble in movement. Additional testing may include postcoital functionality tests such as Sperm-Cervical Mucus Interaction, anti-sperm antibodies test (to measure diminished motility and sperm agglutination); acrosome reaction test (to detect possible reasons for acrosome absence); hamster egg penetration assay (to measure the ability of sperm to penetrate a hamster egg[48]; hemizona test (to evaluate sperm's binding capacity to the egg's zona pellucida); PCR-based detection test (to evaluate the presence of pathogens in patients with asymptomatic genital

[48] This test has been discontinued by some sperm banks because hamster eggs, while similar in structure to human oocytes, cannot really account for further development due to species difference.

infection), biochemical markers test (e.g. Creatine Kinase, Reactive Oxygen Species) and so on.

Once semen's internal characteristics are deemed appropriate, lab technicians work on enhancing its functionality by a variety of techniques. Most cryobanks use a number of sperm washing methods before cryopreservation such as simple wash (seminal fluid is removed by adding a mix of antibiotics and proteins to semen and passing it through a centrifuge for about 20 minutes), gradient wash (an hour long procedure where semen is passed through a density gradient of various Isolate concentrates and centrifuged, so that seminal fluid rises to the top and heavier density motile sperm settles to the bottom), and swim-up techniques (seminal fluid is passed through centrifuge and the remaining sperm pellet is placed a special medium for an hour, after which motile sperm which "swim" to the top are retained).

Schmidt and Moore (1998:33) coin the term "technosemen" to describe the "new and improved" bodily product resulting from semen analysis and technological manipulation. They suggest that sperm processing technologies alter the physical properties of semen such that unprocessed, "natural," or "unwashed" semen becomes constructed as risky, dangerous, irrational, dirty, unpredictable, more likely to transmit genetic and infectious diseases and not result in pregnancy. Technosemen, on the other hand is portrayed as "encoded, disciplined by technology and superior in potency to unprocessed semen." This "cyborgification" of semen, they claim, allows cryobanks to "construct a discourse of reproductive risk, capitalizing upon consumers' concerns about risks of producing defective children…What semen banks are selling is the ability to control risk and to harness the agency of semen in order to coerce it to act more rationally. This is more sellable to the consumer."

Indeed, after observing cryobank web sites and public message boards, as well as

interviewing lab staff, I find that cryobanks construct a hierarchy of quality using sperm motility as a benchmark. So, for example, cryobanks may differentiate between “premium” and “Grade 2”/ART/ IVF vials, “washed” and “unwashed” vials, ICI premium and ICI regular vs. IUI premium and IUI regular vials. IVF or ART vials used in intra vitro fertilization (IVF) or other types of assisted reproduction methods such as zygote intra fallopian transfer (ZIFT) and gamete intra fallopian transfer (GIFT) reportedly do not require as high a post thaw sperm motility as “premium” vials for intra uterine insemination because fertilization is directly manipulated by the recipient’s physician outside the recipient’s body.

During fieldwork, I sometimes heard lab staff substitute the term “sub optimal” for grade 2 vials. Some sperm banks used a hierarchical grading system for evaluating sperm, distinguishing between Grade A, B, C, D sperm, with Grade A marking progressive moving sperm cells and D marking immotile sperm cells. One sperm bank offered vials with lower sperm motility (e.g. 2 million motile sperm cells instead of the standard 5 million sperm cells) and compensated for this decreased sperm motility by reducing prices and offering sales and two-for-one deals where two vials were sold for the price of one. A cryobank director from a competing cryobank raised the question of why the category of suboptimal existed at all if the goal was to ensure a pregnancy. “Why give clients the bottom of the barrel?” he remarked, “Why can’t you just find donors who provide you *one* good vial rather than having to add grade 2, 3 and 4 and selling at a lower price?”

I decided to explore the director’s question further in the light of Schmidt and Moore’s (1998) analysis of cryobank marketing’s construction of a hierarchy of sperm quality. Did lab technicians trained in clinical rather than marketing techniques believe that “technosemen” was

superior to unprocessed semen? On a few occasions, I read aloud excerpts from Moore (2007) and Schmidt and Moore's (1998) analyses of technosemen to the lab workers. I found that many of them were critical of marketing strategies and their focus on generating business and profits at the cost of distorting the science behind cryobanking. Some alleged that it was marketing, which shaped the hierarchical grading systems of donors and their sperm, while they, being employees with relatively less control over the business decisions of cryobanks, had to follow these systems. Nevertheless, lab workers did not agree that technosemen was new and improved in terms of its physical properties. What Schmidt and Moore (1998) called technosemen was "washed" sperm. Sperm washing only removed seminal fluid from sperm; it did not alter its biological features. The only new substance added to sperm was cryopreservation media. Sperm was suspended in the media to help it survive the freezing and thawing process. However, lab technicians stressed that technology could not enhance the biological components of sperm. "It is what it is," one lab technician stated. According to lab technicians, technological procedures such as sperm wash were necessary to prepare sperm for intra uterine insemination (IUI) so it could be placed directly into the uterus in concentrated form. As sperm was placed closer to the site of fertilization, a high post thaw count or motility was not necessary.

Yet, although technicians described sperm wash as a chemical procedure, their descriptions of washed sperm – the product – did suggest that it was superior to unwashed semen in some ways. As can be seen below, the substances present in unwashed semen were perceived as undesirable and unwanted.

> "[Washed sperm is] cleaner because all the other stuff in the semen get washed off and motile cells are concentrated. We get rid of the seminal fluid and all those WBC [white blood cells] and RBCs

> [red blood cells] – anything that's in the specimen. Some will be present but we will get rid of the unwanted things in the semen. Just motile cells will be concentrated."
>
> "The idea is that live sperm is heavier than dead sperm and so when you spin it, the bottom pellet has more live sperm – it's more pure I guess. You have less dead sperm and other proteins. They get trapped in that gradient."
>
> "There are many other proteins in an ejaculate so we clean out some of the proteins also clear out the dead sperm. That's as "dirty" as you can get!"
> "It gets all the gunk – all the immotile cells, the mucus and everything, and the…[two second pause] *debris*…goes up in the top layer of the supernatant and then you got your sperm down at the bottom."
>
> "ICI vials do not make as clean a specimen so when they [recipients] purchase specimen, the ICI vials cost less."
>
> "It's not dirty [in response to my questioning whether an ICI vial of unprocessed semen was "dirtier" than processed IUI vials]. The sperm is suspended in the seminal fluid with extra cellular material, whereas for IUI, it's just sperm.

Washed sperm was described as cleaner, more concentrated, motile, and pure in quality. It also cost more because of the added materials and labor cost of processing. Unwashed semen, on the other hand, contained "unwanted things" such as immotile cells or dead sperm, gunk, debris, and mucus; it was "less clean." "Clean" and "dirty" here do not refer to the biological make-up of sperm, rather, they refer to the environment around it. "Clean" suggests quality control of the environment in which sperm exists, that is, seminal fluid (one is reminded of "clean" rooms and "dirty" rooms in the context of research laboratories). Sperm suspended in lab cultured media appears to be perceived as clean while sperm suspended in seminal fluid - its "natural" environment – is presumably perceived as risky and unpredictable. Its liminality must

be controlled through clinical procedures. Yet, many lab workers vehemently disagreed with Schmidt and Moore's (1998) claim that sperm processing technologies separated natural, dirty, irrational, defective sperm from technologically controllable, rational, sperm. In one conversation on sperm washing, which took place between myself and two male workers: a medical technologist and a technician, I found the contradictions between natural and artificial, particularly interesting as the cryobank employees explained their understandings of nature's work as well as their roles as nature's assistants. I reproduce the conversation below *ad verbatim*.

> Lab Tech 1: Washed sperm is a preparation.
>
> Lab Tech 2: It removes the prostaglandin and removes most of the dead sperm so that it improves your chances of conception.
>
> Lab Tech 1: Somebody with a low count or less motility…
>
> Lab Tech 2: No, no, that's for a client depositor. We're talking about why do we wash sperm – donor sperm – as a sperm bank. We're not talking about client depositors.
>
> Lab Tech1: Same reason.
>
> Lab Tech 2: Yeah, but we make it so that the chances of achieving pregnancy are greater. And anyway, if you take a sample from any man and you're going to use it for IVF, you're going to have to wash the sample, you're going to have to remove the seminal fluid, you're going to remove everything except the sperm itself.
>
> Me: Well, they (Schmidt and Moore 1998:26) are saying, "Technosemen is the 'new and improved' bodily product that semen banks advertise to clients through informational pamphlets." So, there's all these procedures, which are part of semen analysis like counts, motility, morphology, sperm washing etcetera, etcetera, and these are all technological. And so what this does is that it makes unprocessed or natural or unwashed semen appear dirty, irrational and unpredictable so you can be more prone to getting an STD or genetic disease. And technosemen is portrayed as rational, superior, clean, disease free, resulting in…

> Lab Tech 2 (interjects loudly, vigorously shaking his head): No, no, no, no, no, no!!! For the technique to take place…you're not doing it because the other is dirty. But the body….when sperm is placed in the vagina, the body has a natural filtration, eliminates all the things that your body could be exposed to: the dead sperm, the white blood cells it filters gradually until the sperm reaches the egg. That's in a natural setting. But because we're working in *assisted* reproduction, which is an *unnatural* setting, you cannot just put all sperm with the egg without removing the seminal fluid.
>
> Lab Tech 1 (nodding): You have to do nature's work…doing the same thing nature does…
>
> Lab Tech 2: You have to [chemically] treat the sample otherwise it's not going to work.
>
> Lab Tech 1: It'll just kill it…pH and all that.
>
> Lab Tech 2: So you need to remove all those factors. So if you think that sperm banks promote themselves because they're doing nature's work. Nah, we're not even doing nature's work. Sometimes if you put too much [sperm] after you do all this, a woman's uterus will automatically reject some of it and will get cramping. So if you don't know how to do the technique well and you don't remove the prostaglandin, the person who's having the IUI will have contractions and she'll be in pain.

The conversation begins with a disagreement between the two individuals as to when sperm is washed. [Lab Tech 1] points out that sperm wash is preferred when men have a low count or motility. [Lab Tech2] interjects to clarify to me that donors with a low count and motility are not considered for the program (lest I think otherwise). Client depositors, on the other hand, are paying customers storing sperm for themselves, so they are not judged by the same semen analysis standards as donors. [Lab Tech 1] stands by his statement that sperm wash is preferred for men with lower motility. [Lab Tech 2] suggests that washed sperm increases chances of pregnancy, especially when conception takes place through what he calls an

"unnatural setting." Both individuals disagree with Schmidt and Moore's argument that technosemen is the improved version of unprocessed semen. Yet, [Lab Tech 2]'s comment about washed sperm improving chances of pregnancy, nevertheless, implies a value-based comparison with unwashed semen. The latter signifies risk because it exposes the woman's body to biological substances present in the semen, which may adversely affect the woman's health as well as chances of pregnancy. Prostaglandins are enzymes present in seminal fluid which result in muscular contractions within the vagina and cervix to help sperm move toward the egg. By the time sperm cells reach the egg in the fallopian tubes, they have already passed through a filtration process separating them from the rest of the seminal fluid. Placing seminal fluid directly into the uterus would bypass this filtration process and cause severe cramps in the recipient.

In [Lab Tech 2]'s statement, there is an implied idea here that the human body is programmed to follow a certain set of rules, which cannot be changed. The body, in a way, is rigid in its functionality and it is up to the lab technicians to make the adjustments demanded by it. Hence, "nature" works best in natural settings, and "artificial" works best in "artificial" settings, but if "artificial" and "natural" are to work together, "artificial" has to change to adapt to "natural". The technicians understand their professional roles as doing nature's work, assisting nature where it falls short. But this artificial intervention must imitate, not trump, the natural reproductive process of the body or it cannot be successful. For the technicians, there is a sharp divide between natural and unnatural or technological processes. But [Lab Tech 2]'s comments also suggest that "nature" does not make mistakes, humans do. Hence, technicians' roles can actually fall short of "nature's work" because of the possibility of human error. Nature is

paradoxically portrayed as symbolizing both perfection and deficiency.

If ICI vials are understood as less processed, less clean,[49] not as conducive to bringing about a pregnancy as IUI prepared sperm, and not as profitable to the cryobank, why are they offered as an option at all? Why can cryobanks not simply offer IUI vials to ensure the best possible chances of pregnancy if clients are making such a significant investment of their time, effort and money? Cryobank employees stressed on the importance of offering choices to clients, which they believed was an important part of the North American consumer culture of freedoms and rights. By offering both ICI and IUI, cryobanks claim they give recipients the option to select whichever method of insemination they prefer and find affordable[50]. But I think that affordability, or rather, lack thereof, actually takes away the choice to pursue the best possible alternative for achieving pregnancy, even as it makes cryobank services more accessible to a larger market share. Recipients are compelled to select ICI vials not because they don't want the best possible alternatives, but because the only alternative they can afford is the lesser option. Currently, recipients choose ICI or IUI procedures in consultation with their physicians and preferred cryobanks. I found that client services staff did advise recipients on whether an ICI or IUI procedure would be more suited to their condition. In some cases, where female age and

[49] Every time I asked a lab technician whether their reference to unwashed semen as a "less clean sample" meant that it was "dirty" in some way, they always said "no." I suspect that lab technicians were hesitant to use the term "dirty" because it was too stark and extreme. After all, from a marketing point of view, why would clients want to purchase a "dirty" product, which reduced chances of pregnancy? Semantically, the term "less clean" had a less harsh impact than "dirty."

[50] ICI vials cost between $350-600 per vial while IUI may cost up to $700. Success rate of the procedures vary depending on the age of the recipient, female fertility history, treatment modalities, medication used for induction of ovulation, year of treatment, consecutive cycle effect and the use of fresh versus frozen–thawed spermatozoa (Botchan et al. 2001). There is no national data available on the success rates of IUI vs. ICI and results vary among studies. The American Pregnancy association rates the success of IUI from 10-20%. The IUI vs. ICI success rates at my field sites fell within this range. Source: http://www.americanpregnancy.org/infertility/iui.html (last accessed: 09/20/2011).

fertility was an issue, women were advised to choose IUI vials. Yet, I did come across cases where women ignored the advice of cryobank client services staff (much to their chagrin) and opted for home insemination with ICI vials because they wanted to go the cheaper route.

Apart from the costs, lab technicians shared three other reasons for creating ICI or IUI vials: (1) the quality of donor semen (particularly count, motility, viscosity); (2) the reproductive age of the recipient, and previous success or failure with insemination or other forms of assisted reproduction, and (3) administrative convenience for sperm bank lab technicians. ICI vials were made if the donor's semen was not too viscous or thick (above +1 viscosity), and if he had a high enough sperm count and motility to meet post thaw standards of cryobanks (between 5 and 20 million sperm per milliliter). ICI vials were preferred for homologous donors, especially cancer patients whose motility was already very low because washing further reduced motility. IUI vials were made when donors had a sperm count and motility that was high enough to meet the cryobank post thaw motility standards. Men whose semen viscosity was high enough to interfere with the insemination process were also recommended for IUI. Washed sperm was preferred for women who had previous problems conceiving and were older in age. IUI processed sperm was placed in the uterus rather than the cervix and, therefore, did not require a very high post thaw motility because the distance between the egg and the sperm was less and fewer sperm were expected to be "lost" in the process of reaching the egg.

Not all IUI and ICI vials were based on the quality of sperm or the conceiving ability of the recipient. Administration related issues such as time and convenience also factored into lab decisions about the types of vials to be prepared. Some cryobanks preferred to make IUI preparations in the morning when there was more time to perform the hour long procedure. ICI

procedures were shorter and were reserved for the afternoons. If donors arrived later in the afternoon, especially near the lab's closing time, lab technicians would only make ICI vials.

One can see that the categories, which at first appear to be based on the quality of sperm, are actually the result of several factors pertaining not only to the quality of sperm, but also to the recipient's reproductive health and the convenience of cryobank labs. Moreover, the categories of premium and suboptimal pertain not only to the biological quality of sperm, but also to its ability to withstand the technological processes of freezing and thawing. Thus, sperm may be labeled poor quality and rejected not because it cannot cause a pregnancy, but because it does not freeze well.

I have thus far talked about the ways in which new culturally value-laden labels are attached to sperm to minimize its liminal status. In the next section, I examine how lab workers draw on their personal and professional knowledge and experiences as they use image technologies to interpret what they see under the microscope. Whereas the visibility of sperm through image technologies has led to the classification of sperm as "normal" or "abnormal," and made it possible to be evaluated independently outside the donor's body, it has also enabled the transference of certain cultural categories from the donor to the sperm, such as the donor's racial and ethnic heritage and gender. Oral and written narratives acquired directly from the donor as well as from stories shared by other cryobank staff also contribute to the remaking of sperm categories.

Remaking Categories: Sorting, Labeling, Classifying

When I first expressed to one of the lab directors that I wanted to learn about semen analysis, he instructed me to begin with a computer-based tutorial on morphology. In order to

understand the health and pathology of sperm, I first had to learn to identify and sort normal sperm from abnormal sperm under a microscope. As I begun the tutorial, I was greeted by my animated guide Professor Normelix: an Einsteinesque caricature of a gray haired, bespectacled scientist in a white lab coat. Professor Normelix, as his name suggested, represented the authoritative figure on normality. As I examined slide after slide of illustrations and images of sperm cells of various shapes and sizes, Professor Normelix provided the subtext for framing the numerous images. Thus, normal sperm had a smooth oval shaped head, about 5-6 microns in length and 2.5-3.5 microns in width; a midpiece about 1.5 times the length of the head, and a thinner, straight uniform flagella or tail. Abnormal sperm, on the other hand, came in several shapes and sizes: round, one-sided oval, flat at tail implantation site, skew tail attachment, coiled tail, bent tail, puffball, dumbbell shaped, pyriform shaped, double-headed , double-tailed, absent tail; detached mid piece, too small or too large mid piece, acrosomal defects, neck defects and so forth.

In the labs, I often found myself overwhelmed by the sheer amount of technical information that I had to absorb and interpret – the constant juggling and balancing of numbers that technicians had become accustomed to in the routine of lab work. As I spent more time observing different labs, I realized that an important part of being a lab worker was to learn how to thrive in a constantly unpredictable environment. The world under the microscope was fast moving, ever changing and chaotic. It had to be slowed down or temporarily stopped, manipulated and transformed from its existing state into something more decipherable by the limited array of human senses. Naming, sorting, labeling and classifying were acts of controlling and making more manageable the plethora or stimuli. However, the lab workers I interviewed

also claimed to accept that the nature of their work would always involve some degree of ambiguity and uncertainty – elements they could not control. This meant that at times, meeting the standard meant settling for close approximations. “This is not an exact science,” observed one lab technician of semen analysis. “You have to work with estimates.”

Contemporary biomedical technologies of representation such as electron microscopes, computer assisted semen analysis (CASA) (which measures sperm count, motility and morphology), flow cytometry (an image technology which helps evaluate sperm cell viability, acrosomal integrity, and mitochondrial function), Sperm Chromatin Structure Assay (a test, which measures fragmented DNA in sperm), counting instruments such as Makler and Cell-VU chambers (which measure count, motility, volume, pH, white blood cells) among others, not only render semen visible, but also establish its existence as an independent entity outside the donor’s body. Semen and its components can now be identified, read as data, named, sorted, classified, compared, discussed and evaluated according to established standards. However, as Rapp (1999) observes, the “data” under the microscope do not speak for themselves. They require the accompanying deductions and interpretations of lab professionals in order to be classified one way or the other.

With CASA for example, lab workers must learn to identify and work with visual representations of semen and its components. The following example depicts how lab technicians subjectively identify and isolate semen’s components as well as its pathology. The example refers to the categorization of round cells within semen. Round cells (RC) represent an undifferentiated category of cells within seminal fluid, which are not sperm. They may be lymphocytes, macrophages, epithelial cells, sperm precursor (spermatogenesis) cells, red blood

Cells (RBCs), and according to lab technicians, “chunks of cytoplasm clustered together,” “extra cellular material,” which some lab technicians dismissed as “debris.” But, how circular did a cell have to be in order to qualify as a round cell? Round cells were sometimes slightly larger in size than white blood cells (WBCs) but this was not always the case. They had a nucleus, but so did WBCs. This ambiguous nature of round cells was something that lab technicians took in their stride. To them, the cause for concern was count rather than morphology. A large number of round cells in semen (over 20) suggested that they could be WBCs. The semen sample was flagged for special immunohistochemical tests for WBCs, and if at that point, the test yielded positive results, it was a sign that the donor had an infection and needed further testing. But sometimes a high number of WBCs could also signify that the donor was sexually abstaining for too long. One lab technician explained, “If you wait longer than three days, you’re going to have all these dead sperm cells and it’s probably going to increase your WBC count because they are going to be there as your body’s janitor to clean up all the dead cells so that’s probably one detriment: having WBCs hangin’ out cleanin’ up the mess of dead sperm cells. Your [sperm] count is still high, it’s just that your WBC count is high as well[51].”

The above example shows that the act of identification and categorization of pathology is based on isolating and excluding factors which do not fit standardized knowledge about semen’s biology. There may be many factors behind the same outcome, which must be further examined and ruled out. At this point, lab technicians might refer to the donor’s previous semen analysis reports (if this is not his first time at the cryobank) and compare his history. They may also refer

[51] The metaphor of WBCs as the body’s janitor is an example of how lab technicians often described the structure and function of cells and tissue to me. In my presence, I did not see them use such descriptions with each other.

to his medical history to see whether it can provide any information, which would help them understand the semen analysis results. Hence, even though semen is examined in isolation, it may become necessary to link it back to the donor for a relatively more complete interpretation of the outcome of its analysis. Lab technicians are more likely to refer to a donor's history if his semen analysis is "abnormal" rather than if it falls within the range of "normal." Nevertheless, I found that lab technicians frequently had some information about the donor outside of just his semen analysis report. Hence, one may say that there are different degrees of humanizing semen occurring in cryobank labs.

Identifying Social Behavior through Biology: Extracting the Donor's "Truth" from Semen

Technologies allow lab technicians the insight (literally and figuratively) into the donor's body to evaluate his social behaviors and lifestyle using "evidence" from his semen. Semen, although now separated from the donor, "speaks" about him. Sexually transmitted diseases and "recreational" drugs such as cocaine, LSD, heroin or even prescription drugs such as the use of Retinol for acne, for example, can be detected in semen and the donor can be disqualified as a result[52]. Lab technicians reported knowing when the donor had not honored the 72-hour abstinence period by checking the volume and viscosity of his semen. "You can tell just by looking at it [semen] that they've had [two second pause] an episode with someone," remarked one lab technician euphemizing her words in my presence. If donors regularly failed to abstain from the required 72-hour period, they were disqualified from the program. The reliability of the donor's verbal accounts was checked against the proof found in his semen. Here again, semen

[52] Retinol is known to reduce sperm motility and cause severe birth defects.

was treated as an entity independent of its donor, which testified for or against the donor by confirming or denying the narrative he provided cryobanks. One cryobank director was of the view that while the donor's motives could be swayed by the lure of financial compensation and he could be prone to lying about himself, his semen could not lie.

Social scientists have observed how "truths" from the body are extracted and used as clinical, forensic and legal evidence to supplement or contradict the oral testimonies of individuals. The idea that professional experts can read signs from the body as facts is strongly embedded in disciplines privileging the medical gaze. Foucault (1973), in *The Birth of the Clinic* observed how the modern medical gaze of 19th century biomedicine worked to control and discipline the "truth" of the body through diagnostic technologies, which measured, ranked, and classified the body so as to socially control its performance. Extending Foucault's analysis, Moore (2007) examined how semen testing technologies enabled sperm bank employees to supervise and discipline donor bodies through the vehicle of their bodily materials. The donor's narrative then became secondary to the narrative of his semen, which was inscribed with the agency to "object" to or "confirm" the stories told about it (Latour 2000:115).

Yet, social scientists have shown the limits of the body serving as objectified evidence, for even though bodies and body parts may be ascribed with the agency to speak for their owners, they cannot fully encompass their person-ness as they are divorced from their social contexts (see for example Crossland 2009; Fassin and Halluin 2007). Semen analysis does not render every aspect of the donor's life visible and available for cross-checking. The donor's intentions, inner thoughts, and even some outer social behaviors cannot be biologically validated. In some cases, the evidence present in semen may be too ambiguous to make any definite claims. One lab

technician recounted how some donors who frequently smoked large quantities of marijuana would have a higher round cell count. She recounted how she suspected one donor was smoking large quantities of marijuana even though his personal narrative documented in his medical records suggested that he limited his marijuana intake to twice a week (the limit allowed by the cryobank). She strongly suspected that the donor had been lying to the cryobank, but was not sure about it as other factors could also be influencing his round cell count. “That’s the one thing about our screening process, and any sperm banks screening process, which I find frustrating,” she said with a sigh, “The thing is, everyone must go by the idea that what the donor says is true. There’s no way to check if a donor says, ‘I don’t drink, I’m not an alcoholic.’” The panopticon of medical tests and technologies had its limits when the “narrative” in the donor’s semen was too ambiguous to interpret. This ambiguity resulted from the dissonance between preconceived standards of normality and the laboratory technician’s ability to interpret the actual observed phenomena, which defied pre-existing standards. The narrative existed, but it needed appropriate framing to be interpreted.

Transferring Categories from Donor to Sperm

The Use of Color Codes

Many cryobanks use a system of color coding to visually recognize and separate the sperm vials of different donors. The cryobanks where I conducted my research employed up to twelve or more primary colors to identify vials. Vials were commonly categorized according to donor type (anonymous, directed, willing-to-be-known or homologous), type of procedure, (IUI, ICI, ART, IVF), ascribed value (premium, grade 2), pre or post thaw, pre or post quarantine and so forth. Some cryobanks also used racial categories to categorize vials. At least two cryobanks

admitted to color-coding donor vials by race. One cryobank used white-capped vials for Caucasian donors, black-capped vials for African American donors, yellow for Asian donors and red for Others – an undifferentiated category, which included Native Americans, Hispanic, biracial and other mixed race individuals into which everyone who did not fit the first three categories were subsumed.

As lab technicians comprised of Asians and African Americans in addition to those of European descent, I was curious to know their stance on the racialization of donors. None of the lab technicians I talked to knew who within the cryobank had come up with the racial categories. However, they classified the donor according to the racial and ethnic categories with which he chose to identify. Racial and ethnic categories became important once recipients started demanding racially diverse donors, and cryobanks had to figure out pragmatic ways to visually identify vials at a glance so as not to accidentally ship the wrong semen vial. One lab technician recounted a story when a "White" recipient accidently received a "Black" donor's sperm and was not very happy with the outcome. But contrary cases were reported as well where a Black recipient was inseminated with a White donor's sperm and ended up having a lighter skinned baby[53]. With an increase in South Asian donors, one cryobank adopted the new category of brown color-coded vials. The labeling of the Other/red category was particularly interesting. "Red is for everybody who has a bit of something else," said one cryobank lab manager, which signaled to me that the category suggested the idea of "pure" and "mixed" races, as well as reducing race to skin color. As anthropologists and geneticists have shown, phenotypic and

[53] I do not have any firsthand observations to report how race and ethnicity played a role in the recipients' reactions to accidental mix up of donors. The stories that were told to me were second hand and always described as being in the distant past. I was not given any detailed specifics.

genotypic traits are not as seamlessly collapsible or directly inheritable. Schmidt and Moore (1998) have observed how such racialization of donors and their sperm reifies stereotypical notions of race. Lab technicians admitted that the categories were problematic. They recounted instances where a donor had identified himself as African American when he really looked multiracial to cryobank employees or if he identified himself as Arab, but he really looked "Black African". Nevertheless, lab technicians, even those who identified as persons of color did not make any statements suggesting that they felt offended by the cryobank's categories. Some were of the opinion that these labels were a pragmatic and convenient way of identifying a vial when peering from above into a liquid or vapor nitrogen filled container. For the time being, they served the purpose.

Identifying Sperm Through Gender

Sperm always carried the male gender of its owner. I did not come across any instance where sperm was discussed as female. Cryobank employees used gendered language in my presence on several occasions, referring to sperm such as "spermies," "soldiers," "lil guys," "lil dudes," "fellas," "boys."I found that female lab technicians tended to refer to sperm in a way that made it appear less sexually threatening and more docile. So, female lab technicians were more likely to refer to sperm as "lil guys," "spermies," "lil dudes," "lil swimmers" and "lil fellas." Male lab technicians were less likely to use the term "spermies" and more likely to use the term "guys" or "soldiers" or "buddy." For example, one male lab technician, while examining sperm motility under a microscope commented, "Alright, buddy, let's see what you got."

Representations of sperm as "little" likened it to children, reduced its masculine power status and stripped it of sexual connotations. It also revealed women's somewhat ambivalent

relationship with it for as much as sperm symbolized fertility, sex and love, it also symbolized uncontrolled lust, risk and danger of sexually transmitted diseases and gendered forms of violence such as rape and sexual assault where sperm could be used as a weapon against women (and men). In order to reduce the sexual threat sperm posed, female lab staff had to imagine a non-sexual relationship with it. As women are culturally trained to be nurturing towards children, representing sperm as "little" also implied a parental/trustee/ guardian relationship between them and sperm. Male lab technicians also admitted to being trustees/guardians of sperm on behalf of donors, client depositors and clients, but they did not express this relationship in a parental way. For male staff, sperm was represented as a friend or buddy, which helped diminish the threat of aggressive masculinity and instead, established the relationship as allies.

The metaphor of racing was also commonly used by both genders to describe sperm motion, especially forward progression. On more than one occasion, I witnessed lab scientists express disappointment with sperm for not being able to swim forward as expected. One time, I saw a male lab technician cheer one client depositor's sperm as if he was cheering someone in a race to the finish line. "Come on! Come on! Do it!" he exclaimed, shaking a tightly clenched fist in the air as he peered through the microscope. I learned that the client depositor whose sperm was being examined was suffering from leukemia and about to undergo chemotherapy, which would render him infertile. Sperm viability was, therefore, crucial for him, and the lab technician, aware of the donor's medical condition, was playing the role of his advocate. The man's sperm was given an agency in the hopes that it would not betray its donor's (and lab technician's) trust by not progressing forward. I observed that lab staff were more likely to use gendered language for sperm when talking to me rather than when they conversed with each other. In much of

"labspeak," sperm was a representation of numbers on different measurement scales and standards.

The data I have described above reiterate that while there are certain elements within semen, which are examined in isolation, they are eventually reattached to the donor. Sperm may be disembodied, but it is not completely delinked from the donor. It is not only ascribed the donor's unique identification number (which is often interchanged with the donor), but is also marked with the donor's gender, nationality, race and ethnicity. In the following pages, I show that sperm not only carries the specific biomedical and social history of its donor, but is relinked to him at several levels through narratives and interactions between cryobank staff about the donor. As lab technicians have the most frequent contact with donors, they "read" sperm in the context of these multiple narratives. Hence, their evaluations of normal or abnormal sperm are informed by these narratives as well as by industry standards.

"What's His Story?" Identifying the Man in the Semen

A lab technologist is performing sperm counts on a Makler chamber. I stand behind her, watching keenly, notebook and pen in hand, my outfit draped in a lab coat, hair carefully tucked underneath a clear plastic cap. First, as part of the quality control procedure, she checks to make sure that the chamber has been heated to 37 degrees C – the average human body temperature. Sperm, she tells me is extremely sensitive to temperature. A sudden change in temperature levels, even if for a short period of time can be detrimental. Other lab technicians have also described sperm as a "delicate" and "fragile" entity. This description is striking because it is quite contrary to the resilience sperm is expected to show to withstand freezing and processing procedures.

With expert ease, the technologist suctions a small drop of undiluted semen (I am told the

standard is 5 microns) obtained from the sperm sample of an anonymous donor, and loads it onto the center of the glass chamber. Using CASA, she counts the number of sperm cells for motion, and progression. She records the numbers on the donor worksheet, then beckons to me to "come see the lil' boys move across the field," referring to sperm moving across the Makler glass. I imagine a football field with sperm racing furiously over the 50-yard line, as I take my turn at the microscope. The technologist explains that the Makler is divided into 100 squares of 0.1 mm length and breadth. In order to perform sperm counts, one only has to look at the total number of progressively moving cells (i.e. cells "swimming" forward) at a given time in any of the ten squares. Each square represents a million, so four sperm cells on one square would mean four million cells.

The World Health Organization (WHO) has recommended 20 million motile cells per mL of sperm as the average sperm motility in men to ensure pregnancy. In sperm donors, the number of motile cells has to be at least twice the amount because thawing after cryopreservation reduces sperm cell motility and viability by 40-60% (see for e.g. Lee et al. 2011). However, based on the success of pregnancy rates and the type of insemination procedure involved (e.g. IUI, ICI or IVF), many cryobanks accept donors whose post thaw motility varies between 5-15 million sperm cells. This particular donor's first assay i.e. his motility before freezing is low enough to convince the technologist that his sperm cannot be suitable for either intra uterine insemination or intra cervical insemination. "Nah," she clicks her tongue, shaking her head in disapproval, "You got lousy motility, dude!" I wonder if she is addressing the absent donor or his sperm. Her next statement confirms that she is in fact talking about the donor. "This guy's got lousy motility,"

she sighs scribbling down numbers on the donor's lab work sheet. Then, as if speaking to herself, she softly she mutters under her breath, "Wonder what's his story?"

The lab technologist is using standardized technologies and statistical tools to measure and evaluate sperm. In the process, she employs industry standards about normality and abnormality and compares them to the cryobank's standards of acceptable semen analysis, which, depending on their marketing position, may or may not exceed industry standards[54]. A second set of standards is based on biomedical knowledge gathered from standardized textbooks, atlases, encyclopedias and other educational materials about the ways in which human sperm should look and function. When sperm does not meet these standards, lab workers are likely to look for reasons behind the "deviation" in the donor's past semen analysis records, and if needed, his medical history[55]. In the above example, the donor's unusually low sperm motility makes the lab technologist question the circumstances in his individual medical history, which may have contributed to the abnormal results. This questioning alone reveals that the technologist is thinking about more than just the sperm "specimen" under the microscope.

Cryobank policies on "normal" and "abnormal" sperm were not uniform across the industry. Some cryobank laboratories were only concerned with differentiating between normal

[54] Bowker and Star (1999:13) describe standards as "agreed-upon rules for the production of (textual or material) objects." Lampland and Star (2009:5-8) observe that standards are unevenly distributed, deeply integrated and nested inside each other cutting across local and global regimes, relative to the user and communities of practice, and embody values and ethics that matter to people's live. Extending over time and space to several social worlds and communities of practice, standards aim to homogenize diverse metrics, are enforced mainly by governments and legal authorities, entrenched within governing structures, and difficult and costly to change. Indeed, even though many lab technicians do not always agree with the standards currently put in place, they must adhere to and abide by them. Standardization of procedures is necessary to depict that the cryobank has a systematic way of operating. Following rules, protocols and procedures is important for the cryobank's reputation in the industry, a way to ensure credibility among clients and competitors, and gain acknowledgment and approval from regulatory authorities (through licensing, accreditation etc).

[55] I do not claim that lab technicians solely consult a donor's medical records if pathology is detected, only that they are more likely to do so in cases of pathology than if semen analysis falls within the range of normal.

and abnormal sperm, while others focused on the type, location and degree of abnormality. Lab technicians shared that standards served as a baseline for comparing and analyzing sperm, but acknowledged that there were no universal standards for measuring abnormality. One cryobank director and medical technologist went as far as to say that the term “abnormal” was erroneous. “You can no longer say that there is such a thing as a normal or abnormal sperm count. Abnormal is when you see nothing [no sperm]. So when you see something, you can always use it.” He gave the example of intra cytoplasmic sperm injection which required only one sperm injected directly into the egg for insemination. Still, the director was not referring to donor sperm, which was based on more strict criteria of evaluation than sperm from directed donors chosen by recipients or client depositors who stored their own sperm.

Currently, cryobanks assess morphology using two standards. The first is based on the guidelines of the WHO and takes into account a general estimation of normally shaped sperm in semen. The second and increasingly popular standard of assessment is based on the “strict criteria" or Kruger criteria, which is usually recommended for men who have unexplained fertility or whose semen appears to be otherwise normal in terms of count, motility and so forth. Strict morphology critically examines the shape of sperm that result in the actual fertilization of the egg. Even the smallest sign of “defect” in the size and shape of a sperm cell is labeled abnormal under the strict criteria. The WHO’s Lab Manual for the Examination of Human Semen (first published in 1980 and currently in its fifth edition, 2010) is widely accepted as the laboratory standard for human semen analysis. However, there remain controversies about sampling errors including the study’s selection of reference populations and the interpretation and application of “normal” and “reference” values for semen. Cooper et al. (2010) observe that

the reference populations, ranges or limits in previous WHO data are not clearly defined and do not take into account groups such as recent fathers. While the revised edition of WHO's 2010 manual does take into account recent fathers, one sees an arbitrary definition of the WHO's reference range to be men whose partners took 12 months or less to become pregnant. The manual draws on raw data from between 400-900 semen samples from eight countries on three continents. However, the data does not account for cultural practices or environmental, social, and economic factors, which might also affect semen quality. According to Cooper et al (2010) the manual does not specify the similarities or differences in the analytical methods employed by reference laboratories from whom the data is obtained. Moreover, there is no consensus across laboratories about the appropriateness of the cited values for sperm concentration, motility and morphology, as some centers consider them too high and others consider them too low. These critiques render visible the discrepancies behind the apparent seamlessness of standard figures and measures and reveal their arbitrary adjudication by researchers.

As mentioned above, all of the lab technicians and technologists that I spoke to were of the opinion that standards were really suggested estimates proposed by regulatory agencies. However, sperm's biology-ness resisted uniformity, not only at a biogenetic level, but also on a biochemical level. Individual donors had their own unique body composition as well as individual responses to environmental factors, which affected their sperm cells. There was even variation within a donor's performance over time, which was perceived as normal in the context of that particular individual. For example, it was expected that donors who produced a sperm sample while they were recovering from an infection would have a higher white blood cell count. Although the appearance of a high number of white blood cells in sperm could be interpreted as

abnormal out of context, steady communication with sperm donors ensured that lab technicians interpreted the results keeping in mind the donor's specific context. Hence, an elevated white blood cell count if the donor was recovering from a high fever was seen as the body's normal reaction to a foreign host. The donor could be "strong" on some days and "weak" on others, and his sperm count and motility could also vary accordingly. If the donor did not abstain from ejaculation for 72 hours or abstained too long from ejaculation, it would also affect his count. According to some lab technicians, most men's semen consisted of at least some abnormally shaped sperm, and overall morphology was considered normal if at least over 10-12 percent sperm were of normal shape (a number determined by the cryobank based on previous successful pregnancy rates). Normality was, therefore, variable and contextual with every donor, even as industry standards only allowed variability within a standard range.

Linking Standards and Stories

As lab technicians had the most frequent contact with sperm donors, they would share how, over a period of time, they came to know about the donors' families, professional and personal milestones – graduations, changes in marital status, birthdays, anniversaries – family illnesses, changes in health and so on. Some lab technicians even admitted to addressing a few long-term anonymous donors by their first names even though as a rule they were not supposed to do so[56]. Lab technicians could also obtain access to the donor's or client depositor's medical records if they needed, and had some knowledge about their health status through discussions with medical directors, client services staff and donor coordinators.

[56] This act raises the question of whether donors really are anonymous – an issue I discuss in my chapter on donor anonymity.

The following example pertains to a client depositor and not an anonymous donor, but I describe it because it provides some insight into how lab technicians associate narratives of men with their semen.

At one cryobank, I was observing one of the lab technicians about to process a client depositor's semen, when the client services manager rushed in and asked the technician to make an ICI vial instead of an IUI vial. She related that the man was suffering from testicular cancer and his sperm count was too low to survive the IUI procedure. The client services manager looked clearly distressed, her eyes brimming with tears as she described to the lab technician how difficult it had been for the young man to sit in his chair and talk to her because he recently had one of his testicles removed. She took the lab technician aside to discuss the client's personal information out of my earshot since I was not an employee. The lab technician clicked her tongue and shook her head to show her sadness as she proceeded to make the ICI vials. At this point, a second lab technician joined us, inquiring as to what happened and the first lab technician recounted the story to her. "We're getting younger and younger cancer patients these days," said the second lab technician and they launched into a conversation, describing to me the cases of men as young as 17 and 18 years of age, who were diagnosed with cancer and who stored their semen at the cryobank before starting chemotherapy. For some of these men, the long-term diagnosis was grim, yet storing their semen symbolized hope of a future, which was important for them and their families. For the technicians, the narratives around semen were not just confined to the donor. Drawing upon their moral sensibilities, the narratives extended beyond him, connecting him to the narratives of other men who shared his condition and to

related stories in the media. For example, while most lab technicians were sympathetic to younger men storing their sperm, some of them did not feel the same way about older men. A few times during semen analysis, I was asked to switch off my recording device because the technicians did not want to go on record discussing the donor. “This guy,” said one technician pointing to a semen vial in the midst of ICI preparation “is 62 years old. *62 years old*! Why would this old guy do such a thing? What use does he have?” “Maybe he was told by his physician to store his sperm so that he could have an heir if he got remarried to a younger woman,” responded the second lab technician and they launched into related stories they had read in the media or encountered in their personal experiences of legal battles in which cryobanks became involved from time to time. At one time or another, most cryobanks became involved in cases over inheritance as well as property rights and ownership of client depositor semen in case of divorce or death.

Stories of anonymous or known donors, when informally circulated in the process of semen analysis were built up on the information provided by donors in cryobank questionnaires and interviews. During the course of their interactions with donors, lab staff would frequently become aware of the donor’s professional status, marital status, number of children, medical history, education and so forth. Semen became the site of sociality from which the individual branched out into broader social connections with others. The stories lab technicians shared about donors and client depositors involved elements relating to donors’ reported experiences as well as elements of fantasy projected on to the information that men provided about themselves. For example, one time, an anonymous donor walked into the lab to hand over a vial of his semen

to one of the female lab technicians. After he left, a second female[57] lab technician commented on how much the man looked like the American actress and popular icon Angelina Jolie's brother. She asked how old he was and whether he was a student to which the first lab technician confirmed that he was indeed a 22-year-old student. "Bet he has crappy sperm," commented the second lab technician and launched into her personal theory of how she had observed in her experience that many physically attractive sperm donors had suboptimal sperm motility while the less attractive ones had good motility. Her theory was that physically attractive men were inclined to be sexually promiscuous so they could increase their chances of producing children by having sex with many women, while "ugly" men had good motility to compensate for their lack of luck with finding a lot of sexual partners. I heard a similar variation of this story by another female lab technician at an unrelated cryobank. The lab technician was piecing together bits of the donor's information and relating it to a celebrity. Her theory about the existence of an inverse relationship between physical attractiveness and sperm motility reveals how broader cultural values insert themselves into beliefs about science. In this case, her observation implies that physically attractive men are somehow hardwired to be sexually promiscuous while "ugly" men must make the most of their limited options because of lack of luck with sexual partners. But notions of attractiveness, physical beauty and luck are culturally shaped and there exist many exceptions to the lab technician's theory. I did not observe the results of the donor's semen analysis, but upon inquiring, I was told that they were normal. Still, this example shows that lab

[57] I emphasize gender here because I did not observe male lab technicians theorize about donors in this way. Then again, male lab technicians were few and of the three that I observed, two had joined the cryobank relatively recent and were cautious about making statements while being recorded, although one of them did use gender preferences for sperm. The third senior lab technician did not have English as a second language although I did observe instances where he quite openly anthropomorphized sperm.

technicians are not viewing semen as an isolated scientific specimen, but relating it to donors and to other familiar persons, stories and events.

Many lab technicians admitted to feeling more emotionally attached and invested in working on client depositor's semen samples, not only because they were more "interesting" and "more challenging to analyze," as some lab technicians stated, but also because there were no taboos on discussing the man's identity openly. Some technicians reported that they felt a more immediate sense of "doing something good for someone" when working with client depositor semen. Social narratives about the donor helped to make sperm more "human". Narratives of pain, suffering, drama, fantasy and comedy broke the tedium of performing repetitive standardized tests. If anything, they showed that lab technicians *wanted* to know about the person attached to the sperm.

These various levels of humanizing the sperm donor are in sharp contrast with the dehumanizing processes of deceased organ donors as described by Waldby and Mitchell (1996), Hogle (1999) and Sharp (2000). Hogle (1999:142), for example, describes how as soon as brain death is declared, procurement personnel drop references to the person as patient and stop referring to them by their names. Instead donors are instead addressed by the cause of their death, age, hospital location or "simply as the donor, or the twenty-four-year old drive by shooting at General Hospital." Why must organ donors be dis-membered in discourse while sperm must be re-attached to the donor? There are several likely reasons that come to mind. The first is that it is difficult to separate sperm from the sexual act. Even though there is a difference between sex and reproduction, in the case of male reproduction, the two acts are so intimately related that it is

difficult to imagine them separately (the only way to obtain sperm outside of sexual intercourse is through masturbation – also a sexual act). It is difficult to imagine the act of sex without a doer. Also, attached to notions of sex and sexuality are cultural notions of love, romance, relationships and marriage, which are also structurally built into cryobank marketing. Cryobank marketing further builds upon these fantasies, images and narratives about ideal partners and projects them onto sperm so that recipients are given the idea that they are purchasing their ideal mate when they purchase sperm.

Secondly, sperm donation is, quite literally, about birth and co-creating new life. There are, therefore, cultural beliefs about the sanctity of the nuclear family and notions of likeness attached to sperm. That is, the cultural value placed on who the donor offspring looks like will keep serving as a physical reminder that someone other than the birth mother was involved in making the existence of the child possible. Thirdly, sperm is obtained from a live donor. It does not involve the loss of life and, hence, the linguistic euphemisms used by the organs industry to alleviate feelings of guilt, pain and remorse in recipients and donor families are not necessary (even though the cryobanking industry has its own set of euphemisms to minimize associations with sex). Fourthly, lab technicians have some form of contact with the actual donor and, hence, even if they do not know his name, the mere fact that sperm is human material derived from a living male-bodied individual cannot be denied. Sperm can never be completely disassociated from its human qualities.

Conclusion

Human biological materials are derived from human sources, and even when divorced

from their origins, may refer back to them in some way. Lab technicians imbue sperm with the agency to “speak the truth” on behalf of its donor. Sperm is not only a biological specimen; it is seen through the social and cultural lens of the donor’s gender, race and ethnicity as well as industry standards of normality and pathology. Added to these categories are cryobank employees’ own personal and professional beliefs and understandings about good and bad, normality and pathology. While cryopreserved sperm may be stripped of the donor’s personal identifiers, it carries the donor’s social traits in the form of color codes and labels. It serves as “proof” of his habits and behaviors, adding an independent testimony to the donor’s written narrative. The scientific narratives produced about sperm do not exist outside cultural boundaries. As sperm is derived from a human source, it is imagined in relation to that source. This relationship between sperm and is source is created and maintained through the work of narrative. Sperm, then, carries within it an essence of the donor that cannot be erased. Sperm cannot be completely disassociated from its humanness.

CHAPTER 6

Negotiating Reproduction and Power in the Regulatory Shadow: Cryobanks and the Construction of Sperm Donor Risk Profiles

On May 25 2004, the Food and Drug Administration (FDA) issued its Final Guidance for Industry: Eligibility Determination for Donors of Human Cells, Tissues, and Cellular and Tissue-Based Products. The guidance became effective in 2005 and remains a current source of controversy in the cryobanking industry. The very first condition for donor ineligibility as listed under § 1271.75(d) of the guidance applies to men who have sex with men (MSM). Accordingly, men engaging in homosexual sex in the preceding five years are deemed ineligible as sperm donors because of their potential high risk for transmitting human immunodeficiency virus (HIV) and hepatitis B. Although the placement of MSM in a "high risk" category has been challenged by human rights and gay rights activists, the guideline has been adopted by a majority of cryobanks and reinforced by professional institutions such as the American Association of Tissue Banks (AATB) and the American Society for Reproductive Medicine (ASRM) to the extent that it has come to have the force of law. While many cryobank directors and employees claim that the guidelines are not discriminatory towards gay men, citing the distinction between gay *identity* and homosexual *behavior*, my own fieldwork reveals that cryobank directors *do* consider MSM high risk, not only from the point of disease transmission, but also as a financial burden and liability. Although HIV detection and treatment technologies have become more sophisticated and advanced since the 1980s, the association of the disease with gay men continues, and the political and religious stigma attributed to homosexuality makes it a high risk category alongside other marginalized groups such as prison inmates, drug users, sex workers, immigrants, and

certain ethnic groups.

For federal agencies such as the Center for Disease Control (CDC) and the Food and Drug Administration (FDA), risk means contagion. FDA-proposed regulations and guidelines are restricted to the screening and testing of donors and tissue for infectious diseases. For cryobanks, the idea of risk is much more pervasive, infused in everyday conversations about donors and donor semen. Risk, from the perspective of cryobank owners and employees intertwines notions of biomedical risk (danger of infectious and genetic disease transmission), economic risk (possible loss of clients, profits, sales) and legal risk (liability). An extensive paper trail is important not only to trace the history of a disease, but also to facilitate licensure, certification and accreditation, and serve as tangible evidence in a court of law that the cryobank is following rules and procedures. But, I argue that the language of risk[58] in assisted reproduction is about much more than the management of liability or contagion or finances. It is about disciplining, managing and controlling the *reproduction* of behavior, morality, desire, identity and persons. Risk claims play upon the human instinct of fear. Couched in the culturally accepted logic of Western science and reason, risk normalizes and naturalizes the affirmation or condemnation of certain beliefs and practices held by those in power, making them appear justified and rational. For example, the risk of bioterrorism allows governments to exercise surveillance measures on populations to an extent that would otherwise be questionable if not illegal. However, the public is given the message that this infringement of privacy is important for *their* safety and protection.

This chapter discusses how risk becomes the legally legitimizing language that regulatory

[58] I would like to point out here that while risk and uncertainty are two different technical concepts, which are managed in different ways in that risk is quantifiable and, therefore, accounted for in regulatory and governance models, while uncertainty is not, my respondents often conflated risk and uncertainty.

agencies and cryobanks use to discipline the reproduction of donor behaviors, moralities, and identities. The underlying concern is about who can or should be allowed to participate in reproduction and, ultimately, the kind of society humankind envisions for its future. By excluding certain kinds of donors on the basis of their risk status, FDA regulations become the site of discursive politics and hegemonic power. In this chapter, I am concerned not only with the process of cryobank compliance with regulations in the sense of codified prescriptions and requirements of regulatory agencies, but also with compliance of prescriptions and guidelines that, while not having the force of law, may come to have the effect of law if followed up a majority of individuals and groups, especially those in positions of power and influence. The distribution and sale of risky tissue recovered from risky individuals presumably engaged in risky behavior adversely affects the cryobank's social reputation.

To mitigate risk and risk perceptions, reduce liability and increase sales, cryobank directors draw upon the recommendations and guidelines of professional agencies to formulate internal policies. These internal policies, which also reflect the moral and political philosophies of individual cryobank directors, now gain formal legitimacy because they are endorsed by an established authoritative source. In the process of regulatory compliance, cryobank representatives become moral arbiters, about the biological and social "fitness" of men whose inclusion or exclusion in the reproductive process also shapes the reproduction of the desired social body. I begin with a review of related literature on anthropological understandings of law, to show the social construction of law and the relationships of power and hegemony within which it is embedded. Then, I discuss how narratives of risk historically became part of cryobanking, demonstrating with ethnographic examples the regulation of risk management and,

consequently, the management of reproduction.

Law, Power and Hegemony: Constructing a Theoretical Framework

Drawing upon Carol Greenhouse's (1989) study of the relationship between cultural conceptions of "social time" and the organization and management of legal institutes, Post (1991: vii) observes how the discourse of law is commonly understood as autonomous, its claims to justice, objectivity, and reason, and the complexity of its language attributing to it an ethereal quality, which sets it apart from (and perhaps above) the ordinary workings of life. "We have long been accustomed to think of law as something apart," he claims, "The grand deals of justice, of impartiality and fairness, have seemed to remove law from the ordinary, disordered paths of life. For this reason efforts to unearth connections between law and culture have appeared vaguely tinged with exposé as though the idol were revealed to have merely human feet." Yet culture, according to Post is the precondition for the very possibility of human meaning and social order. For social scientists law is a social and moral institution. Like all aspects of human life, law exists within a specific cultural and historical context and propagates the views of specific parties – those who have the power to shape its language. Anthropologists have long been interested in law and its relationship to social structure, economics and power. Public disputes, litigations and debates – what Llewellyn and Hoebel (1983[1941]) call the "law-stuff of culture" especially remain topics of sustained anthropological interest. According to Strathern (2005) legal disputes are culturally significant not only in terms of the positions people defend, but also the cultural resources – narratives, tropes and images – they bring to their defense in the persuasion of their viewpoint. It is these claims and appeals to law that give some tangibility to abstract aspects of culture and allow for empirical analysis.

Douglas (1966) observes that disputes signify disorder, danger and ambivalence by blurring or mixing of categories. Laws are sought to regularize categories and maintain some semblance of cosmological order[59]. Yet, law-making from the very beginning is a normative activity fraught with uncertainties. Even when legal proceedings are video-taped and publicly televised (e.g. the beating of Rodney King, the OJ Simpson trial), they retain some ambiguity as they are perceived and interpreted in different ways across varying cultural and political settings (Rosen 1996). Public perceptions of law and legal outcomes also vary because people have different relationships with law and varying notions of justice. Scholars of social sciences and law observe that the study of law cannot be complete without the study of power and hegemony (see for e.g. Nader and Todd 2002; Starr and Collier 1989). Indeed, not only do legal disputes, debates and litigations reveal the cultural ideologies of those who use law or wish to change it, but legal rulings over these debates also reveal the ideologies of legal experts and adjudicators (i.e. the judge and the jury). The codification of a set of social and moral beliefs and values through law has consequences for all those within its ambit, but more so for those who will be marginalized or excluded by them.

It is with these ideas that I approach my analysis of cryobank regulations. I see laws and regulations as directives formulated out of the interaction between courts, governments, communities, interest groups, local and global knowledges and laws, science and technology and so forth. Laws entail relationships of power, both coercive and hegemonic. They reflect the values and beliefs of the dominant group(s), but may also be challenged or resisted by those

[59] Rosen (1996:170) describes anthropological understandings of cosmology as an "entire realm of experience as a unified and sensible whole."

whose power is threatened as a result. While references to law in this literature review are meant to encompass a more generalized notion of codified regulatory prescriptions, in technical terms, laws and regulations are not the same although both are formulated by agents with authoritative power to mandate them and hold accountable through disciplinary or punitive action against those that do not comply. Laws in the US are introduced by the Senate or House of Representatives as legislative bills and created by statutes. Regulations, on the other hand, are promulgated by Executive Agencies. After consultation with the public, they are finalized and published in the Federal Register. A regulatory agency researches an issue and proposes a regulation, which is published in the Federal Register for public comments and feedback. Eventually, after modification or adoption, it is published in the Federal Register as a Final Rule[60]. While the process of making laws and regulations is different, their effect is the same. That is, noncompliance with both is a punishable offense. Guidelines and guidance documents are written recommendations and suggestions proposed by regulatory agencies, which do not have the force of law or regulation.

My ethnographic analysis of law and power is influenced by the ideas of Laura Nader, Michel Foucault, and Antonio Gramsci. I also find the notion of the "Other" (as proposed by Edward Said, Deborah Lupton and similar scholars) helpful in understanding how the language of risk informs regulations, which separate individuals into categories of the privileged and the marginalized. I illustrate this point in greater detail in this chapter when I discuss the ban on men who have sex with men. Nader (2002:13) observes that law reflects the beliefs of particular classes. According to her, "Systems of thought reflect the interests of certain classes that attempt

[60] Source: http://www.usa.gov/Topics/Reference-Shelf/Laws.shtml (last accessed November 2011).

to universalize their beliefs and values as they are generated by those involved in the production of culture." Nader's own ethnographic work, which involved studying the processes of problem solving in the local Zapotec courts in Oaxaca, Mexico, was influenced by Gramsci. In his famous Prison Notebooks (1929-1935) Gramsci proposed the theory of power as hegemony. According to him, the "fundamental group" (his euphemism for "dominant class") manipulates and controls societal beliefs not through coercive force, but rather indirectly through legal and educational institutions, for example, where the cultural and ideological values of the bourgeoisie are made normal and even desirable to the public. Whereas hegemony allows for the examination of class-based power structures and ideals, which are naturalized and normalized in everyday discourse, Foucault's (1977) theory of power as a decentralized, disciplinary force helps examine the relationship between law and power. Foucault did not support Marxist views of power as residing in individuals or social structures. Power was not always repressive or centralized in core structures such as courts and bureaucracies. For Foucault, power did not emanate from a single source; it was created at the intersections of relationality. Law was a means to expand institutional power, produce knowledge and gain social control over individuals and, ultimately, over society. The drawback to Foucault's view of disembodied power is that it does not allow adequate attention to either individuals or institutions. Individuals may have more or less agency relative to each other because of social, economic and other disparities, but their agency, social and economic status and ability to exercise power and authority is also considerably bolstered when they operate from high ranking positions in institutions such as government agencies, militaries, courts, corporations and so forth.

Additionally, Foucault does not account for culture or for the subject. He does not

consider the individuals working within the institutional structures he studies (hospitals, prisons, state bureaucracies and so forth) whose cultural contexts, philosophies, and ideologies contribute to the shaping of public policy. Foucault does not define institutional structures (e.g. his references to "the state" are abstract and amorphous), rather he is concerned with their consequences. I am as interested in the content and processes of laws as the people who make them. Keeping in mind the above theoretical frameworks, I now turn my attention to the topic of risk and its role in shaping regulation on sperm donation.

Public Health and the Regulation of Risk: Construction of Risk Profiles

Reproductive and genetic technologies have rendered the process of both assisted and unassisted reproduction – from the selection of a mate (or donor) to conception, pregnancy and childbirth – more public and scrutable. This public nature of reproduction also lends itself to new risk discourses. Social science scholars have observed how assisted reproductive technologies coupled with the language of risk have privileged the narratives of physicians over the narratives of pregnant women. Technologized, physician-orchestrated births have rendered home births risky and uncontrollable while technologies such as pre-implantation genetic diagnosis (PGD) and fetal sonograms have decentered women's health from the reproduction debate, focusing instead on the safety of the unborn fetus (Rapp 1999; Wendland 2007; Franklin and Ragoné 1998; Davis-Floyd and Dumit 1998).

In public health, the concept of risk assessment has been around since the eighteenth century and has been expressed in various ways: hygiene, miasmas, urban sanitation, management of dirt, filth, and germs. In the twentieth century, as the body became more medicalized, risk was constructed in biomedical terms. With the rise of genomics and especially

the Human Genome Project, risk has come to be defined in genetic terms. It is not simply individuals, but genes which now harbor risk. Beck (1992) and Giddens (1991), writing in the context of environmental risk observe how risk permeates all aspects of life to the extent that its appraisal must be incorporated into all of life's planning and decision making. The notion of risk as it is currently used does not suggest the actual occurrence of an event, but rather the probability that such an event might occur in the unforeseen future (although the apprehension of such an event may be based on past experience). Petersen and Lupton (1996) argue that the concept of risk classifies all bodies as potentially being in a state of illness and disease. The concept of health, on the other hand, takes on a more liminal status and refers to the absence of symptoms or potential risk leading to illness. Hence, one is not in a positive state of health, but rather in a negative state of absence of disease symptoms.

For science and biomedicine whose goals include control over the body as well as its environment, risk must be managed. Epidemiological theories, therefore, tend to focus on preparedness and preemption more than cure (Castel 1991). But Beck (1999) has shown that more preparedness does not necessarily reduce risk perceptions, rather it increases them instead. My own fieldwork data shows that more testing does not reduce fears of risk in recipients of donor sperm (as reported by cryobank representatives) or even for cryobank directors and employees. False positives, lab errors, limited availability genetic tests, complexity of interpreting genetic information, omission or deliberate suppression of health-related information by the donor are some reasons that make cryobank claims of absolute risk elimination a liability

issue[61]. There is no way to control all the variables in the sperm donation process and cryobanks do not want to be sued if their claims are falsified. Certificates, accreditations and licenses of quality and safety from regulatory agencies serve as evidence to offset client perceptions of risk as well as provide some measure of protection to cryobanks in the face of litigation. Cryobank directors point out that certificates and accreditations do not always protect from litigation and, at times, *become* a liability because they give recipients the erroneous impression that insemination is a risk free process, which will result in the desired, customized child who is free of disease[62].

Despite its pervasiveness, risk is a social and political construct shaped to a large extent by those who have the power – governments, media, special interest groups, epidemiologists and other medical and health professionals – to determine who or what is risky. In the process, risk constructs foreground certain people, objects and events as dangerous while omitting or downplaying others (see for e.g. Taleb 2007). Social science scholars have shown how constructions of risk "Otherize," by singling out for exclusion those who are already socially and economically marginalized (Foucault 1984; Stallybrass and White 1986; Farmer 1992; Douglas 1984). Foucault (1978) claimed that governments used disciplinary institutions such as hospitals, schools and prisons, and specialized knowledges such as medicine, psychiatry, and criminology to regulate populations and fit them to bureaucratic goals. Following Foucault's studies on biopolitics, Peterson and Lupton (1996) argue that risk assessment has led to "government at a

[61] In a personal correspondence with Pilar Ossorio dated May 12, 2012, she remarked on this point as one, which perhaps served the sperm bank's interest. From the point of view of liability, it was in the sperm bank's favor if recipients perceived risk.

[62] As I show in a previous chapter, cryobank marketing contributes to these expectations of designer babies by giving recipients the false sense of security that insemination and its outcome can be controlled.

distance" in that governments now rely on health promoters to regulate and discipline human bodies and behaviors on their behalf. For example, medical and social service providers may be required to report to government authorities anyone they suspect to be a threat to public health and safety. Patient confidentiality can be breached if the issue becomes a concern for the state, which has the authority to intervene and take action[63].

Similar to the ranking and profiling of individuals on the basis of their alleged behavior, and social status, state-sponsored projects have also biologized human abilities. The history of twentieth century eugenics is replete with examples of state-led initiatives of forced sterilization, confinement and eradication of "evolutionary defectives" (the deaf, blind, "feeble-minded," epileptic, homosexual, physically disabled) as well as the socially disabled (alcoholics, criminals, mentally ill, impoverished, dark skin colored and so forth. The metaphor of the body politic was used by nationalists and eugenicists to claim that the nation's fitness depended on the fitness of its citizens. Unfit individuals would make an unfit population (Davis 1995; Pernick 1996). The common belief was that all character traits were biologically transmitted and inheritable. Aided by statistical tools and other forms of "political arithmetic," these politically and morally defined categories of "fit" and "unfit" determined who was worthy of receiving government services such as welfare, education, and healthcare (Porter 1986; Appadurai 1996; Asad 1994; Rose 2001). According to Davis (1995:36), the definition of the body politic as dependent upon the

[63] In the US, for example, up until 2010, the federal government mandated HIV/ AIDS screening and non US citizens found to have the disease had to receive a special waiver from the Department of Homeland Security (DHS) before they were permitted a visa to enter the country. Health workers were required to report all HIV-positive cases in immigrants to the State Health Department and immigrants were denied permanent residency and citizenship if they self-reported or were found to test positive for the disease. Source: http://www.legallanguage.com/legal-articles/hiv-immigrants/> (Last accessed January 29, 2012)

individual's health was combined with an "industrial mentality that saw workers as interchangeable and, therefore, sought to create a universal worker whose physical characteristics would be uniform, as would the result of their labors – a uniform product."

Contemporary cryobank practices of genetic screening and testing are not the same as early twentieth-century public health, hygiene and eugenic programs although the language of quality assurance and risk does bear traces of preceding cultural anxieties around personal and societal identity and economic productivity. What is different today than from twentieth century eugenics, at least in many western countries such as Western Europe and the US, is direct government intervention to curb the population of its "defectives." According to Rose (2001), this is because governments today bear less economic responsibility towards their citizens with disabilities. Instead, this responsibility is transferred to individuals through the language of self-help, autonomy and personal empowerment. Foucault (1988) refers to such self-disciplinary techniques as "care of the self" whereby the individual must actively seek knowledge to positively constitute a particular self. To what extent this "self" reflects the desired subject of the state and society and to what extent it is constituted by personal autonomy remains debatable.

Over the past thirty years, the development of genetic technologies, the impact of the Human Genome Project, and new discoveries in personalized medicine have significantly changed notions of the "self." The modern version of biological determinism manifests itself in the discourse of "geneticization," whereby the sum total of personal traits whether biological, social or environmental are grounded in genetics (Lippman 1991, 1993; Beckwith 1993). Scientists as well as the public now look to genetic markers to determine causality of physical

and social traits.[64] According to the ideology of "geneticization", social policy cannot lessen or improve upon these genetically determined traits and, therefore, such traits must be avoided if the child is to live a "quality" life where quality is understood in terms of social advantage and societal privilege.

Daniels and Golden (2004) and Rapp (1999), for example, show that early 20th century state-based eugenic programs have given way to consumer-driven market-based models of "individual choice" – what Troy Duster (1990: x) terms "back-door" eugenics. My research shows that eugenics remains the source of anxiety for cryobank representatives even as they engage in selecting and rejecting specific donors. Images and tropes of World War II state-led sterilization and eradication campaigns continue to dominate popular imaginings including those of cryobank employees. Directors and employees were quick to dismiss participating in eugenics by claiming that they were only catering to recipient demands about the kinds of donors they preferred. The language of "healthy babies," "individual choice," "quality assurance," and "risk management" were frequently used to justify the selection of particular donors over others.

While eugenics and infections have distinct historical and political trajectories, they merge within the context of cryobanking under the umbrella of risk. Risk as infection and risk as "faulty" genes entail an idea of unpredictability, perhaps more so in the case of genetic disease transmission, which is relatively less well understood than infectious diseases. In the following

[64] For an excellent history of the changes in notions of heredity in the nineteenth and twentieth centuries, refer to, "A Cultural History of Heredity III: 19th and Early 20th Centuries" (2005). Report from workshops organized by Staffan Müller-Wille and Hans-Jörg Rheinberger. Max Planck Institute for the History of Science. Jan 13-16. Source: http://www.mpiwg-berlin.mpg.de/Preprints/P294.PDF. (Last accessed: February 29, 2012)

sections, I show how cryobanks manage infectious and genetic disease risk by drawing on regulations.

Regulations and the Cryobank Industry

The US cryobanking industry is supervised by a combination of regulations and limited federal and state law. There are constitutional limits on government intervention in procreative liberty as it is protected by the US Constitution as well as some state constitutions.[65]. Currently, the FDA has oversight over cryobanks through the Center for Biologics Evaluation and Research (CBER). The FDA follows a risk-based model for regulating human cells, tissues, and cellular and tissue-based products (HCT/Ps) aimed strictly at preventing the transmission of infectious diseases while assuring the safe handling of tissue products. In order to operate, cryobanks must receive licensure from their resident state health department. Those shipping sperm to Maryland, New York and California must also be licensed by the health department of these three states. While all three states regulate sperm from anonymous, directed and homologous donors, the Maryland Department of Health also requires cryobanks to follow AATB standards and guidelines. The state of New York has the most stringent rules on donor screening, barring men who have engaged in homosexual sex since 1977 from serving as sperm donors. Other states do not require licensure from out-of-state cryobanks, but have regulations on donor screening and testing.

Besides federal and state regulations, the cryobanking industry is overseen by

[65] For an excellent discussion on procreative liberty, and government intervention in the politics of assisted reproduction in the US, refer to Charo, R. Alta (2002) "Children by Choice: Reproductive Technologies and the Boundaries of Personal Autonomy." Nature Cell Biology 4 (S1), S23_S29; Nature Medicine 8 (S1), S23_S29. http://www.nature.com/fertility/content/full/ncb-nm-fertilitys23.html (last accessed: Feb 25, 2012)

professional organizations such as the AATB and the ASRM, whose membership comprises physicians, nurse practitioners, biologists, medical technologists and other individuals related to the biotechnology and health-care industry. The AATB issues industry standards and provides optional accreditation to cryobanks, and ASRM issues guidelines for gamete and embryo donation. AATB membership and accreditation are expensive for many cryobanks. Many choose to opt out as they consider the inspection process a duplication of FDA's mandatory, but free inspection. Cryobanks that acquire AATB accreditation use it as a marketing tool displaying it on their web site as a symbol of quality assurance, while those that don't acquire accreditation say they could if they really wanted.

Cryobank laboratories are also accredited under the Clinical Laboratory Improvement Amendments (CLIA), by the state health department acting on behalf of the federal government. Based on the types and degrees of complexity of diagnostic testing as well as their potential risk to individuals, CLIA certifies cryobank laboratories for moderate or high complexity. Cryobank labs that do not perform any diagnostic services in-house, such as those that contract out to third party labs, are provided a certificate of waiver[66]. Since 1992, an accreditation program – the Reproductive Laboratory Accreditation Program – sponsored jointly by the College of American Pathologists and ASRM has also been available to assist ART (embryology and andrology) labs. However, the program does not separately accredit reproductive tissue cryobanks; it only accredits reproductive tissue labs, some of which may have affiliated cryobanks.

While federal and state regulations pertain to the transmission of infections, the subject of

[66] Source: U.S. Food and Drug Administration Clinical Laboratory Improvement Amendments (CLIA) http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/IVDRegulatoryAssistance/ucm124105.htm. (Last accessed: January 2, 2012).

genetic disease transmission remains outside regulatory purview because of government hesitation to intervene in matters of procreative liberty. Cryobank directors are of the view that the FDA mandate restricts itself to the prevention of communicable diseases because government agencies do not want comparison with earlier twentieth-century state-led eugenic projects. Currently, many cryobanks follow recommendations of the American College of Medical Genetics (ACMG), American Congress of Obstetrics and Gynecology (ACOG), and the American Society for Reproductive Medicine (ASRM) for genetic screening and testing[67]. As genetic testing is expensive and there is no guarantee that a particular sperm sample will sell even after it has been tested for all the recommended diseases, cryobanks base their testing decisions on the probability of occurrence of a particular genetic trait in the sperm donor's ethnic group and the severity of the genetic trait. According to the ASRM (2008) guidelines, donors and their first-degree relatives should not have any major Mendelian disorder (X-linked, autosomal dominant or autosomal recessive unless the recipient screens negative as a carrier). The donor should also be free of "major malformation of complex cause" such as heart defects and spina bifida. Cryobanks may consider donors who may have a family member with karotypic abnormality, as long as the abnormality is not present in the donor himself.

Most cryobanks test all donors for cystic fibrosis although the trait is frequently found, but not exclusive to, Northern European or Ashkenazi Jewish donors. Donors are also tested for hemoglobin disorders such as alpha and beta-thalassemia as well as sickle cell anemia

[67] Although the terms are frequently used interchangeably, the ASRM differentiates between genetic screening and testing in the following way: Gene screening refers to the use of specific tests to determine which members of a population are at increased risk for an inherited condition. Genetic testing, in contrast, is the use of specific tests to characterize the genetic status of an individual who is suspected to be at increased risk for an inherited disease. http://www.asrm.org/topics/detail.aspx?id=461(last accessed January 29, 2012).

(commonly found in African American populations), and certain genetic disease traits common to people of Northern European Jewish ancestry e.g. Familial Dysautonomia, Gaucher Disease Carrier Screening, Tay-Sachs, and Canavan Disease. Cryobanks may also perform chromosome analysis, hemoglobin evaluations and other specialized genetic tests upon recipient request.

As notions of infectious and genetic disease risk play a vital role in shaping donor profiles, a discussion of their history is in order. I begin with how risk as contagion first came to dominate the industry.

Risk, Morality and Regulation

Risk became a dominant part of the cryobanking industry's narrative during the HIV/AIDs epidemic of the 1980s. The epidemic also contributed to the industry's increased regulation by government authorities. According to some cryobank representatives, the public fear and panic generated by media and scientific uncertainty about the nature and transmission of HIV/AIDS resulted in a major setback to the industry, causing it to shut down completely for six months while the CDC and the Health Department devised ways to stop the further spread of the virus (Tober 2001).[68] Prior to the epidemic, cryobank physicians and nurses would inseminate clients with "fresh" donor semen, a practice some continued even in the midst of the AIDS scare because there was no commercial test to detect the virus in bodily tissue.

The years 1981-1984 saw several conflicting studies published about the cause of the "contagion." Nevertheless, the disease was associated with homosexuality even before the discovery of HIV-I and continues to haunt present day tissue banking regulations. Initially, the

[68] Tober (2001:78) adds in a footnote that while cryobanks were shut down during this time, private physician practice continued to thrive.

disease was recognized as distinctive and accompanied by a lethal form of Kaposi's Sarcoma – a cancer that was commonly attributed to elderly men of Mediterranean or Jewish descent and young adult African men, including homosexual men. The disease became connected with these men as they happened to be among the first to seek treatment for it. Scientific theories varied as new cases were reported targeting already vulnerable populations such as Africans, Haitians, homosexual men, needle stick drug users, and hemophiliacs (CDC 1982, 1983). Dr. Paul Farmer (1992) in his ethnographic study of HIV/AIDs in Haiti describes how Haitians were assigned what he calls a "geography of blame" and stigmatized for spreading the epidemic to North Americans when in actuality the converse appeared to be the case. Against the backdrop of an economy weakened by the policies of international aid organizations such as the World Bank and the IMF, American geopolitics coupled with international tourism, prostitution, same-sex and bisexual encounters and blood transfusions all contributed to the spread of the disease. Yet, Haitians and Africans became the targets of prejudicial attacks in North America as the cause of spreading the disease to Americans. The association of HIV/AIDs with gay and bisexual men also followed a similar path of blame even though published studies on the virus suggested that it was transmitted through blood transfusion and sexual contact between male to male *and* male to female partners[69].

In 1985, the U.S. Food and Drug Administration licensed the first commercial blood test, which detected antibodies produced in response to HIV-I in infected blood. Consequently, all

[69] According to a 2005 CDC report, there are no confirmed cases of female-to-female sexual transmission of HIV in the United States database. However, HIV transmission is possible through vaginal secretions, menstrual blood, and mucous membrane (for example, oral, vaginal) exposure to these secretions.
http://www.cdc.gov/hiv/topics/women/resources/factsheets/wsw.htm (last accessed January 29, 2012)

individuals testing positive for the antibodies were barred from donating blood (Pear 1985). To minimize and prevent HIV, sexually transmitted infections and other communicable diseases, the FDA, AATB and ASRM placed restraints on sperm banks from using fresh sperm. Sperm had to be tested, frozen and quarantined for a six-month period and retested before insemination.

FDA's Intervention in the Cryobanking Industry

Although it was HIV/ AIDS transmission through human tissue that instigated public demands for consistent government oversight of the tissue banking industry, human tissue and cellular products continued to be regulated intermittently on a case-by-case basis under various regulatory frameworks until the early 1990s. In 1993, prompted by two major mishaps in the handling of human tissue, the FDA intervened in the oversight of blood and tissue banking and took over from the State Health Department and the Centers for Disease Control and Prevention[70].On December 14, 1993, the FDA implemented its Interim Rule on Human Tissue Intended for Transplantation under Section 361(a) of the Public Health Service (PHS) Act of 1944, which authorized "regulations...necessary to prevent the introduction, transmission or spread of communicable diseases." With the exception of tissue banks dealing with vascularized organs, human milk, reproductive tissue and bone marrow as well as companies producing drugs, biological and medical devices, all tissue banks were required to screen and test human tissue

[70] The first case of tissue contamination involved an organ and tissue procurement company called LifeNet. In 1991, LifeNet processed and distributed the tissue of an AIDs infected donor to 30 US hospitals where they were transplanted in 52 patients. Three of the patients who received the donor's heart and kidneys died of AIDs, three others tested positive for HIV. Other cases involved a series of reports on improper testing and handling of human tissue imported from foreign countries. Source: Wang, Mary H (2002) "FDA Oversight of the Tissue Bank Industry." LEDA at Harvard Law School.
http://leda.law.harvard.edu/leda/data/306/tissue_donation_paper_final_with_abstract.html (last accessed: January 29, 2012).

meant for transplantation against infections such as Hepatitis and HIV. The regulations also outlined donor eligibility criteria, set rules for the screening of imported human cells, tissue and cellular and tissue-based products (HCT/Ps**)** and authorized the FDA to inspect facilities involved in the recovery, processing and distribution of HCT/Ps[71].

On July 29, 1997, the FDA issued its final rule (21 CFR 1270), which encompassed all facilities involved in the recovery, screening, testing, processing, storage or distribution of HCT/Ps including reproductive tissue banks. The rule required infectious disease testing to be performed on all HCT/Ps as well as mandated documentation and records of such screening and testing to be made available for inspection to the FDA. Further, all imported tissue had to be quarantined until the FDA authorized its release. At its discretion, the FDA could conduct surprise inspections on tissue banking facilities every two years during normal business hours. Facilities that were found to be in violation of the regulations could be served public notices with orders for recall or destruction. The FDA could also take possession of and destroy the infected tissue. Moreover, the State Health Department could order closure of any facility found to be in violation of regulations and revoke the license of any medical practitioners found repeatedly violating safety codes by not properly testing donors or tissue. As an example, in 1995, the state Department of Health of New York ordered the closure of Idant Laboratories sperm bank as well

[71] FDA (1993) "Human Tissue Intended for Transplantation -FDA Interim Rule: Opportunity for Public Comment." 58(238):65514-21. Dec 14. <http://www.ncbi.nlm.nih.gov/pubmed/10131341> (last accessed January 29, 2012).

as its other facilities and revoked the license of its physician after finding the sperm bank to violate several health-code violations[72].

The FDA regulates the tissue banking industry through the Center of Biologics Evaluation and Research (CBER) under 21 CFR Parts 1270 and 1271. Accordingly, tissue banks are required to keep written records of rules and procedures, prevent the spread of infections and screen and test donors[73]. There are currently three FDA final rules, which pertain to cryobanks[74]. The first is the final rule on registration titled, ''Human Cells, Tissues, and Cellular and Tissue-Based Products; Establishment Registration and Listing,'' in the Federal Register on January 19, 2001 (66 FR 5447) [originally, proposed rule "Establishment Registration and Listing for Manufacturers of Human Cellular and Tissue-Based Products (63 FR 26744, May 14, 1998)]. This rule requires tissue banks to register with the FDA and submit a list of their HCT/Ps[75]. The second final rule pertains to donor eligibility and was published in the Federal Register on May 25, 2004 as "Eligibility Determination for Donors of Human Cells, Tissues, and Cellular and Tissue-Based Products [originally, proposed rule "Suitability Determination for Donors of Human Cellular and Tissue-Based Products (64 FR 52696, September 30, 1999)]. The FDA also published a draft guidance document accompanying the final rule – Guidance for Industry Eligibility Determination for Donors of Human Cells, Tissues, and Cellular and Tissue-Based Products, which was published on May 25, 2004 and became effective a year later.

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[72]Source: http://www.nytimes.com/1995/07/19/nyregion/sperm-bank-is-ordered-closed-and-denied-a-license-hearing.html and http://articles.nydailynews.com/1995-03-29/news/17970212_1_sperm-bank-inseminations-idant-laboratories (last accessed: February 25, 2012).

[73] Source: http://www.fda.gov/BiologicsBloodVaccines/TissueTissueProducts/default.htm (last accessed: February 25, 2012).

[74] Source: http://www.gpo.gov/fdsys/pkg/FR-2004-05-25/pdf/04-11245.pdf.(last accessed: February 25, 2012).

[75] Source: http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfRL/rl.cfm (last accessed: February 25, 2012).

Additionally, the FDA published a separate guidance on screening donors for Creutzfeldt Jakob Disease (CJD) and Variant Creutzfeldt-Jakob Disease (vCJD) – Guidance for Industry: Preventive Measures to Reduce the Possible Risk of Transmission of Creutzfeldt-Jakob Disease (CJD) and Variant Creutzfeldt-Jakob Disease (vCJD) by Human Cells, Tissues, and Cellular and Tissue-Based Products (HCT/Ps) – which was first published in 1999 and revised in 2002 and later, incorporated into the donor eligibility final guidance. In 2006, the FDA added a donor deferral recommendation for donors who received blood transfusion or blood components in France since 1980. This amendment was finalized in 2008 and incorporated into the final guidance document on donor eligibility[76]. The donor eligibility final rule and final guidance are the focus of this chapter as they deal with sperm donor profiles.

The third final rule is titled "Current Good Tissue Practice for Human Cell, Tissue, and Cellular and Tissue-Based Product Establishments; Inspection and Enforcement" and pertains to the proper screening, testing and handling of human tissue to prevent contamination.[77] The CGTP proposed rule (66FR 1508) was first published on January 8, 2001. It was revised and published as a final rule on November 24, 2004 and became effective on May 25, 2005 – the same day as the donor eligibility rule[78]. As I mentioned above, the risk status of donors and their tissue also extends to the facilities that select and screen them. The FDA exercises coercive power over cryobanks through disciplinary action and public shaming. Cryobanks must not only

[76]Source:http://www.fda.gov/downloads/biologicsbloodvaccines/guidancecomplianceregulatoryinformation/guidances/ucm213415.pdf (last accessed: February 25, 2012).
[77]Source:http://www.fda.gov/BiologicsBloodVaccines/TissueTissueProducts/QuestionsaboutTissues/ucm102994.htm (Last accessed: February 25, 2012).
[78] Source: http://www.gpo.gov/fdsys/pkg/FR-2004-05-25/pdf/04-11245.pdf and http://www.fda.gov/BiologicsBloodVaccines/TissueTissueProducts/QuestionsaboutTissues/ucm102842.htm (Last accessed: February 25, 2012).

comply with FDA regulations and guidelines, they must do so in a language that the FDA recognizes and acknowledges. I discuss below how cryobank representatives respond to FDA control over requirements.

Self-Regulation: Operating in the FDA's Shadow

I was not present during any unannounced FDA inspections, but frequently heard stories about them and witnessed cryobanks prepare for them with apprehensive anticipation. Currently, FDA inspections are limited to examining standard operating procedures and determining whether cryobanks are following FDA regulations and guidelines. FDA officials do not visit cryobank labs or oversee how sperm is actually processed and stored, although cryobank directors project that such actions are possible in the future. A few cryobanks have a separate quality assurance and compliance department set up in-house with business and legal advisors trained to understand and interpret regulations and ensure that cryobank operations follow current good tissue practices and that standard operating procedures are up-to-date with federal regulations and professional guidelines. Cryobanks doing business with other companies e.g. other fertility clinics and tissue processing companies in other states also have to comply with quality assurance requirements of those companies. Quality assurance personnel shared that their role also entailed a projective component in that they had to anticipate the FDA's next possible move. For example, one quality assurance manager recounted that he was working to ensure that the cryobank was up to date on Current Good Manufacturing Practices (CGMP) even though they were not as yet part of the FDA's regulatory agenda.

Depending upon affordability, some cryobanks availed themselves of the services of consulting agencies such as Reglera for building quality and regulatory systems that were in line

with FDA requirements[79]. Reglera consultants claimed expertise in FDA regulations and international standards (e.g.21 CFR 820, 21 CFR 1271, 21 CFR 11, and ISO 13485:2003), and helped cryobanks draft, review and update their standard operating procedures and quality assurance strategies. This planning for an unforeseen and undetermined regulatory future, which may or may not come to pass is an example of cryobanks' attempts at controlling future probabilities (what they call risk management) and the FDA's success at strategically maintaining power and authority over the cryobanking industry. Even though FDA officials are only expected once in two years, the uncertainty of their visits is feared to the extent that the Agency has succeeded in wielding disciplinary power not only in the present, but also projecting it into the future.

For many cryobanks, the major concern was not lack of compliance as quality and safety were considered important aspects of their business. It was the risk of erroneously being labeled noncompliant by the FDA because of a miscommunication or mislabeling issue. According to cryobank personnel, the FDA was unrelenting about compliance language. Internal standards and policies had to reflect the Agency's regulations and guidelines in the Agency's own words. One cryobank director recounted a time when the FDA inspector issued the cryobank a warning:

> "They looked at our standard operating manuals (SOPS), determined that we should be following the regulations closer so they made some recommendations and wrote – not a deficiency – but a report saying, 'Correct these things.' And we corrected them, and they said, 'Fine, we thank you for the response,' and that's about it. They didn't find anything that credibly could affect the sample. We just didn't use the proper label, we didn't sign in the proper section. Administrative and quality control oversight. With the FDA, you *have* to use their language, which is incorporated

[79] Source: <http://www.reglera.com/> (Last accessed: January 27, 2012).

> within the regulation and that's the only way the FDA recognizes that you're in compliance, that you're meeting their requirements. You cannot paraphrase."

Another cryobank employee described his experience of FDA inspection in the following way:

> "Our first FDA inspection was like having a root canal. It was just…I mean, we came out fine. Like, ultimately we didn't do anything wrong, but it was….*unbelievable*! "[The] inspectors don't really…they don't understand our industry, they don't even know what they're looking for. They have a manual that they look at and so they just go to town on us. So we've had two inspections…And then the second one we had was with a different inspector. He came to us for, like, a day and a half. He was like, you guys are good, you guys are great, you set the benchmark so we don't have to worry about you."

According to the cryobank representatives, the FDA is concerned with exercising centralized control and disciplinary power by acknowledging only those cryobank practices which follow its rules and procedures. Yet, the FDA's demand for consistency and uniformity pertains only to *language.* The Agency does not exercise control over actual cryobanking *practice*. It is still possible for cryobanks to work around rules and procedures they have specified in writing. During my fieldwork, I found that cryobanks operations were far more fluid, varying with the different needs and requirements of recipients and donors even as employees strived to obey rules and procedures. Cryobank employees were frequently juggling top down regulatory requirements with new situations that arose in the course of their interaction with clients and donors. On one occasion during my presence, a 15-year old male bodied donor came in with his parents to store sperm. Although still biologically male, the donor was planning to undergo sex change surgery to become female. Under FDA rule, the donor was storing sperm to be used in a

female sexual partner and was, therefore, characterized as a client depositor or homologous donor[80]. However, the donor was a minor and did not have a sexual partner at the time. In fact, it was not known that the donor would necessarily have a female sexual partner or acquire a surrogate. The cryobank director had to consider not only the donor's needs, but also the safety of the possible future partners, the types of choices of partner the donor could make, and how sperm should be tested and screened in the light of FDA requirements. Finally, the director decided to adopt a cautious stance and test sperm as if for a directed donor (a recipient's known, non- sexual partner), because it required more testing than sperm from a sexual partner.

Cryobank employees were of the view that the spontaneity of everyday operations required creativity and the ability to respond quickly to unforeseen events. The cryobank employee quoted above felt that the FDA did not understand the specialized needs of the cryobanking industry or its everyday practicalities[81]. It was only concerned with cryobanks following specified rules. In my other interviews about the FDA, the language employees used described it characterized it as an unresponsive government institution ("the FDA is a deaf bureaucracy") that was slow to incorporate new scientific studies and revise its regulations ("The FDA is in the Dark Ages…"), that its regulations were politically motivated and overly concerned with rules

[80] The FDA's (2004) Final Rule on donor eligibility for human tissues and cells (Eligibility Determination for Donors of Human Cells, Tissues, and Cellular and Tissue-Based Products), and draft guidance (Guidance for Industry Eligibility Determination for Donors of Human Cells, Tissues, and Cellular and Tissue-Based Products) related to donor screening and eligibility state, "The rule also contains requirements related to record-keeping, quarantine, storage and labeling of the HCT/Ps, all important to the prevention of disease transmission. Certain exceptions from the requirements for donor eligibility testing and screening exist. These tissues and cells include: autologous HCT/Ps (Cells or tissue removed from and transplanted back into the same person) and reproductive cells or tissues from a sexually intimate partner." Source: <http://www.fda.gov/ForConsumers/ByAudience/ForPatientAdvocates/HIVandAIDSActivities/ucm125025.htm>

[81] FDA rules and recommendations address the tissue industry as a whole. Reproductive tissue banking is subsumed under the broader category of biobanking and is treated on par with the other tissue banks.

and procedures in some aspects of cryobanking (infectious diseases) while ignoring others that were important to cryobanks (e.g. genetic testing). At times, FDA's risk-oriented approach was so overly cautious that it failed to consider scientific evidence (e.g. ban on European sperm donors for fear of CJD transmission).

Perceptions about the FDA ranged from the Agency as appearing outdated and slow to respond to innovation to being unpredictable in its next move. This perception of the FDA's unpredictability came from cryobanks projecting FDA's future actions based on the present regulatory environment on sperm donation in other countries such as Canada, the UK and other parts of Western Europe. While the FDA as an institution may have earned the reputation of not tolerating variability, a closer reading of the above employee's statement suggests that relationships with FDA officials did vary. Depending upon the individual's personality, FDA officials could be more or less responsive to a particular cryobank's issues.

In addition to hiring regulation specialists, some cryobanks also prepared their facility for FDA inspection by conducting internal audits once or twice a year. Sometimes, audits were scheduled in advance with exact times and dates. Other times, similar to FDA fashion, they took place unannounced. Auditors could inform the cryobank that they would be conducting audit that week, but not specify when. While the actual inspection by the FDA varied between a few days to a few weeks, the fear and apprehension of being labeled noncompliant and the additional inspections and "red-tape" involved in clearing one's name and possibly one's social repute drove cryobank directors to such great lengths to comply that it doubled the work of the employees and at times, even acted *against* the efficiency and effectiveness of quality assurance.

For example, during my fieldwork at a cryobank, a client called in to complain that she did not receive her cryopreserved sperm shipment order on time. The cryobank director ordered an inquiry into the case and discovered that the client had not updated her address and phone number with the cryobank which resulted in the shipment going to the wrong address. The client, however, refused to pay for the tank, claiming that it was the sperm bank's responsibility to update her information and that their lack of oversight had made her miss her ovulation period. Upon being questioned, cryobank employees dealing with the case alleged that the client had not informed them about a change in address or phone number and, therefore, they could not call her back to confirm the shipment. In order to avoid further conflict with the client the cryobank director decided to absorb the financial loss. However, the incident resulted in significant penalties for the employees. Worried that FDA inspectors would single out the incident as a lapse in quality control and hold the director responsible, the cryobank director instructed the staff to email and call every single client with an outstanding order to confirm whether or not they received the order. Cryobank staff expressed resistance to this measure. Not only did it double their work as they now had to email and call all clients with whom they had already finalized orders, but their overall performance would also slow down since they placed and confirmed several orders a day. Ironically, the director's cautious stance to avoid future quality control oversight actually worked against the efficiency and effectiveness that was part of quality assurance protocol. It appears that the fear of the FDA's punitive power was so great that the cryobank director was inflicting similar self-punitive and self-disciplinary measures to avoid being disciplined, controlled and punished by an external third party. There was no guarantee about how the FDA would *actually* respond. The angst of how it *might* respond wielded greater

influence over cryobank practice than how the FDA actually did respond. A Foucauldian perspective of power and politics reveals the contestations and contradictions within and between individuals. For Foucault, individuals are both victims and agents within systems of domination, and despite conscious efforts, can reinforce the same hierarchical relations they condemn, through discourse.

While power is operating in a decentralized way in the case of this cryobank, it is also magnified in that the director's precautionary measures are even more coercive than any FDA requirements. Nevertheless, just because the director gave an order did not mean that it was implemented Employees, too, had the choice to respond overtly or covertly through resistance, acceptance, negotiations and modifications. What cryobank representatives really feared was a loss of control and autonomy over their operations. As mentioned by an employee in the following statement:

> "I'm sort of in favor of all the regulatory stuff. I think that because we're setting such high standards for ourselves, making the rest of the industry come up is only a good thing. And a lot of them aren't going to be able to because of the costs involved. I think it's necessary to have the FDA on top of us because we're doing such a great job, but ultimately the general public doesn't know anything, and if the FDA says it's clear, then they believe it's clear. So I think it's important to have federal oversight. We don't want them telling us how to do our jobs but at the same time, they give us this legitimacy."

FDA oversight, despite its unpleasantness, had its advantages. While cryobanks did not appreciate the idea of being micromanaged, they hoped that FDA approval would increase public perceptions of safety. Passing FDA inspection was endorsement that the cryobank was doing well. It added legitimacy to the business and served as a public relations/ marketing tool. The

approval of a government agency was expected to provide reassurance to prospective clients (who might otherwise not be familiar with the workings of the cryobanking industry) that the cryobank adhered to safety and quality standards. FDA presence also made the industry more accountable to peers and public. Inspections compelled cryobanks to maintain standards of safety and quality, and discouraged unscrupulous individuals and agencies to engage in practices that could be harmful to public health e.g. distributing and selling gametes without appropriate testing, incomplete documentation and so forth.

From a legal perspective, FDA approval served as protection against the risk of liability. Although cryobanks self-monitored their practice, the industry's attempts to self-govern were considered insufficient by some cryobank directors because it lacked the legal and political clout of a government agency to protect itself against legal threats. Although following government regulations did not guarantee insulation against litigation, they certainly added the weight of evidence to the cryobank's position. Moreover, government regulations provided the legitimizing language to justify the exclusion of unwanted donors by shifting the burden of responsibility away from cryobanks. It was easier to counter discrimination allegations with the justification that cryobanks were only following rules and procedures. The drawback of government intervention in reproductive matters was its power to politically and morally define through its seemingly objective language of risk and safety, the desired conditions for procreation, in this case: heteronormativity, and heterosexuality.

The FDA's Donor Eligibility Final Rule and Final Guidance provides an important case in point that exemplifies the FDA's thinking about desired forms of behavior and sexuality. In the following sections, I examine the Donor Eligibility Final Rule and Guidance and show how

cryobank representatives interpret and respond to them. I find that cryobank representatives' support or critique of FDA regulations and guidelines reveals their own political and moral positions on appropriate sexuality and morality. Ultimately, these views contribute to the shaping of donor profiles and challenge certain social hierarchies while reinforcing others.

Donor Eligibility: The Excluded and the Privileged

The FDA's final rule on donor eligibility, codified in 21 CFR 1271 (subpart C), applies to donors of HCT/Ps recovered on or after May 25, 2005. Accordingly, donors of human, cells and tissue and cellular-based products must be screened and tested for risk factors and clinical evidence of infectious diseases and disease agents (e.g. viruses, bacteria, fungi and so forth) [21 CFR 1271.1(b)]. The final rule describes high risk diseases and disease agents as those that could be fatal or life-threatening or which could result in permanent impairment of a body function or body structure or cause a condition needing medical or surgical intervention to repair [21 CFR 1271.3(r)(2)] Such diseases or disease agents must have appropriate screening measures or donor testing that has been licensed and approved by the FDA and is available on the market. The rule instructs biobanks to screen and test donors (including donors of viable, leukocyte-rich HCT/Ps) for specific communicable diseases such as HIV 1&2, HTLV 1&2, Hepatitis B & C, human transmissible spongiform encephalopathy, Treponema pallidum (the agent of syphilis), Chlamydia, Neisseria gonorrheae, and West Nile Virus. The final rule also provides instructions about labeling, quarantine, shipment and record keeping of donor tissue and cells.

While the FDA's final rule provides mandatory directives to biobanks and reproductive facilities, its final guidance document on donor eligibility determination contains nonbinding recommendations reflecting the FDA's current thinking about risk, screening and testing. Many

of the screening and testing requirements found in the guidance document are reinforced in the final rule *with the exception* of a section identifying specific risk factors when screening donors. The FDA does not specify the reasons why it omits infectious disease risk factors from the final rule and places them in the guidance document, but cryobank employees suspect it is because the FDA wants to avoid being entangled in a political imbroglio about the risk groups it excludes. Indeed, although the FDA frames donor screening in terms of identifying and isolating risk factors, the exclusion really pertains to individuals. The FDA draws attention to individuals with risky behaviors and lifestyles (homosexuals, drug addicts and needle users, prostitutes, individuals with body piercings), risky living environments (incarcerated individuals, individuals sharing living spaces with the ill and diseased, residents of African and European countries labeled as high risk for HIV and Mad Cow Disease, respectively, and military personnel and family members stationed in Northern Europe), persons clinically diagnosed with a disease or manifesting "suspicious" symptoms and persons with inherited conditions such as hemophilia and HIV (with some exceptions[82]).

A quick glance at the list of high risk donors shows that many already belong to marginalized populations, which are now grouped together regardless of their history under the umbrella of risk. Such classifications overemphasize risk at the cost of larger structural issues of politics, economics, power and social policy that contribute to compromised health in the first place. On the other hand, the FDA's stance on sexually intimate partners (SIP) does not require them to be screened or tested [1271.90(a)(2)]. Sexually intimate partners, who later decide to

[82] The exceptions extend to donors born to mothers with or at risk for HIV infection, who are over 18 months of age, have not been breast-fed within the preceding 12 months, have had HIV antibody tests, physical examination, and their medical records do not indicate evidence of HIV infection.

donate embryos, are also absolved of screening and testing. Additionally, the FDA allows cryopreserved cells and tissue (except embryos) for directed donation to be retrieved without initial screening and testing of donors, "provided that appropriate measures are taken to screen and test the donor(s) before transfer to the recipient [1271.90(a)(3)][83]." Testing and screening are left to the responsibility of biobanks. The FDA's rationale for not requiring the testing of SIP (with the exception of women whose partners are HIV/AIDS positive) is because of hesitancy to unduly interfere in matters of procreative liberty. Moreover, as the FDA focuses on preventative measures for infectious diseases, the testing of SIP may appear to be futile from the Agency's perspective as sexual partners are already repeatedly exposed to each other's bodily fluids. Moreover, extensive testing was also costly and time consuming for couples who had already been experiencing problems conceiving for some time.

What is intriguing about the FDA's stance is that in case of heterosexual couples, the same criterion of risk does not apply as it does to non-sexual relationships. One would think that heterosexual couples would be at a higher risk of contracting sexually transmitted and other communicable infections because of repeated exposure and a very definite threat to the child. But it appears that knowing the donor lessens perceptions of risk to the extent that the FDA, cryobanks and even recipients are willing to take greater risks with the health of the female partner and future offspring. For example, women whose partners test positive for Hepatitis B and C can still be inseminated with their sperm provided that they are given "documented counsel." As one cryobank director explained:

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[83]Source: <http://www.fda.gov/BiologicsBloodVaccines/TissueTissueProducts/QuestionsaboutTissues/ucm102842.htm> (Last accessed: February 15, 2012).

> "If it's Hep B or C, a client depositor [homologous donor] can still save his sperm to be used in his partner. She has to be informed. We have to document that we've informed her about it and what those medical risks would be to her and her baby. And once we've documented that, then we can release that sperm for her to use…Hep B or C is not necessarily fatal. And HIV is a much more serious disease that was almost always fatal 15 years ago. It's not necessarily always fatal right now and the regulations are a decade or so behind science. So, if a donor or client depositor had active syphilis or active gonorrhea or active Chlamydia, *we* wouldn't release the sperm. Or HIV either. If they've had Hep B, [state] law and the FDA, I believe, say that the recipient whether it's their partner or not has to be vaccinated first. And Hep C, which doesn't have as high a maternal transmission and often people carry it without getting real sick. Or with Hep B, sometimes, you can be a carrier and never really be sick, but Hep C, there is no vaccine for it, so you can let them use it with documented risk counsel."

The cryobank director's statement reveals her own categorizations of risk for Hepatitis B, C and HIV vis-à-vis the FDA's. Using preventative measures and probability of fatality as two criteria, the cryobank director draws on various scientific and legal sources such as the state health department's health and safe codes and (indirectly) epidemiological research to conclude that neither HIV nor Hepatitis B and C are truly high risk (contrary to FDA claims) because they need not result in mortality. Hepatitis C, perhaps, is the least manageable of the three diseases because it lacks a vaccine. My own research into epidemiological studies of Hepatitis B and C transmission show extremely high vertical transmission rates of Hepatitis B, while studies of the vertical transmission of Hepatitis C show conflicting results[84]. From a risk standpoint, Hepatitis C would be a high risk disease, but it is not treated in the same manner as CJD, for example,

[84] Studies show that while vertical transmission of Hepatitis B has an extremely high transmission rate (in some studies, up to 100 per cent mother-to-child transmission), studies on the vertical transmission of Hepatitis C show conflicting results. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC179809/ and http://www.sciencedaily.com/releases/2011/04/110427131826.htm. (Last accessed: February 15, 2012).

even though studies on the prion thus far do not show clinical evidence in sperm, while there is published evidence of Hepatitis C transmission. Cryobanks manage the risk of liability through securing informed consent from the recipient documenting that they have informed them of the risks involved in the insemination.

Yet, despite clinical evidence of mother-to-child transmission of Hepatitis C in some cases, the disease is not classified as high risk, unlike CJD which is considered high risk even though there is no evidence of the prion in sperm. Similarly, the risk of HIV transmission is also perceived as more manageable because of anti-retrovirals and sperm processing technologies. Moreover, cryobanks have the discretion to test and refuse insemination to recipients if their partners test positive for infection, even if the FDA waives the obligation of testing sexual partners. This act of taking precautionary measures with recipients shows that while cryobanks consider the FDA's presence as necessary for mitigating risk, they do not rely on it to protect them completely against risk, especially the risk of liability. One cryobank director describes the FDA's relationship with cryobanks as that of a "rubberstamp" suggesting that the FDA gives cryobanks public legitimacy, but that cryobanks must take it upon themselves to protect themselves from harm.

The FDA's stance of lessening and in some cases exempting the screening and testing of sexual partners shows that risk is perceived differently within the realm of a heterosexual, and monogamous relationship and that sexually intimate partners presumably make rationally informed choices about risk if they are provided "documented counsel." Moreover, as long as recipients are informed about the dangers to their health and the health of the child, the cryobank is absolved of the responsibility for the outcome of insemination. However, cryobank staff

reported that sexually intimate partners were willing to take greater risks with their health and safety in order to conceive than recipients with anonymous donors. For example, some recipients requested to be inseminated by the sperm of their HIV positive partner despite knowing his health status, much to the bemusement of cryobank employees. “It doesn’t make sense if you think about it medically and the potential risks it’ll have on the child, but….emotional decisions, I guess,” mused one employee.

Employees shared that women in sexual relationships with the donor were driven by feelings of urgency and loss in their insemination decisions. Frequently, the male partner faced a situation which affected his life and future ability to reproduce e.g. major surgery (e.g. vasectomy, chemotherapy) or travel (e.g. for military purposes in war zones). According to one employee:

> “It could be that a husband finds out he has to undergo chemo. Two years later, he might be sterile, but you might want to use that sperm still. Some people care less when they know the guy. Some directed donors who come in have very low [sperm] count. And usually he would not be part of our donors because of low count. But because the woman wants his sperm specifically, we don’t look at that [sperm count] as criteria.”

According to the employee, risk perceptions were influenced by the relationship between donors and recipients. Knowing the donor’s identity and having some kind of established relationship with him lowered recipient perceptions of risk. This did not mean that actual risk lessened, only that it was outweighed by other circumstances such as the donor’s health and the possibility of his death. Such extreme instances justified cryobanks to modify their standards and accept donors with lower sperm counts – a practice they would not accept in anonymous donors.

Cryobank directors and employees acknowledged that sexual partners could be involved in more than one simultaneous relationship, they could divorce and may end up with a different partner than the one for which they originally stored sperm. Moreover, the only way to truly reduce infectious disease risk would be to test donors and recipients as well as their current and previous partners – an unachievable and costly feat. It seems then, that there are two standards of risk evaluation that are being followed, and while actual risk does not change, risk perceptions change according to the relationship of the donor and recipient. The determination of what is high risk is then a political act which involves more than notions of public health safety. It involves concessions for those who follow the approved positions of morality and sexuality held by bureaucratic officials.

Regulating Procreation? The FDA as "Sex Police."

The FDA's role in the testing of sexual partners and directed donors was controversial and opinions varied among cryobank directors and staff as to the kinds of testing standards the Agency should adopt. Some argued that the FDA should not make concessions for sexual partners and have the same testing standards for all donors. Others argued that the FDA should not test sexual partners *or* directed donors because doing so was paternalistic and interfered with procreative liberty. "The FDA is a public health agency, not the sex police," claimed one cryobank director. "If a man and a woman go into the privacy of their own home and try to conceive a child, is it the FDA's business whether they actually have intercourse or he ejaculates into a cup and then she takes it and goes into another room and inseminates with it? She's already exposed to his bodily fluids. From a public health standpoint vis-à-vis the regulations, they are already sexually intimate partners and you don't have to do any testing."

The director's statement reveals the crux of the conflict in the testing of donors and sexual partners: the delineation of boundaries between public and private. The question of contention is whether a public agency should govern private acts such as sex and reproduction? Using a rights-based stance of procreative liberty and choice, the director makes the argument that a public health agency should not interfere in the personal decisions of donors and recipients if they engage in the act of procreation through sexual or nonsexual means in the domain of the private, symbolized here as the home. What the cryobank director does not acknowledge is that in accessing the services of the cryobank, recipients are no longer in the domain of their home. Reproductive technologies make public the once private process of reproduction. Cryobanks are a complex mix of public and private spaces as they cross the boundaries of federal and state law, commercial business, scientific and clinical practice, and social norms in their management of sexuality and reproduction. The cryobank director conflates sex and insemination in the domain of the home, but the two need to be clearly distinguished in the domain of the cryobank to maintain social roles (e.g. avoid parallels with adultery in heterosexual couples) and even sex work as donors are being paid for sexual labor.

The cryobank director, nevertheless, believes that federal law should not apply to individuals who have an established relationship of mutual trust and consent. "I talk to people [donors] and I tell them, look you have to be honest about all of this, but you're [recipients] also making a choice. You're claiming you know this man well enough that you trust him." The cryobank director suggests an attitudinal change will counter the physical risk of disease transmission – that trust and honesty will reduce incidents of disease transmission. His statement implies that donors are fully informed about their health status, that they communicate this status

openly and honestly to recipients, that recipients make informed choices, and their choices should not be judged paternalistically by a third party such as the FDA. In a following statement of the same interview, the cryobank director contradicts his previous statement.

> "But I mean obviously I take a sexual history from these guys, but the FDA…if you're sexually intimate partners, which is to say that you've already been doing vaginal inseminations with his guy, by the time you come to me, the FDA does not require that I do any testing on this man. That being said, I still do. I STILL DO. Not only because it is required by the state of [state name], but even if it wasn't required by the state of [state name], because I am a *responsible* person, even though the FDA regulation on this is stupid and shirks responsibility. And why does it shirk responsibility? Because it was written by idiots!

In his previous statement, the director sets up the space of the home as private, unregulated, and nonclinical space as opposed to the relatively more public, regulated and clinical space of the cryobank. Yet, his references to sex as "vaginal inseminations" medicalizes the home. He contradicts his earlier statement of trusting donors on their word[85]. From his above statement, it appears that *not* testing donors would be a morally irresponsible act. The director criticizes the FDA for imposing unnecessary testing on directed donors who have a previously established nonsexual relationship of trust, yet he also faults the FDA for *not* testing sexual partners whose sexual relationship is also based on trust. The director now claims that testing is the responsible thing to do. Rather than simply an issue of donor testing, the director's language for the FDA hints at a more unfavorable personal attitude towards being controlled by an external agency with higher authority. He exercises the same disciplinary power over his donors even in the

[85] I would like to thank Claire Wendland for pointing out that the cryobank director is clinicalizing the notion of the home by his employment of the language of vaginal inseminations.

absence of the FDA's directives. In quite a paradoxical way, the director is resistant to the FDA's disciplinary power over cryobanks even as he extends the same disciplinary power on the bodies of his donors.

Homosexuality: Regulating Risky Behavior and Persons

The exclusion of men who have sex with men is another example of the power struggles inherent in the determining of appropriate sexuality and sexual behavior by regulatory agencies. Homosexual bodies and behaviors have been sites of conflict for years in psychiatric and religious discourses of pervasion and normality (Seidman 1994). The branding of HIV/AIDS as a "gay disease" has further stigmatized homosexuals as a group engaged in reckless acts. Sodomy, for example, is still viewed in religious circles as an immoral and non-procreative act. The demand for assisted reproductive technologies for procreation and family building by many gay and lesbian individuals and couples challenges previously held assumptions about homosexuality as necessarily non-procreative. Although gay and lesbian individuals remain marginalized in many ways in the domain of marriage, procreation and social justice issues, cryobanking has found a profitable market in single women and lesbian couples in the past few decades. While cryobanks cater to lesbian recipients, the selection of gay and bisexual donors remains a controversy. This controversy is especially reflected in the FDA's final guidance document on donor eligibility which lists men who have sex with men as a high risk category. In a

controversial move in May 2010, the FDA upheld its policy on the ban on blood and blood products from men who had sex with men citing them as a high risk group for HIV/AIDs[86].

Notably, the classification of MSM and other high risk groups is missing from the FDA's final rule on donor eligibility. The rule reinforces many of the recommendations of the guidance document, but focuses on the screening of infectious diseases rather than persons. It is not possible to gauge why the FDA decided to exclude risk groups from its final rule. FDA officials did not respond to my inquiries on this question, however, some cryobank directors speculated that the strategy was aimed to avoid political and social backlash. Responding to public allegations about discrimination on its blood donor policy, the FDA announced that its decisions were not based on "any judgment concerning the donor's sexual orientation." Instead, they were based on surveillance data from the CDC, which showed that men who had sex with men were at a risk 15 times greater than the general population for developing HIV infection since 1977 (the year that HIV cases were first reported). According to the CDC study, the incidence of HIV infection in MSM was 2000 fold higher than in current repeat blood donors (i.e., those who had been negatively screened and tested) in the USA. According to the FDA, MSM were also had a risk for contracting and transmitting other STDS. The FDA did not make a distinction between homosexual men who were monogamous or had a number of partners or practiced safe sex. All MSM were categorized as a high risk group along with intravenous drug users, prostitutes, receivers of organ and tissue transplants, travelers and residents abroad and so forth.

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[86] Sources: FDA (2009) "Blood Donations from Men Who Have Sex with Other Men Questions and Answers." http://www.fda.gov/biologicsbloodvaccines/bloodbloodproducts/questionsaboutblood/ucm108186.htm. (Last accessed February 15, 2012) and NPR (2010) "FDA Ban On Blood Donated By Gay Men Upheld," http://www.npr.org/templates/story/story.php?storyId=128193248. (Last accessed: February 15, 2012).

On the FDA web site, the Agency did not directly respond to the question of why MSM were singled out when reliable tests were available to screen and test all donors. Instead, it directed readers to HIV-related statistics and trends on CDC's HIV/AIDS Statistics and Surveillance web page. FDA officials claimed that testing was not 100% reliable and could not always detect infection. Moreover, there were always chances of false positives and lab errors and donor behavioral histories had to supplement lab tests. In other words, MSM could not escape their high risk status in spite of the availability of testing and technologies. The FDA classifies its ban on men who have sex with men as a behavioral issue. Its omission of the term "gay" from its vocabulary has political underpinnings, which become obvious in its definitions of MSM. The Agency claims it does not discriminate against sexual identity, but risky behavior. Yet, how does one define gay identity and sexuality if not in terms of men who have sex with men? While one could arguably "be" a homosexual without engaging in homosexual activity (be celibate), yet sexual orientation, identity, and behavior all overlap in signifying homosexual individuals. In separating homosexual identity from behavior, the FDA's claim of not being against homosexual individuals per se, but rather their risky activities appears to reflect the moral equivalent of the Biblical counsel of "love the sinner, hate the sin". One cryobank employee differentiated between gay identity and homosexual behavior in the following way:

> "The differentiation we make in America is that gay is a lifestyle. Homosexual is a determination based upon certain psychological, psychosocial ideas. So gay is a lifestyle that implies that…it's kind of a stereotype. Gay is …you might think that people go out to bars and dance a lot and are very promiscuous [laughs] and do lots of drugs and drink a lot. Being homosexual does not mean that you're sexually active. You may be homosexual and celibate. But being gay in the least normative definition of that means that you're

> sexually active. I'm not suggesting promiscuity, but just saying you are sexually active and you go out to clubs versus being a homosexual which is a more clinical definition."

The employee is aware that the gay/ homosexual dichotomy is a socially constructed dichotomy. Unlike some other employees who view homosexuality as genetically based, however, the employee here sees both "gay lifestyle" and homosexuality as socially and psychologically framed. Whereas men who have sex with men are considered engaging in high risk behavior, homosexual, but celibate men who have not engaged in sexual contact are permissible as sperm donors. Men who have sex with other men represent a threat to mainstream heteronormative ideas of acceptable sexuality and sexual behavior. Douglas (1980) and Said (1978), among other scholars of colonialism and history have observed how dominant groups in a society, which perceive themselves as being threatened will define the "Self" within particular boundaries, pushing the "Other" outside those boundaries. The movements of the "Other" will then need to be regulated and controlled. Petersen and Lupton (1996) observe how fears about social order, death and disease are then projected onto this "Other" so that the healthier group can experience itself as free of the causes of disease. The "Other" from a cryobanking regulatory perspective is the sexually deviant, the criminalized, and the poor. But how does one explain when the "Other" also participates in the "Othering"? Some gay and lesbian cryobankers feel compelled to reinforce dominant political and social hierarchies in order to survive in the industry. The ban on men who had sex with men presented a moral dilemma for gay and lesbian friendly cryobanks, which were primarily established to serve these discriminated groups. Owners of these cryobanks, some of whom also identified as gay and lesbian, claimed that the FDA guidelines

provided a troubling irony to their services. One cryobank employee summed up the sentiments of many gay and lesbian cryobank employers and staff:

> If they have a male partner in the last ten years [and we tell them] 'We can't take you because you're gay,' it's a very sad day in my life… I would *love* to have gay men in here. And I always do the disclaimer: I'm gay, the CEO is gay, the donor coordinator is gay, we're ALL gay [laughs as she talks]. We're not discriminating against you, it's not our choice. It's not what we can do…I think partially people get really bent out of shape because you're turning them for the millionth thing in their life that they've been turned down for.

The cryobank employee identifies with the gay and lesbian group to show sympathy and understanding of their discrimination, while stating that cryobanks are forced to follow the discriminatory directives of higher regulatory authorities. Yet, cryobanks do have the option to challenge authority. The FDA recommends the exclusion of MSM in a guidance document which does not have the force of law. Yet, gay and lesbian friendly cryobanks fear being "Othered" by mainstream cryobanks if they are found to favor donors because they identify with them.

One cryobank director publicly challenged the FDA's position on MSM and claimed he not only became the victim of its harassment, but was also marginalized and socially excluded from the rest of the cryobanking community for actively recruiting gay and bisexual donors. Leland Traiman, director of Rainbow Flag Health Services chose to publicly call out the FDA on what he saw as a "grievously bigoted and discriminatory position" against gays and lesbians (2006:613). In his (2006) article "Guidelines But No Guidance: GaySpermBank.com vs. FDA," published in the Journal of Gender, Race and Justice, the registered nurse practitioner who also

identifies as gay, accused the FDA of taking a political rather than scientific stance by excluding MSM. Traiman drew on the authority of the Supreme Court's 2003 ruling of Lawrence V. Texas(539 U.S. 558) where Justice Sandra Day O' Conner holds Texas's sodomy law discriminatory and incriminating towards gay persons as a class. According to Traiman, available infectious disease testing was reliable and dependable. He stated (2006:617), "If a donor is negative six months after donating then we are sure he was not infected at the time he donated. This two-phased testing scenario is a universal precaution used on all donors. Common sense suggests this works well regardless of one's sexual orientation. Common sense is correct."

Traiman's position was too self-assured for some of the other cryobank employees who questioned his use of "common sense." According to them, one could not justifiably claim that testing technologies were 100 per cent risk free and that Traiman's argument was also political because he identified so strongly with the excluded group that he was willing to engage in high risk activities, which could jeopardize the health of his clients just so he could prove his point. In their defense, cryobank directors who adopted the FDA's guideline on MSM spoke of it as if it was binding. One cryobank director compared sperm from MSM donors to "tainted blood," clarifying that it was not the cryobank's policy to discriminate against gay men.

> "I will take the low road and be on the safe side because I was given by the general public and the FDA the task to apply their regulation. Why would I jeopardize a recipient knowingly by starting from a position that I was told to stay away from? It's like selling tainted blood to clients and telling them to buy it at their own risk[87]."

[87] The term "tainted blood" draws on the analogy of blood banks transmitting HIV to recipients of blood and plasma within and outside the US before screening and testing for HIV became available.

The cryobank director wants to establish his position as nondiscriminatory, but his perception of bodily fluids from gay men are that they are by default contaminating and "tainted," and inseminating clients with the sperm of such men would be a harmful and criminal act. The director sees his role as trustee on his clients' behalf, claiming he must protect his clients from harm by protecting them from the dangerous "Other." He adopts the FDA's position uncritically as mandatory, in order to fit his argument and his personal stance.

An official of a professional agency believed Traiman had a vendetta with the FDA because of his personal issues with authority:

> "That's Leland's position that we discriminate. If we had no regulation, then he could do what he wants, but because there are regulations, we have to edge on this side of them. I think regulations have no physical barriers. We can change the boundaries as we see as a whole society, but we can't decide each time, 'It doesn't suit me, I'm going to change them.' Don't get insulted when the rest don't follow you. That's what Leland is all about."

As the official is speaking from a position of privilege and authority on the basis of his social and professional status and because he represents his institution's viewpoint, he does not acknowledge its discrimination. Instead, he singles Traiman out as an individual with a personal grudge. Yet, by making Traiman's resistance a personal issue, the official obscures the idea that Traiman is not just representing himself but a group experiencing discrimination. Traiman, however, only appears to represent gay and bisexual men. In his article (2006:618), he dismisses the FDA's gay/ MSM distinction as "silly," "absurd" and criminalizing, but then, ironically, shows similar intolerance for other marginalized groups. He observes, "Gay men are grouped in punitive fashion with criminals like IV drug abusers and prostitutes." Rather than calling

attention to the structural violence at play in the lives of these groups and the social, political, and economic inequalities, which may have contributed to their marginalization, Traiman dismisses drug addicts and sex workers as criminals, implying that it is alright for them to be excluded, but not gay men. In this way Traiman, too, while challenging dominant certain social hierarchies, reifies others.

The conflict over the inclusion of MSM reveals the ways in which regulations are drawn upon to establish and contest positions of power and authority by various interest groups to justify their position. Narratives of risk and safety provide the language for justifying exclusion of certain groups by those who feel threatened by them. In the case of MSM, cryobanks who participate in rejecting homosexual and bisexual donors use the FDA's guideline as though it had the force of law. Those that chose not to follow the guideline, focused on its actual legal position as lacking statutory authority. While cryobanks and regulatory agencies denied being discriminatory by adding disclaimers about their process of donor selection, their statements nevertheless proved contradictory to their claims. These contradictions and tensions show the force of hegemonic power, which accompanies risk discourse and portrays certain bodies as inherently dangerous and contaminating. The force of hegemonic power is so pervasive that it even affects the decisions of directors and employees who feel they must discriminate against the very people that they claim to serve.

Genetic Risk and Exclusion

Genetic screening and testing present a dilemma for cryobanks and regulatory agencies in terms of exercising direct coercive power. While genetic risk is an important concern for

cryobanks and recipients, it is difficult for the government to justify intervention while avoiding direct comparisons with early twentieth century state-led eugenics. The consequence of the absence of government oversight has resulted in heightened perceptions of genetic risk for cryobanks[88]. First, without the imposition of uniform regulations, cryobanks must individually determine the relevance, safety and reliability of available genetic tests as well as how much testing is sufficient while still cost-efficient for both cryobanks and recipients. Second, the absence of regulations makes it difficult for cryobanks to save face in social relationships with donors as they cannot draw on an external authority to justify their exclusion of men on the basis of their "disability" [89]. Government regulations provide the legitimizing language to justify the exclusion of unwanted donors by shifting the burden of responsibility away from cryobanks. It is easier to counter discrimination allegations by saying that cryobanks are only following rules and procedures. Third, compliance with legally defined rules and procedures provides some legal protection to cryobanks even though it does not alleviate the threat of litigation. Compared to genetic screening, cryobank employees now found infectious disease screening and testing less risky. In the words of one cryobank director:

> "For infectious disease, it's easy. You've got to do the testing at the right time and all that kind of stuff, so it's a no brainer. Whereas, the genetic stuff is more tricky and because you can't test for each and every genetic disease, you have to get a good history. And getting a good history is also tricky and you have to have geneticists, you know, who help with that. You've just *got* to! Because there's a lot of things you just don't know."

[88] The management of genetic risk is an issue that exists outside of the realm of assisted reproduction wherever genetic testing is used.

[89] I use this term with care because disabilities are culturally and socially constructed and there is debate within cryobanks about what classifies as a disability.

Infectious disease testing appeared relatively more reliable because it was more predictable and manageable than genetic disease testing and cryobank employees were more familiar and well-versed with it. Genetic technologies, on the other hand, were still fairly new. As many cryobank directors were affiliated with biomedical and not biogenetic professions, they felt a sense of loss of control of a practice they once had expertise over (insemination). Cryobank directors not only had to defer to the FDA, AATB and ASRM, but also to the expertise of genetic counselors in the selection of their donors. Whereas cryobank staff were concerned about too much government intervention in infectious disease testing, they now worried that there was not enough government intervention in genetic disease testing. The lack of regulations coupled with the fear of litigation has led some cryobanks to perform more and more genetic testing on donors. Whether more testing actually alleviates perceived risk is questionable as cryobank representatives believe that there are too many unknowns in the field of genetics to guarantee that testing will completely eradicate risk. Moreover, no systematic surveys on risk perception in recipients exist to show whether and to what extent advertising and increased testing alleviate perceptions of disease risk. Cryobanks with more money and resources usually set the benchmark on genetic testing. Competing cryobanks are compelled to perform similar tests or justify from a risk-based perspective why the tests are not needed. As genetic testing is expensive and there is no guarantee that a particular donor's sperm will be sold even if he is tested thoroughly, cryobanks only test for the most commonly occurring childhood onset genetic diseases, reserving more specific tests if recipients demand. The cost of genetic testing is ultimately passed on to the recipients.

Drawing upon guidelines of the ASRM, ACMG and ACOG, most cryobanks select

genetic tests according to the following criteria: the extent of scientific knowledge about the disease – whether it is well understood or not, whether morbidity and mortality rate of the disease is high, and whether the number of carriers of the trait is high. Testing is also associated with the reliability of the laboratory, whether it reputable and certified, has established testing techniques, whether its testing results are replicable with low numbers of false positives and whether the tests used are sensitive to disease detection and can be clearly interpreted and utilized.

Managing Genetic Risk

Donors are profiled into risk categories before genetic disease tests are performed. Genetic counselors and cryobank directors take extensive genetic histories or pedigrees over three generations, documenting incidence of disease in the donor's family to determine the kinds genetic tests that must be performed further. "Donors must be good historians above all," commented a genetic counselor, "If they don't know their history, they cannot be part of the program." Donor narratives are considered an ongoing process – a history in the making –as family health histories evolve. Although donors are expected to provide as complete information about family history as they can, cryobank representatives understand that this is not always possible. Certain stigmatized diseases such as mental health issues may not always be shared among family members, illnesses may be left undiagnosed or misdiagnosed, family feuds may prevent members from communicating with each other and so forth[90]. Adult onset diseases are also difficult to predict if the donor is young in age and does not have living family members

[90] While genetic predispositions and variations in most mental illnesses are not very well understood, sperm banks exercise caution by documenting any incidence of mental illnesses they suspect as genetic.

who have active symptoms of the disease. There is no way for the cryobank to verify information about a donor's family or the donor's health and lifestyle apart from his narrative, screening and testing. Hence, disease risk can only be minimized to an extent. It can never be eradicated.

All donors undergo cystic fibrosis carrier screening because the disease is considered common enough to affect individuals of all backgrounds. Some genetic tests are automatically performed if the donor belongs to an ethnic group categorized as high risk even if donors do not report the presence of the disease in their family. For example, if the donor identifies as African American or of Eastern European descent (especially Ashkenazi Jew), he is automatically profiled as high risk for Sickle Cell or Tay-Sachs respectively. Race and ethnicity serve as criteria to mark high risk groups. Genetic history questionnaires range from anywhere between 11-21 pages beginning with detailed questions about the donor's living and deceased family members, their age (or age at death), cause of death, occurrence of twins or multiple births in the family. Donors had to list the hair and eye color, skin complexion, height, body frame and vision for each immediate family member. Questionnaires had a checklist of a range of diseases categorized as genetic disorders and another list for birth defects. Genetic counselors read aloud from the list in the donor's presence putting a check mark against each disorder and adding notes and details about its occurrence.

While cryobank representatives found it easier to characterize certain diseases as genetic in origin e.g. certain types of breast and colon cancer, Huntington's, cystic fibrosis, sickle cell anemia, Tay-Sachs, some diseases were more complex to categorize because they also entailed a behavioral/ environmental component e.g. depression, obesity, alcoholism and other kinds of addictions. For example, there was much uncertainty over what kinds of depression were

inherited and what kinds were situational. Cryobank representatives would consider questions such as: Did the donor take antidepressants to cope with the death of his mother or loss of a job or was he on prescription drugs for clinical depression, bipolar disorder, and schizophrenia? Depression had to have a justifiable external cause and be short-term in duration. Donors who were found to have evidence of addiction running in their families were marked for exclusion. One cryobank employee classified families by their addictions: “alcoholic families,” “depression families,” “obese families” underscoring the genetic causality of a disease rather than environmental or other factors.

In the absence of law, cryobank directors take it upon themselves to make moral and ethical decisions on behalf of their recipients. While the genetic counselor is referred to for professional advice, cryobank directors have the discretion not to follow it – an act that is not possible with FDA regulations. The following case is interesting because it draws on the strategic use of legal resources that a cryobank director and rejected donor use to justify their respective positions. In the absence of regulations on genetic testing, both cryobank director and prospective donor draw on the most appropriate legal/ policy sources to back their claims.

A cryobank director rejected a prospective donor with a cleft lip although the genetic counselor had determined that a cleft lip was a birth defect, not a genetic condition. Geneticists consider birth defects to commonly occur in pregnancy, usually during the first three months of the development of the fetus. They are not inheritable like genetic diseases. Yet, some cryobank policies do not accept donors with birth defects. This particular cryobank director refused to accept the donor with the cleft lip citing, “There is a rule: you do not accept someone with a midline genetic anomaly.” The prospective donor, who had had surgery to correct his lip, became

upset, argued with the cryobank director, evoked the American Disability Act and threatened to report the director's discrimination to the police. The cryobank director remained firm, "You have a midline anomaly. I can't choose you," he said. The man proposed that the director not reveal his condition to the recipient to which the director replied that it would be unethical not to do so and that he would be held accountable for his decisions. Although the cryobank director does not specify which rule he draws upon, both he and the prospective donor draw on legal (or legally sounding) references to bolster the strength of their claims. References to law, even in the abstract, are perceived as strategies to increase one's relative authority by showing that one's position is not only correct, it is reinforced by an authority with greater power than a single individual. The prospective donor draws on disability as the basis for his inclusion in reproduction, while the cryobank director uses disability as the basis for exclusion from reproduction. In the end, the cryobank director wins the argument because his professional position holds more power than that of the prospective donor. The case shows how references to law are paradoxically employed for both oppression and protest. Legal references, even in the abstract involve acts of domination and resistance, protection and vilification. Law both serves and undermines cryobanks, donors and recipients. It is used to destabilize and challenge old social hierarchies even as it constructs new ones. In the process, law constructs new social norms, meanings and identities.

Conclusion

This chapter shows how policy makers, cryobanks, donors and recipients use regulations to justify refute and construct social hierarchies. These hierarchies are established by policymakers but also by institutions that have the power to influence policy. It is ironic that while on the one

hand, cryobanks allow the possibility of new family configurations by providing single women and gay and lesbian individuals to have children of their own, regulatory measures continue to uphold hegemonic ideas of heterosexual monogamy by normalizing these ideas in the language of risk and codifying them in law. Law, as Foucault observes, is a way to extend institutional power onto individual bodies. The language of risk also plays a role in justifying the application of both coercive and hegemonic power. Risk allows the exclusion of individuals marked as the "Other" on the basis of inappropriate behaviors, lifestyles, identities and so forth. The construction of the "Other," as I have shown, is a political and moral act. It is easier to create and exclude if the "Other" can be portrayed as threatening to mainstream society. Law helps to crystallize the construction of the "Other," but may also be used to challenge and dispel this construction. Various parties strategically draw upon different aspects of law to further their personal positions. In the end, those with the power to shape laws also get to define who is included and excluded from its protection.

CONCLUSION

The ethnographic evidence provided in this dissertation demonstrates how sperm donors are the products of the cultural discourses, classifications, interactions, and practices of many actors in reproductive tissue banking. My work contributes in specific ways to the anthropology of reproduction, sexuality (or sexualities), identity, and masculinities as well as to scholarship in science and technology studies and social studies of law. I began with a question, which puzzled and fascinated me, and ultimately instigated a more systematic ethnographic inquiry: How do individuals and groups outside cryobanks get to "know" the anonymous donor? I do not mean "knowing" in the sense of access to the donor's mental or introspective state of consciousness. After all, how many of us can truly claim to "know" ourselves or our family members or even intimate partners with whom we have shared many years? Rather, my reference here is to the social construction of knowledge. In an industry which still thrives on the concealment of the donor's identity and by extension, the concealment of male infertility, knowledge of what is hidden and what is presented about the donor must be carefully tailored and managed. As anonymity was under theorized in anthropology, I wanted to critically deconstruct and ethnographically examine the ways in which it operated as an idea and practice in cryobanks. My findings may be useful for researchers studying other kinds of biobanking where the tension between identification and deidentification of biological materials must be managed. My data reveal that the sperm donor's anonymity is flexible and changeable to an extent – sort of like a kaleidoscopic mask, which meets societal needs for a human "face," while concealing the

donor's actual face[91]. At times, this social face is a pastiche of several masks, as I show in Chapter 4, with reference to celebrity look-a-likes. The cultural need for a human face suggests that semen is imagined as originating from a human, male source. The socially constructed faces and bodies of sperm donors through rich narrative descriptions, baby photos, comparisons with celebrities and so forth are ways to make more familiar and acceptable that which technology defamiliarizes. Anonymity protects donors and recipients from an uncertain future that may or may not come to pass. It provides freedom, even temporarily, from the idea of accountability and responsibility. To recipients, donor anonymity provides freedom from interference and shared ownership over the offspring. Yet, as my data shows, anonymity is also associated with risk, danger and lack of accountability. Anonymity is not acceptable to cryobanks who, as intermediaries, must take on legal and financial responsibility for their donors. While donors may remain deidentified to recipients, they must be identifiable to cryobanks, at times even after they leave the program. True anonymity is, therefore, impossible in the cryobank context, yet some semblance of it provides comfort from ambiguity.

Control over the future is an underlying theme in the selection of sperm donors. As much as assisted reproduction is about family building, it is also about the divination of the future family and by extension, the future society. Perhaps this need for control emanates from a deeper human desire to deal with fear of the unknown. For those facing infertility, control takes on even more significant meanings as infertility may be experienced as loss of control over one's "normal" reproductive functions. Previous scholarship on the anthropology of reproduction has shown that

[91] The metaphor of the kaleidoscope was suggested by Linda Hogle in a personal conversation. The metaphor of the mask comes from Claire Wendland's reference to older anthropological studies on the use of masks and concealment (May 10, 2012).

eugenics remains prevalent in the use of assisted reproductive technologies, even though the manifestation of eugenics has moved from state-enforced programs to consumer-driven, market-based models of "individual choice". But as Rapp (1999:37) observes, the "individual choice" model, which is based on expanding possibilities, masks the disparities that limit available options for certain individuals who are already at the margins of the society. She observes, "Threats of eugenic exclusions now involve insurance coverage or its lack, employer discrimination, and struggles around extending coverage of disability legislation to those with genetic susceptibilities. They also include the highly stratified access Americans in all their diversity have to both health services and confidentiality in a context in which 'health care reform' is being provided by the insurance industry, with its policies excluding those with 'preexisting conditions'."

Cryobanks are an interesting paradox when seen in the light of Rapp's analysis. At one end, they foster new kinship configurations that would otherwise not be possible. Many cryobanks serve single women and lesbian couples who were previously excluded from reproduction. However, in other ways, cryobanks are also exclusionary to certain individuals and groups that cannot afford their high costs[92]. Moreover, the state does not offer these women health insurance coverage. Some US states cover IVF and a number of other procedures such as uterine embryo lavage, embryo transfer, zygote intrafallopian tube transfer (ZIFT), low tubal ovum transfer, gamete intrafallopian tube transfer (GIFT), intracytoplasmic sperm injection (ICSI) and the medical costs of donor sperm and eggs. However, the state and insurance companies operate on a medical model of infertility which understands infertility as the inability

[92] See Appendix III for a chart on insemination costs.

to conceive through sexual intercourse for a period of a year or more. This definition of infertility excludes single women and lesbian couples and other ethnic and sexual minorities who may be unable to afford these "choices."

My research shows that cryobank representatives simultaneously promote and refute eugenics by couching it in the language of quality, risk and health and by emphasizing what the donor looks like, yet also monitoring donors and recipients who they feel might be becoming too preoccupied with either of these aspects. For example, donors are selectively chosen and marketed as being the fittest of the fit, biologically (based on the quality of their sperm and "good" genes) and socially (based on physical appearance, profession, education and other forms of social capital). However, cryobank representatives are suspicious of donors who boast about their sexual prowess or show arrogance about their looks or genealogy. Likewise, recipients are reprimanded if they are found to become too preoccupied with the donor's physical appearance or with medical history and genetic testing.

My data also reveal an anxiety on the part of cryobank representatives and recipients about the traits that get "passed down," directly as it were, from the donor to the child. These traits may not necessarily be genetic. In fact, recipients and staff readily admit that they are aware that the donor's sense of clothing style, dirty fingernails, interest in guns and hunting animals, and dislike of apple pie are not inheritable, *but they cannot not be sure* and, therefore, feel the need to exercise precaution by excluding donors with such characteristics. The rejection of men on the basis of a number of diverse traits such as social class, education (or lack thereof), profession, sexuality, social mores, disability, and so forth calls to mind older notions of biological determinism, social Darwinism and religious predestination. Only, the modern version

of biological determinism manifests itself in the discourse of "geneticization," whereby the sum total of personal traits whether biological, social or environmental are grounded in genetics (Lippman 1991, 1993; Beckwith 1993).

My dissertation shows that the sperm donor's identity – his public persona – is a collective project between donors, recipients, cryobanks and regulatory agencies. Identity making is a strategic, ongoing process that involves the unmaking and remaking of social categories in accordance with time and cultural changes. Men and their semen are perceived as having an intrinsic value and an added on value. It is through the work of cryobanks that men are transformed into donors and semen into sellable sperm. Value is added through testing, evaluating and marketing. Yet, this value may also be interchangeable. A four-year college degree need not be important if the prospective donor occupies a profession that cryobank staff believe embodies the same values and ideals desired by recipients. Firefighters, police and EMT's embody heroic ideals of masculinity as well as socially desired values of altruism and sacrifice. Yet, by promoting conventional gendered figures of firefighters, police and EMTs as men, the role of female firefighters, police and EMTs is obscured and overlooked. My research shows that the language of altruism is used in strategic, scripted ways by both cryobank employees and donors who are actually skeptical of the existence of altruism, but feel they must use the language so as not to disappoint recipient and offspring expectations. Ironically, altruism is assumed by cryobank representatives to have more *market* value than a blatant display of self-interest on the part of the donor.

Finally, my dissertation contributes to an anthropology of sexuality by showing how certain forms of sexuality (i.e. heterosexual) are allowed expression, but in controlled ways,

within the boundaries of “collection rooms.” Cryobank representatives place taboos over the use of sexual jokes and any sexual references that might parallel sperm vending with sex work or anonymous sex. Sexuality is seen as dangerous and threatening and permitted only so far as it is necessary for labor. Confining and restricting sexuality to a particular space and medicalizing its expression in language portrays it as forbidden, shameful, deviant, dirty and queer. Meanwhile client depositors’ sexuality is downplayed because of their physical and emotional suffering. I question whether the sperm donor’s sexuality must also be downplayed so as to appear less threatening to the infertile male partner in the heterosexual couple. Few cryobank advertisements portray infertile male partners, preferring to focus on images of smiling pregnant mothers holding happy babies. The absence of the infertile male partner may yet be an indication that male infertility remains a social stigma even as the discourse on openness and identification gains momentum.

Like all ethnographies, my work is an incomplete snapshot of a particular ethnographic moment in time and space. My research was limited by my accessibility to certain experiences, individuals and groups and affected my ability to write about them because of privacy and ethical restrictions. I did not have direct access to sperm donors, recipients, offspring or policy makers such as the FDA, and my ideas and understandings of them are based on second hand oral and textual accounts. Future research with these groups would allow a more complete picture to emerge of their understandings of anonymity, privacy, trust, ownership, and responsibility. I hope that future anthropological research can engage further with these questions and provide more fruitful discoveries.

APPENDIX

1. Interview script for cryobank employees.

The following is a list of tentative questions prepared for cryobank employees. The questions were refined over the course of the research and depending upon the direction the interview took, were followed up by other probes and questions.

On Donors and Recruitment

- What types of sperm donors do you have in your program?
- What is the total number of donors in your program? Can you tell me about their ethnic background? Age? Whether anonymous or identified? Other characteristics that you consider important?
- What is the number of men who choose to have their identities disclosed? What is the number of men who prefer to remain anonymous? Has there been a change in these numbers over the past decade or so? If so, what factors do you think account for this change?
- Have you noticed whether specific characteristics such as the donor's age or marital status affect their decision to identify or not?
- How many donor applicants do you get on a daily basis?
- How many of these applicants are actually selected as donors?
- What are the criteria for donor selection?
- Do you accept gay, bisexual or adopted donors? Why or why not?
- Can you take me through the process of how sperm donors are recruited into your program?
- What makes an appropriate donor?
- Can you tell me about donors who are not selected for your program? Why are they not chosen?
- Who within the cryobank makes decisions about selecting or rejecting donors? Are such decisions ever disputed? If so, can you tell me an instance of how such disputes are/ were resolved?
- How do you compensate donors? Do you have a differing pay scale for different donors or do you pay everyone the same?

On Donor Anonymity

- What does it mean to be an anonymous donor in your program?
- What is an identified donor? Directed donor? Client depositor?
- Can you explain to me the procedures that men must go through to become an anonymous donor? Open/ identified donor? Directed donor? Client depositor?
- Can anonymity be reversed? Can known donors change their mind and revoke their contract before the child turns 18?

- Where do you store donor information?
- How do you protect donor information?
- Who has access to donor information and how much access?
- Who does not have access to donor information and why?
- How long do you store donor information after the donor leaves the program?
- Do you keep track of the donor once he leaves the program? If so how?
- Do you think donors should be anonymous?
- How do you practically balance the donor's need for concealing identity with the recipient and offspring's need/ desire to know the donor for medical or emotional purposes?

Marketing, Selling and Recipients

- Do you have a separate marketing department within your organization? How closely does your marketing staff work with donor coordinators, lab staff client services staff and other cryobank personnel?
- How do you determine pricing for sperm vials?
- How do you decide what characteristics should be part of the donor's profile?
- Who decides what characteristics should be part of the donor's profile?
- What kinds of information about the donor would not go on the profile?
- Have you, in the past, conducted a survey on your recipients to gauge what kinds of donors are popular and why?
- What characteristics do recipients look for in a donor?
- What characteristics do you look for in a donor? What characteristics do you dislike in a donor?
- What characteristics do you dislike in recipients?
- Can you tell me about the recipients who avail your services? (e.g. ethnic background, income, gender, sexual orientation etc)?
- What is an appropriate recipient?
- How much money is spent on donor recruitment campaigns?

Sperm Testing

- What kinds of testing facilities do you have in the lab?
- Can you tell me/ show me how sperm is tested and evaluated?
- How do you identify and evaluate "normal" and "abnormal" sperm?
- How do you document donor evaluation results?
- How do you store sperm?
- How do you keep track of shipments?
- How much access do you have to the donor's records?
- How much communication do you have with other cryobank personnel regarding the testing and evaluation of donors and sperm?

- Do you have a system/procedure for differentiating between the sperm samples of various donors? Can you explain what that system/ procedure entails?
- What is quality control and assurance? How do you ensure that within the lab?
- How close is your communication and contact with donors?

Regulatory Issues

- What are the existing federal and state laws on sperm donation?
- How many regulatory agencies do you report to?
- When was your last FDA inspection? What was the outcome?
- How do you prepare for FDA inspections?
- What are the regulatory issues faced by cryobanks today?
- The UK has a national registry for sperm donors. Do you think the US should also consider this option? Why or why not?
- Is there a limit on the number of pregnancies per donor? How is it determined and who determines it?
- How does your institution keep track of inseminations, pregnancies and births? What is the percentage of clients who report back about pregnancies and births? Is there a correlation between clients who report back and the donor's anonymous or known status or are there other factors at play?
- Has your cryobank ever conducted any studies with recipients to find out why they would or would not want to report pregnancies and/or births?
- Do you export sperm outside the US? If so, are there additional tests that donors have to undergo about their health status?
- Is artificial insemination in your state covered by health insurance?
- What kinds of tests on donors and sperm are mandated by regulatory agencies? What kinds of tests are optional?
- How reliable are currently available infectious disease/ genetic tests?
- Do you think more testing alleviates the risk of disease?
- Do your recipients feel that more testing alleviates disease risk?
- How much testing do recipients want?
- Do you think genetic testing should be regulated by the FDA or some other regulatory agency?

II HIPAA Definitions and 18 Identifiers

Protected Health Information (PHI): Information in any format that identifies the individual, including demographic information collected from an individual that can reasonably be used to identify the individual. Additionally, PHI is information created or received by a health care provider, health plan, employer, or health care clearinghouse; and relates to the past, present, or future physical or mental health or condition of an individual.

De-identified: Information that has certain identifiers (see "identifiers" below) removed in accordance with 45 CFR 164.514; no longer considered to be Protected Health Information.

Identifiers: Under the HIPAA Privacy Rule "identifiers" include the following:

1. Names
2. Geographic subdivisions smaller than a state (except the first three digits of a zip code if the geographic unit formed by combining all zip codes with the same three initial digits contains more than 20,000 people and the initial three digits of a zip code for all such geographic units containing 20,000 or fewer people is changed to 000).
3. All elements of dates (except year) for dates directly related to an individual, including birth date, admission date, discharge date, and date of death and all ages over 89 and all elements of dates (including year) indicative of such age (except that such ages and elements may be aggregated into a single category of age 90 or older)
4. Telephone numbers
5. Fax numbers
6. Electronic mail addresses
7. Social security numbers
8. Medical record numbers
9. Health plan beneficiary numbers
10. Account numbers
11. Certificate/license numbers
12. Vehicle identifiers and serial numbers, including license plate numbers
13. Device identifiers and serial numbers
14. Web Universal Resource Locators (URLs)
15. Internet Protocol (IP) address numbers
16. Biometric identifiers, including finger and voice prints
17. Full face photographic images and any comparable images
18. Any other unique identifying number, characteristic, or code (excluding a random identifier code for the subject that is not related to or derived from any existing identifier).

Source: <http://oshpd.ca.gov/Boards/CPHS/HIPAAIdentifiers.pdf> (Last accessed: May 11, 2012)

III Cost of Donor Insemination

*Costs are per vial unless otherwise indicated. Costs do not include semen analysis, processing, shipment and storage fees.

Donor Consultation and Photo Matching	$50-$150
Donor Selection Consultation (Phone/ In house)	$350-$570
Anonymous Donors "Standard" ICI (unwashed) vial of donor sperm for Intracervical Insemination (guaranteed >10 mil. motile) "Standard" IUI (washed) vial of donor sperm for Intrauterine Insemination (guaranteed >10 mil. motile) "Premium" ICI (unwashed) vial of donor sperm for Intracervical Insemination (guaranteed >15 mil. motile) "Premium" IUI (washed) vial of donor sperm for Intrauterine Insemination (guaranteed >15 mil. motile) A.R.T vials (5 mil. motile sperm)	 $350- $570 $455-$490 $450 $615 $250
Open Identity Donors "Standard" ICI (unwashed) vial of donor sperm for Intracervical Insemination (guaranteed >10 mil. motile) "Standard" IUI (washed) vial of donor sperm for Intrauterine Insemination (guaranteed >10 mil. motile) "Premium" ICI (unwashed) vial of donor sperm	 $455 $535 $590

for Intracervical Insemination (guaranteed >15 mil. motile) "Premium" IUI (washed) vial of donor sperm for Intrauterine Insemination (guaranteed >15 mil. motile)	$715
A.R.T. vial (5 mil. motile)	$250
Short Sperm Donor Profiles (staff impressions, basic donor profile, baby photo,* medical history,* donor essay) Long profile (extended donor profile, facial features reports, audio clips, personality evaluation and other professional evaluation)	Free - $50 $75-$250
Genetic Consultation	$100/ half hour
Donor Profile Silhouette	$21-$32
Graduate Donors	$340-$590
Facial Features Report	$20
Handwriting Analysis	$20

Note: This comparative price list has been obtained from the web sites of California Cryobank Inc, Fairfax Cryobank, Xytex Cryobank, and Sperm Bank of California. Cryobanks vary in their marketing information and fees. The above prices are current as of May 16, 2012.

REFERENCES

ABC News Nightline
2009 Celebrity Look-Alike Sperm Donors: A Superficial Service? October 20. http://abcnews.go.com/Nightline/celebrity-alike-sperm-donors-resemble-stars-david-beckham/story?id=8781583. [Last accessed: April 4, 2010].

Allen AL.
1997 Genetic privacy: emerging concepts and values. In *Genetic Secrets: Protecting Privacy and Confidentiality in the Genetic Era.* Mark A. Rothstein (ed). New Haven: Yale University Press (Pp 31-59).

Allen, Anita
2003 "Privacy." In LaFollette Hugh (ed.) *The Practical Handbook of Practical Ethics*. Oxford: Oxford University Press. Pp 485-513.

Almeling, Rene
2006 "Selling Genes, Selling Gender: Egg Agencies, Sperm Banks, and the Medical Market in Genetic Material." In American Sociological Review 72(3):319-340. June.
2011 Sex Cells: The Medical Market for Eggs and Sperm. Berkeley: University of California Press.

American Society for Reproductive Medicine (ASRM)
2008 "Guidelines for Gamete and Embryo Donation: A Practice Committee Report." Fertility Sterility. 90(3): S30-44 http://www.asrm.org/uploadedFiles/ASRM_Content/News_and_Publications/Practice_Guidelines/Guidelines_and_Minimum_Standards/2008_Guidelines_for_gamete%281%29.pdf. (Last accessed January 27, 2012).

Appadurai, Arjun
1986 *The Social Life of Things.* (ed.) Cambridge and New York: Cambridge University Press.
1996 *Modernity at Large*. Minneapolis: University of Minnesota Press.

Asad, Talal
1994 "Ethnographic Representation, Statistics and Modern Power" *in* Social Research (61:2):55-88. Spring.

Bateman Novaes, S.
1998 "The Medical Management of Donor Insemination." In *Donor Insemination International and Social Science Perspectives.* K. Daniels and E. Haimes (eds). (Pp 105-130). Cambridge: Cambridge University Press.

Beck, Ulrich

1992 *Risk society: Towards a New Modernity*. London: Sage.
1999 *World Risk Society*. Cambridge: Polity Press.

Becker, Gaylene
2000 *The Elusive Embryo: How Women and Men Approach New Reproductive Technologies*. Berkeley: University of California Press.

Becker Gay, Anneliese Butler, and Robert Nachtigall
2005 "Resemblance Talk: A Challenge for Parents Whose Children Were Conceived with Donor Gametes in the US." Social Science and Medicine (61):1300-1309.

Beckwith, Jon
1993 "A Historical View of Social Responsibility in Genetics." BioScience 43(5):327-333.

Botchan, A, R. Hauser, R. Gamzu, L. Yogev, G. Paz, and H. Yavetz
2001 "Results of 6139 Artificial Insemination Cycles with Donor Spermatozoa Human Reproduction. 16(11): 2298-2304. http://humrep.oxfordjournals.org/content/16/11/2298.short (last accessed 09/20/2011).

Botkin, Jeffrey
2001 Protecting the Privacy of Family Members in Survey and Pedigree Research. Health Law and Ethics. JAMA, 285(2): 207-211 (January 10).

Bourdieu, Pierre
1986 "The Forms of Capital." In *Handbook of Theory and Research for the Sociology of Education*. J. Richardson (ed.). New York: Greenwood. Pp 241-258.

Bowker, Geoffrey. C. and Susan. L. Star
1999 *Sorting Things Out: Classification and Its Consequences*. Cambridge: MIT Press.

Bracey, Dorothy H.
2006 *Exploring Law and Culture*. Long Grove: Waveland Press, Inc.

Brod, Harry (ed.)
1987 *The Making of Masculinities: The New Men's Studies*. Boston: Allen & Unwin.

California Cryobank
2009 Donor Look-A-Likes. http://www.cryobank.com/Donor-Search/Look-A-Likes/. Last accessed April 4, 2010.

Carney, Scott
2011 The *Red Market*: On *the Trail of the World's Organ Brokers, Bone Thieves, Blood Farmers, and Child Traffickers.* New York: William Morrow Publishers.

Castel, R.
1991 "From Dangerousness to Risk." *In* Burchell, G., Gordon, C & Miller, P. (eds.), *The Foucault Effect: Studies in Governmentality* (pp. 281–298). London: Harvester Wheatseaf.

Clarke, Adele E. and Joan H. Fujimura (eds.)
1992 *Right Tools for the Job: At Work in Twentieth-Century Life Sciences*. Princeton: Princeton University Press.

Clarke, Julie
2002 "The Human /Not Human in the Work of Orlan and Stelarc." In *The Cyborg Experiments*:*The Extensions of the Body in the Media Age.* Johanna Zylinska (ed.)

Collins, H.M.
1981 "Knowledge and Controversy: Studies in Modern Natural Science." Special Issue of Social Studies of Science, 11: 1-158.
1985 *Changing Order: Replication and Induction in Scientific Practice*, London: Sage.

Cooper, Trevor G, Elizabeth Noonan, Sigrid von Eckardstein, Jacques Auger, H.W. Gordon Baker, Hermann M. Behre, Trine B. Haugen, Thinus Kruger, Christina Wang, Michael T. Mbizvo and Kirsten M. Vogelsong
2009 World Health Organization Reference Values for Human Semen Characteristics. Human Reproduction Update, 00(0): 1–15.

Critser, John K.
1998 "Current Status of Semen Banking in the USA." Human Reproduction 13(2): 55-67.

Crossland, Zoe
2009 "Of Clues and Signs: The Dead Body and Its Evidential Traces." American Anthropologist. 111(1): 69–80.

Cuticchia, A. Jamie
2008 The Legal Treatment of the Parental Rights and Obligations of Sperm Donors. The Open Law Journal. 1:16-22. http://www.benthamscience.com/open/tolawj/articles/V001/16TOLAWJ.pdf

Daar, Judith F.
2006 *Reproductive Technologies and the Law*. New Jersey: LexisNexis.

Daniels, Cynthia R. and Janet Golden
2004 "Procreative Compounds: Popular Eugenics, Artificial Insemination and the Rise of the American Sperm Banking Industry." Journal of Social History. 38 (1):5-27.

Daniels, Ken and Karyn Taylor
1993 "Secrecy and Openness in Donor Insemination." Politics and Life Sciences. 12(2): 155–170.

Davis, Lennard J.
1995 *Enforcing Normalcy: Disability, Deafness and the Body*. London and New York: Verso.

Davis-Floyd, Robbie and Joseph Dumit
1998 *Cyborg Babies: From Techno-Sex to Techno-Tots*. New York and London: Routledge.

Douglas, Mary
1966 *Purity and Danger: An Analysis of Concepts of Pollution and Taboo.* New York: Routledge.

Durkheim, Emile
1997 [1893] *The Division of Labor in Society*. New York: Free Press.

Duster, Troy
1990 *Backdoor to Eugenics*. New York and London: Routledge.

Elger, Bernice S. and Arthur Caplan
2006 "Consent and Anonymization in Research Involving Cryobanks." EMBO Reports 7(7):661-66.

Ettore, Elizabeth
2002 *Reproductive Genetics, Gender and the Body*. London and New York: Routledge.

Fassin, Didier and Estelle d'Halluin
2007 Critical Evidence: The Politics of Trauma in French Asylum Policies. Ethos 35(3): 300–329.

Farmer, Paul
1992 *AIDS and Accusation: Haiti and the Geography of Blame*. Berkeley: University of California Press.

Foucault, Michel
1973 *Birth of the Clinic*: *Archaeology of Medical Perception*. Trans. A. M. Sheridan Smith New York: Pantheon Books.
1978 *The History of Sexuality Vol 1. An Introduction.* Trans. Robert Hurley. New York: Pantheon.
1991 [1977] *Discipline and Punish: The Birth of a Prison*. London: Penguin.

1998 [1984] *The History of Sexuality Vol 3. The Care of the Self*. Trans. Robert Hurley. New York: First Vintage Books.

Fox, Renee and Judith Swazey
1992 *Spare Parts: Organ Replacement in American Society*. Oxford: Oxford University Press.

Franklin, Sarah
2006 "The Cyborg Embryo: Our Path to Transbiology." Theory, Culture and Society. 23 (7-8): 167-188.
1997 *Embodied Progress: A Cultural Account of Assisted Conception*. London: Routledge.

Franklin, Sarah and Helena Ragoné (eds.)
1998 *Reproducing Reproduction: Kinship, Power, and Technological Innovation*. Philadelphia: University of Pennsylvania Press.

Franklin, Sarah and Margaret Lock (eds.)
2003 Remaking Life & Death : Toward an Anthropology of the Biosciences. Santa Fe and Oxford: School of American Research Press; James Currey.

Franklin, Sarah, Celia Lury and Jackie Stacey (eds.)
2000 *Global Nature, Global Culture*. London: SAGE Publications.

Fujimura, Joan H.
1996 *Crafting Science: A Sociohistory of the Quest for the Genetics of Cancer*. Cambridge and London: Harvard University Press.

Giddens, Anthony
1991 *Modernity and Self-Identity*. Cambridge: Polity.

Giddens, Anthony
1981 "Agency, Institution, and Time-Space Analysis," in *Advances in Social Theory and Methodology*, K. Knorr-Cetina and A.V. Cicourel (Eds.), Boston MA: Routledge & Kegan Paul.

Gieryn, Thomas F.
1999 Cultural *Boundaries of Science: Credibility on the Line.* Chicago and London: University of Chicago Press.

Gramsci, Antonio
1971 Se*lections from the Prison Notebooks* (1929-1935). Trans. Quintin Hoare and Geoffrey Nowell Smith (eds.) New York: International Publishers.

Gupta, Akhil and James Ferguson (eds.)
1997 "Discipline and Practice: 'The Field' as Site, Method, and Location in Anthropology" in *Anthropological Locations: Boundaries and Grounds of a Field Science*. Berkeley: University of California Press.

Gusterson, Hugh
1997 "Studying Up Revisited." PoLAR 20(1 May):114-119.
Haimes, Erica
1993 "Issues of Gender in Gamete Donation." Social Science & Medicine 36(1 January):85-93.

Halley, Janet E.
1993 "The Construction of Heterosexuality." In *Fear of a Queer Planet. Queer Politics and Social Theory.* M. Warner (ed.) Pp. 82-102. Minneapolis: University of Minnesota Press.

Hannerz, Ulf
2003 "Being there…and there…and there!: Reflections on Multi-Site Ethnography." Ethnography 4 (2): 201-216.
Haraway, Donna J.
1991 *Simians, Cyborgs and Women: The Reinvention of Nature*. New York: Routledge.

Hard, Addison D.
1909 "Artificial Impregnation." 27 Medical World 27 (163).

Hoeyer, K., B.O. Olofsson, T. Mörndal , and N. Lynöe
2005 "The Ethics of Research Using Biobanks: Reason to Question the Importance Attributed Informed Consent."Archives of Internal Medicine. 165: 97-100.
2004 "Informed Consent and Biobanks: A Population-Based Study of Attitudes Towards Tissue Donation for Genetic Research. Scandinavian Journal of Public Health**.** 32: 224-229.

Hogle, Linda
1999 *Recovering the Nation's Body: Cultural Memory, Medicine, and the Politics of Redemption*. New Jersey: Rutgers University Press.
2003 "Life/Time Warranty: Rechargeable Cells and Extendable Lives. In *Remaking Life and Death: Toward an Anthropology of the Biosciences*, Sarah Franklin and Margaret Lock (ed.), pp. 61–96. Santa Fe: School of American Research Press.
2005 "Enhancement Technologies and the Body." Annual Review of Anthropology. 34 (695–716).
_____ Personal conversation. Tuesday, February 22, 2005.
2010 "Characterizing Human Embryonic Stem Cells: Biological and Social Markers of Identity." Medical Anthropology Quarterly 24(4):433-450.
2011 "Anonymity and Identity at the Cellular Level." Paper presented at the American Anthropological Association Panel: Traces and Legacies of the Self: Techniques of Identification and Anonymization. November 17.

Inhorn, Marcia C., Tine Tjørnhøj-Thomsen, Helene Goldberg and Maruska la Cour Mosegaard
2010 *Reconceiving the Second Sex: Men, Masculinity, and Reproduction*. New York and Oxford: Berghahn Books.

Jedrej, M. Charles
1976 "Structural Aspects of a West African Secret Society." Journal of Anthropological Research. 32(3):234-245. Fall.

Katz Rothman, B.K.
1998 *Genetic Maps and Human Imaginations*. New York: W.W. Norton.

Kidd, Sharon A, Brenda Eskenazi, and Andrew J Wyrobek
2001 "Effects of Male Age on Semen Quality and Fertility: A Review of the Literature." Fertility and Sterility. 75(2):237-248). February http://www.fertstert.org/article/S0015-0282%2800%2901679-4/abstract [last accessed: April 6, 2012].

Knoppers, Bertha M.
1993 Donor Insemination: "Children as in Concreto or in Abstracto Subjects of Rights?" Politics and the Life Sciences. 12(2):182-185.

Knoppers, Bartha M. and Sonia LeBris
1991 "Recent Advances in Medically Assisted Conception: Legal, Ethical, and Social Issues." American Journal of Law and Medicine (17): 329-61.

Knorr-Cetina, Karin D.
1981 *The Manufacture of Knowledge: An Essay on the Constructivist and Contextual Nature of Science*. Oxford and New York: Pergamon Press.
1999 *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge and London; Harvard University Press.

Kopytoff, Igor
1986 "The Cultural Biography of Things: Commoditization as Process." In *The Social Life of Things*. Appadurai, Arjun (ed). Cambridge and New York: Cambridge University Press. Pp. 64-91.

Lampland, Martha and Susan Leigh Star (eds.)
2009 *Standards and Their Stories: How Quantifying, Classifying, and Formalizing Practices Shape Everyday Life*. Ithaca, NY: Cornell University Press.

Landecker, Hannah
2007 *Culturing Life: How* Cells *Became Technologies*. Cambridge: Harvard University Press.

Lasker, Judith N.
1993 "Doctors and Donors: A Comment on Secrecy and Openness in Donor Insemination." Politics and the Life Sciences. 12(2):186-188.

Lasker, Judith. N. and Susan Borg
1987 *In Search of Parenthood: Coping with Infertility and High-Tech Conception*. Boston: Beacon Press.
1989 "Secrecy and the New Reproductive Technologies." In *New Approaches to Human Reproduction: Social and Ethical Dimensions.* LM Whiteford and M.L Poland (eds). Boulder: Westview Press.

Larson, Lillian
2010 Personal Conversation about the University of Wisconsin-Madison's Social and Sciences Institutional Review Board's Position on Anonymity in Research and Sperm Donation (October).

Latour, Bruno
2000 *Pandora's Hope: Essays on the Reality of Science Studies*. Cambridge: Harvard University Press.

Latour, Bruno. and Steve Woolgar
1979 *Laboratory Life: the Social Construction of Scientific Facts.* Beverly Hills and London, Sage.

Lee, C.Y., C.T. Lee, C. H. Wu, C.S. Hsu, M.I Hsu
2011 "Kruger Strict Morphology and Post-Thaw Progressive Motility in Cryopreserved Human Spermatozoa." Andrologia. http://www.mdlinx.com/urology/news-article.cfm/3719140/spermatozoa. (Last accessed: 09/20/2011).

Lesher, Jennifer S.
2001 *The Experiences of Eight Married Women who Conceived Children by Anonymous Donor Insemination*. Unpublished Master's Thesis. Institute of Transpersonal Psychology, Palo Alto, California.

Levmore, Saul
1996 "The Anonymity Tool." University of Pennsylvania Law Review. 144 (5): 2191-2236. The University of Pennsylvania Law Review. May.

Lin Z, AB Owen and RB Altman
2004 Genomic Research and Human Subject Privacy. Science 305:183.

Malinowski, Bronislaw
1984 [1922] Argonauts of the Western Pacific. Prospect Heights: Waveland Press.

Lippman, Abby
1991 "Prenatal Genetic Testing and Screening: Constructing Needs and Reinforcing Inequities." American Journal of Law and Medicine 17(1-2):15-50.
1994 "The Genetic Construction of Prenatal Testing." In *Women and Prenatal Testing: Facing the Challenges of Genetic Testing*. K. Rothenberg and E.J. Thomson (eds.)

Llewellyn, Karl N and E. Adamson Hoebel
1983 [1941] *The Cheyenne Way*: *Conflict and Case Law in Primitive Jurisprudence*. Norman: University of Oklahoma Press.

Lock, Margaret
2001 *Twice Dead: Organ Transplants and the Reinvention of Death*. Berkeley: University of California Press.

Lupton, Deborah
1993 "Risk as Moral Danger: The Social and Political Functions of Risk Discourse in Public Health." International Journal of Health Services. 23: 425-435.

Lupton, Deborah and Petersen
1996 *The New Public Health: Health and Self in the Age of Risk*. London: SAGE.

Lynch, Michael
1985 *Art and Artifact in Laboratory Science: A Study of Shop Work and Shop Talk in Research Laboratory*. London: Routledge and Kegan Paul.

Marcus, George E.
1986 "Contemporary Problems of Ethnography in the Modern World System." In *Writing Culture: The Poetics and Politics of Ethnography*. James Clifford and George Marcus (eds.) Berkeley: University of California Press.
1995 "Ethnography In/Of the World System: The Emergence of Multi-Sited Ethnography." Annual Review of Anthropology. 24:95-117.

Marcus, George E. and Michael M.J. Fischer
1999 [1986] *Anthropology as Cultural Critique*. Chicago: University of Chicago Press.

Martin, Emily
1987 *Woman in the Body: A Cultural Analysis of Reproduction*. Boston: Beacon Press.
1991 "The Egg and the Sperm: How Science Constructed a Romance Based on Stereotypical Male-Female Roles." Signs: Journal of Women in Culture and Society 16:485-501.
1994 *Flexible Bodies: Tracking Immunity in American Culture from the Days of Polio to the Age of AIDS*. Boston: Beacon Press.

Marx, Karl
1988 [1932] *The Economic and Philosophic Manuscripts of 1844 and the Communist Manifesto***.** Amherst: Prometheus Books. 1st edition.

Mauss, Marcel
1925 *The Gift: The Form and Reason for Exchange in Archaic Societies*. London: Routledge.

Merrick, Janna C and Robert H. Blank
2003 *Reproductive Issues in America: A Reference Handbook*. Santa Barbara and Denver: ABC-CLIO Inc.

Modell, Judith
1994 *Kinship with Strangers. Berkeley*: University of California Press.

Monica Konrad
2005 *Nameless Relations: Anonymity, Melanesia and Reproductive Gift Exchange between British Ova Donors and Recipients*. New York and Oxford: Berghahn Books.

Morgan, Lynn
2003 "Embryo Tales. In *Remaking Life and Death: Toward an Anthropology of the Biosciences*. Sarah Franklin and Margaret Lock (eds). pp. 261-91. Santa Fe: School of American Research Press.

Moore, Lisa Jean.
2002 "Extracting Men from Semen: Masculinity in Scientific Representations of Sperm." Social Text. 20 (4: 91-119).
2003 "Billy, the Sad Sperm with No Tail: Representations of Sperm in Children's Books." Sexualities. 6(3-4): 279-305.
2007 *Sperm Counts*: *Understanding Man's Most Precious Fluid*. New York: New York University Press.

Motluk, Alison
2005 "Anonymous Sperm Donor Traced on Internet**.** New Scientist Magazine. 2524:6. November 03. www.newscientist.com." Last accessed August 10, 2010.

MSNBC News
2005 "FDA Set to Ban Gay Men as Sperm Donors. May 5. Source: http://www.msnbc.msn.com/id/7749977/(Last accessed: March 10, 2012)

Nader, Laura
1969 "Up the Anthropologist—Perspectives Gained from Studying Up" in *Reinventing Anthropology*, Dell Hymes (ed.) New York: Random House Inc.
2002 *The Life of the Law*. Berkeley: University of California Press.

Nader, Laura and H. Todd Jr. (eds.)
1978 *The Disputing Process – Law in Ten Societies*. New York: Columbia University Press.

Ohm, Paul
2009 "Broken Promises of Privacy: Responding to the Surprising Failure of Anonymization." Paper presented at Harvard University's Center for Research and Computer Science, Harvard University's Berkman Center, Princeton University's Center for Information Technology Policy, U.C. Berkeley's Privacy Law Scholars Conference, the University of Washington School of Law, University of Washington Computer Science & Engineering Department, and the University of Colorado Law School. Draft.

Pear R.
1985 "AIDS blood test to be available in 2 to 6 weeks." The New York Times. March 3.

Pernick, Martin S.
1996 *The Black Stork: Eugenics and the Death of "Defective" Babies in American Medicine and Motion Pictures since 1915*. New York and Oxford: Oxford University Press.

Pope Pius XII
1950 "To Catholic doctors." The Catholic Mind. 48(1048): 252.

Post, Robert (ed.)
1991 *Law and the Order of Culture*. Berkeley: University of California Press.

Radin, Margaret J.
1996 *Contested Commodities*. Cambridge: Harvard University Press.

Ragoné, Heléna
1994 *Surrogate Motherhood: Conception in the Heart* (Institutional Structures of Feeling). Boulder: Westview Press.

Rapp, Rayna
1999 *Testing Women, Testing the Fetus: The Social Impact of Amniocentesis in America*. New York: Routledge.

Ravitsky, Vardit and Joanna E. Scheib
2010 "Donor Conceived Individuals Right to Know." Bioethics Forum. July 20. http://www.thehastingscenter.org/Bioethicsforum/Post.aspx?id=4811&blogid=140 Last (accessed August 29, 2010).

Rose, Nikolas
2001 "The Politics of Life Itself." *Theory, Culture, Society.* 18(6):1–30

Rosen, Lawrence
2006 *Law as Culture: An Invitation*. Princeton and Oxford: Princeton University Press.

Sahlins, Marshall
1972 *Stone Age Economics*. Chicago: Aldine-Atherton.

Said, Edward W.
1978 *Orientalism*. New York: Random House.

Sanjek, Roger (ed.)
1990 *Fieldnotes: The Makings of Anthropology*. Ithaca: Cornell University Press.

Scheper-Hughes, Nancy
2006 "The Tyranny of the Gift: Sacrificial Violence in Living Donor Transplants," American Journal of Transplant (Ethics Corner), 7: 1-5
2004a "The Last Commodity: Post-Human Ethics and the Global Traffic in 'Fresh' Organs," in Global Assemblages, Aihwa Ong and Stephen Collier, eds. London: Basil Blackwell.
2004b "Parts Unknown: Undercover Ethnography of the Organs-Trafficking Underworld". Ethnography 5(1): 29-73
2000 "The Global Traffic in Human Organs." Current Anthropology." 41(2): 191-211.

Schmidt Matthew, and Moore Lisa J.
1998 "Constructing a Good Catch, Picking a Winner: The Development of Technosemen and the Deconstruction of the Monolithic Male. In *Cyborg Babies: From Techno-Sex to Techno-Tots*. Davis-Floyd, Robbie and Joseph Dumit (eds.) New York and London: Routledge. Pp. 21-39

Sharp, Lesley A.
1995 "Organ Transplantation as a Transformative Experience: Anthropological Insights into the Restructuring of the Self", Medical Anthropology Quarterly. 9(3):357-389.
2006 *Strange Harvest: Organ Transplants, Denatured Bodies and the Transformed Self*. Berkeley and Los Angeles: University of California Press.

Stallybrass P. and A. White.
1986 *The Politics and Poetics of Transgression*. London: Methuen.

Starr, June and Jane F. Collier
1989 *History and Power in the Study of Law: New Directions in Legal Anthropology*. Ithaca: Cornell University Press.

Strathern, Marilyn

1992 *Reproducing the Future: Essays on Anthropology, Kinship, and the New Reproductive Technologies*. New York: Routledge.
2005 Kinship, Law and the Unexpected: Relatives are Always a Surprise. Cambridge: Cambridge University Press.

Scheper-Hughes, Nancy
2007 "The Tyranny of the Gift: Sacrificial Violence in Living Donor Transplants." American Journal of Transplantation. 7: 507–511.

Sweeney, Latanya
2000 "Uniqueness of Simple Demographics in the U.S. Population." Laboratory for International Data Privacy Working Paper, LIDAP-WP4.

Taleb, Nassim N.
2007 *The Black Swan*: *The Impact of the Highly Improbable*. New York: Random House.

Thomas, Robert
1995 "Interviewing Important People in Big Companies" in Hertz, Rosanna and Jonathan B. Imber (eds.) *Studying Elites Using Qualitative Methods.* Thousand Oaks; SAGE Publications.

Tober, Diane M.
2001 "Semen as Gift, Semen as Goods: Reproductive Workers and the Market in Altruism." Body & Society, 7(2-3: 137-160).
_____*Romancing the Sperm: The Screening and Making of Alternative American Families.* Ph.D dissertation. Department of Anthropology, University of California-Berkeley with the University of California- San Francisco.

Traiman, Leland
2006 "Guidelines But No Guidance: GaySpermBank.com vs. FDA." Journal of Gender, Race and Justice. 9(3): 613-620. Spring.

Turner, Victor
1970 [1967] *The Forest of Symbols: Aspects of Ndembu Ritual*. Ithaca: Cornell University Press.

Uusitalo, Susanne
2010 "Biobanks and Privacy [The Case of Finland]." www.helsinki.fi/kirjaamo/Nuas/Biobanks%20and%20privacy.doc *(last accessed December 5, 2011)*

Van Gennep, Arnold
1960 [1909] *The Rites of Passage.* London: Routledge.

Waldby, Catherine and Robert Mitchell
2006 *Tissue Economies: Blood, Organs, and Cell Lines in Late Capitalism*. Durham: Duke University Press.

Weber, Max
1997 [1947] *The Theory of Social and Economic Organization* [trans.] A. M. Henderson and Talcott Parsons. Washington D.C.: Free Press.

Wendland, Claire
2007 "The Vanishing Mother: Cesarean Section and "Evidence-Based Obstetrics." Medical Anthropology Quarterly. 21 (2): 218-233.

World Health Organization
2010 "Examination and Processing of Human Semen." Fifth Edition. Geneva: WHO Press.

Wyrobek, A.J., B. Eskenazi, S. Young, N. Arnheim, I. Tiemann-Boege, E. W. Jabs, R. L. Glaser, F. S. Pearson, and D. Evenson
2006 "Advancing Age has Differential Effects on DNA Damage, Chromatin Integrity, Gene Mutations, and Aneuploidies in Sperm/" PNAS 006 103 (25) 9601-9606. June 9. http://www.pnas.org/content/103/25/9601.full [last accessed: April 6, 2012].

Yalda, Christine A.
2001 "Walking the Straight and Narrow: Performative Sexuality and the First Amendment after Hurley." In *Between Law and Culture. Relocating Legal Studies*. David T. Goldberg, Michael Musheno and Lisa C. Bower (eds.). Pp. 288-305. Minneapolis: University of Minnesota Press.