Birds & Bees: How Nature and Kinship are Mobilized to Support Nuclear Family Narratives on Fertility Clinic Websites.

by

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B.A., University of Victoria, 1997

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ABSTRACT

This thesis explores how fertility clinics engage in various textual and visual strategies to locate nature and kinship in the context of the assisted conception technologies they offer. In particular, competing paradigms of modern technology solving problems of the body versus the "naturalness" of having a baby means that fertility clinics must mobilize particular understandings of nature and technology to bridge this gap. Additionally, fertility clinics draw upon culturally meaningful themes such as "birds and bees" to structure relationships among assisted conception technology participants. I argue that fertility clinic websites are public sites of discourse through which clinics both attempt to attract potential clients and shape understanding of assisted conception technology by offering particular explanations as real and natural.

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INTRODUCTION

Reproductive technologies are heralded as opening up possibilities for infertile women and men and same-sex couples and cautioned against by others who perceive a threat to traditional families and values. Recent newspaper headlines announced Canada's first three-parent family when an Ontario court awarded a non-biological lesbian co-mother the legal status of mother, in addition to the existing biological mother and non-custodial biological father (Austen 2007; Hanes 2007). Another headline announced that a woman who donated and cryopreserved her eggs for her infertile daughter could become the social grandmother of her genetic daughter (Bonoguore 2007). Reports of developments in reproductive technology and attendant debate about the ethics and social implications of these developments have been a regular feature of Canadian public media for over two decades. The possibilities of donating one's egg or sperm to one's offspring or to complete strangers or of employing a surrogate to gestate one's child raise provocative questions for both the public and for anthropologists. Anthropologists have long been interested in culture change, the social implications of technology and the diverse ways in which humans reckon kinship, form families and utilize technology. In 1999-2001[1], I undertook an anthropological investigation into one aspect of the diverse meanings and practices which constitute current biomedical

[1] A brief review of the websites in the sample indicates the ongoing use of the key features I note in this thesis, including: images of lilies, trees, and other flora; images of bees pollinating flowers; the presentation of pregnancy as an achievement; the presentation of surrogacy as a gift; and, the differential power of egg and sperm to maintain and sever kinship relations. Website changes appear to be primarily in terms of style rather than substance.

technologies of assisted conception. Specifically, I examined a sample of fertility clinic websites from Canada and the United States. My research asked three questions:

1) How are ideas about reproduction, in particular nature and kinship, mobilized on fertility clinic websites?

2) What is being said on those sites about the parent/child, adult/gamete, adult/embryo and participant/physician relationships?

3) How are these meanings and relationships shaped by existing social hierarchies of ethnicity/race, ability, sexuality and gender?

To address these questions, I identified culturally meaningful bases for kinship including concepts invoked to establish kinship in situations that could create tension or disrupt conventional understandings of how parents and their offspring are related. Since reproduction in these contexts involves technologies and multiple participants, I am interested in how the application of reproductive technologies as a cultural endeavour affects understandings of kinship. I also identified how the concept of nature is mobilized when the conventional birds and bees conception story is manipulated in reproductive technology contexts. This thesis presents the results of my investigations.

I begin Chapter One by describing the ways in which reproductive technologies are represented in the public discourse. These representations have come to be seen as the way in which the public should engage reproductive technologies in Canada. I focus on one theme in the public discourse in which nature, the nuclear family and Canadian

values are perceived to be at risk from technology that is out of control and I identify underlying concepts on which this discourse is based. I then turn to fertility clinic websites and discuss a different discourse in which it is not technology that is out of control, but nature. Next I provide a brief summary of reproduction in anthropological theory and describe a revised nature/culture model in which the social is inscribed upon the natural. This literature examines dynamic models of kinship in which culturally specific kinship is strategically mobilized to foreground some relationships and background others. Next I suggest that fertility clinics act as entrepreneurs, advertising their services to a particular audience within a fluctuating environment of ideas about nature, kinship and reproduction. Finally I identify the research questions I use to investigate how ideas about reproduction, in particular nature and kinship, are mobilized on fertility clinic websites.

In Chapter Two I describe how I look at fertility clinic websites as public documents situated in a virtual field. I describe my methodology including sampling process, identification of themes and selection of discourse analysis as an appropriate framework to discuss nature and kinship on fertility clinic websites. Chapter Three begins with a description of how fertility clinics establish their voice of authority by asserting their medical and marketplace legitimacy and by presenting a limited and carefully managed set of possibilities from which infertility clients may "choose." I then provide an overview of fertility clinic website arrangement and content including fertility clinic reproductive technologies and services. Following this overview I provide more

detailed descriptions of two fertility clinic websites that exemplify the mobilization of nature and kinship.

In Chapter Four I turn to a description of how kinship is manifested on fertility clinic websites when relatedness among participants is asserted. I describe relationships as they are presented on websites in terms of each reproductive technology, and identify the key threats to nature and kinship that the fertility clinics must address. Next in Chapter Five I look at reproductive technologies as socio-technical networks to demonstrate how the culturally meaningful themes that fertility clinic websites use to provide meanings for the technologies become problematic when compared and contrasted. Finally in Chapter Six I discuss the overarching narrative of the nuclear family that is pervasive on fertility clinic websites, as well as how conventional gender stereotypes are reproduced. I conclude with a discussion of kinship as social practice in which kinship status is first determined socially and then justified by the mobilization of culturally specific kinship determinants.

CHAPTER ONE:

LOCATING NATURE AND KINSHIP IN REPRODUCTIVE TECHNOLOGIES

In this chapter I describe a public discourse that sets the discursive space for the public to engage reproductive technologies in Canada. I discuss how nature, the nuclear family and Canadian values are perceived to be at risk from technology that is out of control. I then turn to fertility clinic websites and discuss a different discourse in which it is not technology that is out of control, but nature. Next I provide a brief summary of reproduction in anthropological social theory and identify a gap in the literature in which the majority of anthropological research focuses on the voices of the participating women and men rather than the voices of the fertility clinics. I suggest that fertility clinics act as entrepreneurs, shaping and organizing alternate meanings of reproductive technologies, nature and kinship. Finally I identify the research questions I use to investigate how ideas about reproduction, in particular nature and kinship, are mobilized on fertility clinic websites.

1.1 Public Discourse

In this section I provide an overview of the public discourse relating to reproductive technologies in Canada. A range of reproductive technologies, also known as "new" reproductive technologies are under debate, but the most commonly mentioned include insemination by sperm donor, in vitro fertilization, surrogacy and cloning. I discuss components of this discourse that have particular relevance to an anthropological

perspective and identify underlying concepts on which the discourse is based. I then describe fertility clinic websites as public documents that are part of this public discourse. Finally, I look at fertility clinics as entrepreneurs and the websites as exemplifying entrepreneurial activity to explain the particular ways in which fertility clinic websites represent reproductive technologies.

What I refer to as the public discourse is the representation of reproductive technologies in text and image that appears widely in Canadian publicly accessible print and electronic newspapers, magazines, advertisements and brochures, and circulates in government policy debates, legislation and committee reports. The public discourse reflects many different tensions and conflicts surrounding reproduction and reproductive technologies, and includes perspectives from infertility patients and their families, gamete donors and surrogates, physicians and health care professionals, fertility clinic administrators, government officials, researchers and academics, gay and lesbian advocacy groups and socially conservative organizations. I use the concept of discourse in the sense that language is social practice (Fairclough 1989). Specifically, discourse is "a particular knowledge about the world which shapes how the world is understood and how things are done in it" (Rose 2001:136). The public discourse sets the discursive space in which we are supposed to think about, understand and resolve these issues: it makes it seem as if this is how all or most Canadians are talking about reproductive technologies. Lutz and Collins (1993) in their discussion of *National Geographic* describe a similar scenario in which the magazine exists in a complex system of artifacts and communication devices including newspapers, magazines, television news programs,

history textbooks and films which convey a limited universe of ideas about the relationship between the Western and non-Western world.

Health Canada has described reproductive technologies as an issue involving complex legal, medical and ethical questions which exist in a frequently changing landscape (Times-Colonist 2000). The difficulties encountered by Health Canada as they attempted to comprehend the role and impact of reproductive technologies during the eleven-year period between the publication of the Royal Commission Report on New Reproductive Technologies in 1993 and the enactment of the Assisted Human Reproduction Act in 2004 illustrates that Canadians engaging these technologies do so through conflicting and divergent narratives (Hudson 1997).

The Royal Commission on New Reproductive Technologies was struck in October 1989 with a mandate to examine reproductive technologies in terms of scientific/medical developments both extant and potential; the impact of such technologies on society; the implications of ethics, legalities, economics and health on such considerations; and direction for public policy. Among many topics, the Royal Commission considered issues such as ownership of embryos, parental rights and payment for gamete donation and surrogacy. The Commissioners identified an urgent need for regulation to prevent unethical use of knowledge and to protect the interests of individuals and society as a whole (Proceed With Care 1993). Among the recommendations of their November 1993 report were the prohibition, with criminal sanctions, of sale of gametes and embryos, egg retrieval exclusively for the purpose of

donation, designating donated eggs to a named recipient and paying for surrogacy arrangements (Proceed With Care 1993). The Assisted Human Reproduction Act (2004) includes many of the Commission's recommendations including the prohibition of payment for gametes, embryos and surrogacy. Recent public debate over the federal appointment of board members responsible for approving regulations required under the Assisted Human Reproduction Act has focused on the socially conservative views of many board members as well as the absence of any fertility specialists or infertility patients from the panel (Alphonso 2006). This exemplifies the continued struggle over meaning, interpretation, access and control of reproductive technologies.

In addition to government reports and legislation, newspaper articles often raise the alarm about reproductive technologies, suggesting we are playing God and opening a Pandora's box of social and ethical problems (Eichler 1998). These articles reveal public anxieties about technology and unpredictable social change (Franklin and Ragoné 1998; Roberts 1998). For example, the article "Birth of a Moral Dilemma" (Times-Colonist 1999a) describes American fashion models selling ova online and suggests the application of reproductive technology has outstripped our ability to answer accompanying ethical questions. Alternatively, "Free trade for surrogate mothers" (Selick 2001) discusses the increase of Americans using Canadian surrogates to take advantage of Canadian health care plans.

A very different discussion of reproductive technologies is found in public documents prepared for and by infertility patients. Newsletters, support groups and

resource websites in both Canada and the United States describe stress and frustrations associated with infertility as well as perseverance and determination to not give up on the dream of having children and becoming parents (RESOLVE 2004; Organon 2007). Reproductive technologies are presented as tools to build families (RESOLVE 2004) and in these contexts technology is not described as a threat to nature but rather as a means to help nature. For example, one fertility resource websites states that "there are a variety of medications that give nature a little nudge" (Organon 2007).

Yet another stream in the public discourse represents same sex couples and their experience of access and barriers to reproductive technologies (Arnup 1991; Werner 2002) as well as recognition of parenthood for both partners in same sex relationships (Austen 2007; Hanes 2007; National Fertility Law Center 2007; RainbowBabies.com 2007). Recently the Ontario Court of Appeal awarded a non-biological lesbian co-mother the legal status of mother, making her child the first in Canada to legally have three parents: the biological mother, the non-biological mother and the biological father (Hanes 2007). The Court found that Ontario family law did not adequately reflect current social and reproductive realities (Austen 2007). In this case the biological father is also a social father rather than a sperm donor and all three parents support the legal ruling. Social parenthood refers to parent/child relationships based on nurturance rather than a (perceived) physical connection, such as a lesbian co-mother. In kinship studies distinctions have been made between *pater* and *mater* (to denote social parenthood), and *genitor* and *genitrix* (to denote biological parenthood) (Keesing 1975). Social conservative groups including the Institute of Marriage and Family in Canada and the

Christian Legal Fellowship oppose the ruling as an attack on traditional values and re-definition of “family”, and assert that social policy should instead be determined by politicians (Austen 2007; Hanes 2007).

Media thus sets the discursive space for the public to engage and resolve these issues. One theme in this discourse is a sense of risk posed by technologies that are represented as out of control: specifically, risk to the family and society. For example, the Royal Commission’s ethical framework focused on families and communities, including the potential impact of reproductive technologies on what Health Canada describes as the fundamental and traditional nature of motherhood and family (Chenier 1994; Hudson 1997). Societal risks are framed as risks to the health care system and taxpayers, and as risks to Canadian values. As noted above in the newspaper article “Free trade for surrogate mothers”, the risk of cross-border surrogacy arrangements is perceived as a risk to the Canadian health care system, not to the Canadian surrogates. Another example is found in the article “Too many twins: ‘Epidemic’ of multiple births straining health-care system” (Blackwell 2000). This article refers to a statement by the Society of Obstetricians and Gynecologists that Canada’s health care system is straining under an epidemic of multiple births caused by fertility treatments. The article notes that while fertility clinic patients pay for fertility treatments such as in vitro fertilization, once the babies are born the expense of caring for multiple babies with their increased chances of complications and premature births is absorbed by the health care system and ultimately the taxpayer. The remedies proposed by Health Canada through the Royal Commission on New Reproductive Technologies and the Assisted Human Reproduction

Act are designed to protect and reflect Canadian values (Baird 1997; Hudson 1997); however, these values are not clearly articulated or substantiated. For example, Dr. Patricia Baird, Chair of the Royal Commission on New Reproductive Technologies, has stated that surrogacy is not compatible with Canadian values (Times-Colonist 1999b). Others disagree, arguing that:

> the use of criminal law for moral symbolism has always been controversial but it is bound to be especially so if there is severe uncertainty concerning the symbols that we might wish to entrench in the criminal law. It is not clear, for example, that paid surrogacy is a self-evident evil in Canadian society.
> (Healy 1997:68)

The Royal Commission's final report has been criticized for recommending criminal law as a medium for the expression and enforcement of public morality (Healy 1997; Young 1997). Health Canada and the Royal Commission have also been criticized for pursuing an objective of societal consensus on these issues within an acknowledged plurality of opinion (Hudson 1997).

This construction of risk to family and society is based on an understanding of nature, family and Canadian values as fixed reference points, rather than as products of a particular history. The anthropological perspective I describe later in this chapter acknowledges the importance of historical specificity; that is, that meanings of conceptual categories such as nature, family, reproduction and reproductive technologies can only be understood in culturally-specific, local and diverse contexts (Rapp 1997; Franklin and Ragoné 1998; Inhorn 2004). In contrast, the public discourse often represents nature, family and values as fixed universal categories, using descriptors such as *natural*, *fundamental* and *traditional*. The significance of using the family and society

as units of analysis is that risk is assessed in terms of the public good. The dominant public discourse engages reproductive technologies in terms of compatibility with Canadian values, and so dictates a particular set of values as normative. Questions raised by the reproductive technologies then become part of a moral discourse; since family, nature and values are fixed and universal, dilemmas raised by reproductive technologies must be ethical dilemmas, not dilemmas of meaning. These ethical dilemmas are thus to be remedied through medical ethics regulation and legislation.

The conceptual categories of nature, family and values are closely linked, and merge into an overarching narrative of risk to the nuclear family. The nuclear family is identified as a natural unit, and technology that poses challenges to understandings of membership in a nuclear family is in conflict with values. I will return to a discussion of the overarching narrative of the nuclear family in the final chapter and discuss how this theme is mobilized in text and image on fertility clinic websites.

When I turned to fertility clinic websites I found a very different presentation of nature, family and technology than the sense of risk I have described. Whereas in one stream of the public discourse nature is threatened by technology that is out of control, on fertility clinic websites it is nature that is out of control and must be managed by technology. For example, fertility clinic websites describe how women's bodies must be controlled by technology, including "suppression" (Royal University Hospital 2002) of the natural menstrual cycle and the "prevention" (The Advanced Fertility Institute 2001) of a woman's hormones from interfering with infertility treatments. Moreover, rather

than posing a risk to family, technology enables the creation of families and individuals: babies and parents. For example, the slogan on one fertility clinic website is "helping couples become families" (The Fertility Institutes 2001). Additionally, although nature and family feature prominently as themes on fertility clinic websites, as they do in other streams in the public discourse, they are not fixed universal categories. The conceptual categories of nature and family are flexible, and may be interpreted differently in various contexts. For example, what is natural can be located in participants' motivations, such as one website which describes sex selection as a "quest of couples for as far back as recorded history allows" (The Fertility Institutes 2001), or it can be located in specific steps of a technological intervention. One clinic emphasizes that "it is important to note that in routine IVF, fertilization is achieved by natural means. Although the laboratory conditions are carefully monitored to mimic the human body, fertilization itself is achieved without any other intervention" (The Advanced Fertility Institute 2001).

This discrepancy in the presentation of the intersection of nature, technology and reproduction led me to become interested in how nature and kinship are mobilized on fertility clinic websites. I have chosen to focus on fertility clinics because, as I will describe next in the literature review, the anthropological literature that explores the emergence of new reproductive technologies includes clinic studies focusing on the voices of participating women and men, rather than on the voices of the fertility clinics. I have chosen websites, specifically, because they are one of the public faces of the fertility clinics. The websites are an extension of the fertility clinics to the extent that they contain information the fertility clinic wants to make public. Information on fertility

clinic websites is selectively presented and managed and functions as advertisements to potential participants. As well as being a public space for the fertility clinics, the websites can offer a private space for potential participants to anonymously explore practices and technologies they may regard as threatening, personal, emotionally-charged and deeply complex (Markham 2004). My examination of the public discourse and a preliminary viewing of several fertility clinic websites suggests there is significant cross-border participation between Canada and the United States, as well as other nations. For example, I have described above how newspaper articles have raised concerns about costs to the Canadian health care system from American couples seeking Canadian surrogates. Additionally, fertility clinic websites often list translation services, fee schedules for international clients and partnerships with fertility clinics in other countries.

I have chosen to focus on representations of kinship and nature on these websites in order to investigate the mobilization of these concepts as cultural practice. I describe in the literature review that follows how participants strategically use metaphors to locate nature in human bodies, in technologies and in relationships. I chose to continue in this trajectory by investigating how fertility clinics mobilize nature and strategically use different metaphors to present a particular experience of the reproductive technologies they deliver. Kinship is commonly understood as inalienable and based on the laws of nature, yet, as I discuss next in the literature review, when kinship is strategically mobilized in specific circumstances to advance personal goals, kinship claims can be understood as cultural practice.

Fertility clinics endeavour to represent their services in a particular way within a complex and fluctuating environment of ideas about kinship, nature and reproduction. The fertility clinic websites draw from culturally meaningful narratives to provide convincing and self-evident explanations for the meaning of technologies and procedures. Since the practice of reproductive technologies introduces other participants (other than the male and female clients or "couple") into the reproductive exercise, their presence must be explained without challenging existing kinship ideologies. Egg donors, sperm donors and surrogate mothers, for example, must be accommodated in a way that does not disrupt or threaten the parenthood claims of the potential clients.

1.2 Literature Review

My thesis research articulates with two bodies of anthropological literature—the anthropology of reproduction and the anthropology of kinship. In this literature review I do not attempt a comprehensive review of either domain. Instead, I briefly discuss the anthropological study of kinship focusing on significant shifts in how kinship has been conceptualized within anthropology. I then summarize anthropological work investigating participants' clinical encounters with reproductive technologies, particularly assisted conception technology.

The anthropological study of reproduction is a long standing and defining aspect of the discipline. As described by Franklin and Ragoné, "an important genealogy of

modern anthropology can readily be traced through its relationship to a core set of ideas related to reproduction, or 'the facts of life'" (1998:2). Late 19th and early 20th century models of human social organization privileged what were presumed to be universal, biological and asocial "facts" of mother-child bond, male and female sex differences and the importance of blood ties (Franklin and McKinnon 2001). Kinship and marriage based on the evolution of human male-female pair-bonding were represented as immutable facts of nature (Schneider 1972; Keesing 1975; Scheffler 1991). This biological model of the 'facts of life' and privileging of the natural operated as a fixed point of reference from which anthropologists theorized about kinship and conception in human evolution and cross-culturally (Franklin 1997a; Howell 2003). Schneider (1972) and others (Strathern 1992; Franklin 1997a) describe this ethnocentric view of kinship as essentially a European folk model. A great volume of material was created about reproduction in cross-cultural perspective, but the androcentrism, ethnocentrism and biological determinism exemplified in these texts placed limits on analysis (Franklin 1997a; Franklin and Ragoné 1998).

Anthropology of the 1970s sparked a reevaluation of the exclusion of women's activities from the ethnographic record and a critique of social models responsible for this exclusion. Since then the false dichotomization of social and natural facts and assumptions about reproduction as universal and ahistorical have been destabilized in favour of reproduction as historically specific cultural practice (Franklin 1995, 1998; Ginsburg and Rapp 1995; Rayna Rapp 1997; Franklin and Ragoné 1998; Teman 2003). Kinship came to be described by some as an idiom in which political interests are

advanced and economic goals are maximized (Keesing 1975). When statements about kinship rules are made with reference to specific contexts or circumstances (rather than idealizations) these statements can be seen as strategic acts; that is, as cultural practice (Leach 1961; Barth 1966; Keesing 1975). Contemporary anthropological approaches "seek to situate changing cultural definitions of reproduction in the context of their lived articulation" and "to ground accounts of reproductive techniques as *cultural practice*" (Franklin and Ragoné 1998:5). In contrast with the public discourse which speculates on the impact of new reproductive technologies on Canadian families, an anthropological approach rejects technological determinism and instead focuses on the ways social power shapes how technology is understood and practiced (Ginsburg and Rapp 1995).

The breakdown of the nature/culture dichotomy as an explanatory framework for social processes has led to its re-invention so that instead of culture coming after nature as it did in early views of kinship, culture now is understood to instruct nature (Franklin 2003). Rabinow (1996) proposed a model of *inversion* to account for how the social becomes the model for the natural. As explained by Franklin, inversion refers to the idea that "nature will be modeled on culture understood as practice. Nature will be known and remade through technique, just as culture becomes natural" (Franklin 2003:67). This amounts to the inscribing of social imagery on representations of nature, then reimporting the same imagery as natural explanations for social phenomena (Martin 1991). Two examples illustrate this process in a way that is particularly relevant for this thesis.

One, in North America, cultural narratives such as the act of sex, giving birth and more recently the notion of transmitting genetic material, are considered to be bases for kinship. This reproductive model contains assumptions about the connection between nature and social constructions such that the domain of nature is seen conceptually as a prior condition for the social (Strathern 1992; Rabinow 1996). However, "in the concept of biological relatives or in the idea of kinship as the social construction of natural facts, the biology and the natural facts are taken for granted. Euro-Americans do not ordinarily dispute what these are" (Strathern 1992:16). For example, Darwin used ideas of relatedness among human beings to depict relatedness among species. However, relatedness among species has been naturalized and used to describe and dictate relatedness among people so that kinship is understood as a reflection of nature (Strathern 1992).

Two, because science is identified with truthfulness and empirical reality, the metaphorical nature of much of modern science goes unrecognized (Stepan 1996) so that metaphors in science naturalize our social conventions about gender and other constructions of difference. For example, according to Martin, "the picture of the egg and sperm drawn in popular as well as scientific accounts of reproductive biology relies on stereotypes central to our cultural definitions of male and female" (1991:485). This reveals the gender stereotypes hidden within the scientific language of biology. Writing stereotypes in at the level of the cell makes them seem so natural as to be incontestable (Martin 1991). Thus "the degree of metaphorical content…, the extent to which differences between egg and sperm are emphasized, and the parallels between cultural

stereotypes of male and female behavior and the character of egg and sperm all point to this conclusion" that the 'facts' of biology may be constructed in cultural terms (Martin 1991:491-2).

The process of inversion extends to genes. Franklin (2003:71) describes a "genetic gap" between highly technical information and meaningful knowledge which is socially defined and acted upon. This gap occurs "throughout the process of technologically producing DNA *as a mechanism amenable to social instruction*" (Franklin 2003:83). The meaning of DNA is then strategically mobilized to achieve particular social goals (Franklin 2003), such as locating kinship in certain biological relationships. This example demonstrates that cultural training is how we learn what meanings to attach to certain events and how to make sense of them. Culturally-specific kinship knowledge interfaces with reproductive technologies to determine relationships that can be created, altered and extinguished. Donna Haraway's definition of kinship exemplifies this point clearly: "A technology for producing the material and semiotic effects of natural relationship, of shared kind" (1997:53 cited in Franklin and McKinnon 2001:15).

The theoretical re-invention of the nature/culture dichotomy described above reveals nature as a shifting classificatory category. Ideas of nature signify with fluidity, contradictoriness and power and what is generated as a result of this are new possibilities for social practice (Rapp 1999; Franklin 2003). For example,

> what is 'conceivable' about amniocentesis testing, or genetic screening for breast cancer, or paternity testing, is already built into the conception of kinship as a

> hybrid of individual and society, of natural and cultural facts. The dilemma of 'what to make of our genes' derives from the assumption that they make us who we are to begin with.
> (Franklin 2003:74)

In other words, genetics defines individuals as holding their own potential and their own limitations within themselves (Rapp 1991). Inheritance of genetic diseases, for example, influences understandings of family and kinship, and both reflects and conflicts with broader current sociocultural processes (Finkler et al 2000).

Another example is found in Thompson's (2005) account of egg donation in which a female infertility patient chooses a known egg donor of the same ethnic background on the assumption that genes code for ethnicity. Thompson reports that "as in so many cases of contemporary biomedicine, genes have social categories built into them without which they would not make sense or be relevant. This is a reversal of what is often presumed to be the unidirectionality of genealogy" (2005:157). Since the new genetics can be seen as "simply another occasion to visit the 'old' problem of what kinship is 'all about'" (Franklin 2003) there is a need to investigate kinship in terms of the multiple and diverse ways these connections are being formed and what kinds of things are being connected (Strathern 1992; Franklin 2003).

One trajectory of inquiry that has developed within the context of reproductive technologies as cultural practice is the ethnography of pregnancy, childbirth and fertility and infertility management. Ethnographies of pregnancy and childbirth have explored the medicalization of pregnancy and childbirth particularly in Canada and the United

States arguing that the ideas and behaviour of pregnant women are increasingly subjected to technological surveillance and social control (Russell 1997; Cartwright 1998; Dumit and Davis-Floyd 1998). Anthropologists have explored the implementation and routinization of diagnostic technologies such as amniocentesis (Rapp 1991), ultrasound (Mitchell and Georges 1998, 2000; Taylor 1998; Morgan 2003; Harris et al 2007), and electronic fetal monitoring (Cartwright 1998). A recurring finding in these studies is that the use of these technologies in monitoring pregnancy is increasingly viewed as expected, normal, and even as "natural." Central to this normalization of technology in reproduction is the idea of risk.

Reproductive choices are presented as individual risk management strategies yet the more technological options that exist, the less possible it becomes to avoid choosing technology altogether (Rothman 1985; Strathern 1992; Comacchio 1997; Dumit and Davis-Floyd 1998). For example, Rothman's (1986) sociological study of amniocentesis describes how some women find this technology to be an oppressive weight. Because of the nature of the test, results are not available until the fifth month of pregnancy. If test results are ambiguous or uncertain, a woman carries the burden of decision-making. Strathern's (1992) model of prescriptive consumerism holds that one's choices, and in fact the act of choosing, are circumscribed. This model holds that if an individual has the opportunity to enhance herself she should do so. Individuals feel the pressure of a consumer ideology which dictates they must be fulfilled in certain ways. Franklin and McNeil (1988) say this forces women to find individual solutions to social problems. They report that:

> media representations continually construct an image of these new technologies as offering greater choice and control. This glosses over the many unknown and/or detrimental potentials of the technology and makes it difficult to challenge the progressive and benevolent image of technological innovation.
> (Franklin and McNeil 1988:554)

Additionally, since health is a commodity in capitalist societies (Comacchio 1997), individual choices and broader patterns of class behaviour (such as women choosing to be surrogates and infertility patients choosing to hire surrogates) must be understood as deriving from existing inequalities (Comacchio 1997; Franklin and McNeil 1998). Health is affected "as much by the social identities and roles inscribed in categories of class, race, gender and age as it is by individual choice" (Comacchio 1997:311).

Women and men participating in assisted conception technologies identify nature and culture/technology in their experiences, locating it in human bodies and reproductive technologies. Lewin (1995) describes how lesbian mothers utilizing artificial insemination with donor sperm naturalize the technology to make their own maternity more natural. Surrogate mothers and couples seeking the services of a surrogate may naturalize their experience by comparing it to biblical stories or strategies employed by "primitive", and therefore more natural, cultures (Roberts 1998). Additionally in surrogacy arrangements, women may minimize the distance between themselves and the fetus by participating in signifiers of motherhood: attending prenatal classes and medical appointments with the surrogate mother and being present at the birth (Roberts 1998). Teman (2003) also reports on surrogates' strategic use of metaphors to control the location of nature and maternity, ensuring that "nature" complies with their reproductive experience.

Assisted conception participants also strategically mobilize different metaphors to construct roles and kinship statuses for themselves and others, drawing upon different kinship models to make technologically assisted kinship more natural (Teman 2003). For example, Cussins (1998b and Thompson 2005) has compared the way participants in IVF and surrogacy arrangements use the same technology to naturalize contradictory kinship claims according to different agendae. Whereas IVF patients using donor eggs claimed maternity through gestation, potential parents in surrogacy arrangements negated the importance of gestation in favour of kinship based on a genetic model. Howell's (2001) analysis of transnational adoption suggests that adoptive families also employ a dynamic model of kinship in that they alternately draw upon the constitutive roles of biology and sociality, foregrounding one at the expense of the other in different contexts.

Ragoné (1994; 2000) describes how with genetic surrogacy, in which the surrogate contributes the egg which is fertilized by the male client's sperm, both the surrogate and the female client emphasized the role of social motherhood. In contrast, with gestational surrogacy in which a woman gestates an embryo produced by the clients' gametes the role of genetics is emphasized. Gestational surrogacy is also performed with embryos from donated gametes. According to Ragoné (2000) participants prefer this option over genetic surrogacy because they believe that in a custody battle the American courts would be less likely to award custody to a gestational surrogate with no genetic link to the baby. Surrogates as well articulate that they prefer gestational surrogacy over genetic surrogacy as they are not comfortable contributing their own egg. Ragoné (1994)

also describes how female clients emphasize their social motherhood, and explain their desire and intent as a kind of conception "in the heart" (Ragoné 1994:126) rather than a physical conception. Ragoné reports that by "focusing on the mythical conception or on the amount of love they are able to bestow upon the child, adoptive mothers [female clients] are able to view their participation in the process as essential" (1994:127).

Ragoné (1994) also describes how surrogates and couples alternately emphasize and deemphasize aspects of surrogacy that are most consistent with North American kinship ideology. In genetic surrogacy, for example, whereas genetic relatedness is deemphasized during insemination and gestation to minimize the relationship between the male client and the surrogate, this genetic relationship reasserts itself following the birth of the child so that the child's genetic relationship to the father is seen as an advantage of the process. Potential parents and surrogates may also employ gift imagery in which the surrogate donates their gestational abilities for reasons of altruism or the metaphor of the surrogate as a vessel (Corea 1985; Ragoné 1998; Roberts 1998). Thus participants in reproductive technologies, whether surrogates, egg donors, or infertile women and men, may draw from multiple metaphors to conceptualize their encounter with reproductive technologies (Greil 2002).

Descriptions of success and failure feature prominently in many participants' accounts of infertility treatments (Williams 1988; Franklin 1997a). Franklin's (1997a) discussion of women's descriptions of their encounters with IVF are permeated by a sense of progress and failure. She describes how IVF is presented as a series of steps

through which a woman or couple progresses. Contrasted against the woman's hopes and desires and her determination to progress successfully is her sense of failure as the desired progress is not achieved. Failure to progress is seen as a series of personal failures, such as the failure to produce enough eggs.

One of the emphases in the research described above is that in an anthropological approach that acknowledges historical and cultural specificity, questions about the meanings of reproductive technology necessitate local, diverse, and unstable answers (Rapp 1997; Inhorn 2004). For example, Inhorn's (2004) study of egg donation in Lebanon emphasizes the importance of local cultural context. Inhorn describes how new marital scenarios are beginning to emerge in which, because Islam allows polygyny, egg donation is being conceptually conflated with polygyny, so that the egg donor becomes like a second wife to the husband. Egg donation may even be accompanied by a temporary marriage among some Shi'ite groups. Franklin and Ragoné (1998) describe how the intensification of reproductive intervention has contributed to increasing cultural contestation about the foundational meanings connected to reproduction, nature, life, and humanity. They also identify specific cultural contexts such as the way that professional surrogacy is understood through culturally-specific established idioms.

Anthropological literature that explores kinship and the emergence of new reproductive technologies includes clinic studies that focus on the voices of participating men and women. This literature reveals dynamic models of kinship in which strategic naturalization and socialization are used to locate 'nature', in bodies, in technologies, and

in relationships (Thompson 2005). I am interested in how fertility clinics mobilize nature and strategically use different metaphors to present a particular experience of the reproductive technologies they deliver. Specifically, I am interested in how ideas about reproduction are mobilized on fertility clinic websites and what is being said about the parent/child relationship, the client/physician relationship, and the relationship of adults to their gametes and embryos.

1.3 Research Questions and Theoretical Framework

I draw upon three key elements of an anthropological perspective to identify research questions and inform analysis. This anthropological perspective acknowledges the changing cultural constructions of reproduction and specifically the redefinition of reproduction occurring in the context of reproductive technologies. Firstly, the conceptual categories of "nature" and "kinship" are products of particular histories, social relations, and cultural meanings. These concepts should be understood as symbolic cultural expressions that are shaped and reshaped by cultural endeavours (Franklin 1997a). For example, as discussed in the literature review, kinship is understood as biological relationships that follow laws of nature, or the facts of life (Keesing 1975; Strathern 1992; Franklin 1997a). Within this biological framework kinship and reproduction are understood as governed by immutable facts and are therefore positioned as universal and ahistoric concepts (Franklin and Ragoné 1998). Lutz and Collins (1993) report that nature and modernity are often seen as mutually exclusive in that

technological advancement entails alienation from nature. Competing paradigms of modern technology solving problems of the body versus the "naturalness" of having a baby means that fertility clinics must mobilize particular understandings of nature to bridge this gap. The defamiliarizing impact of reproductive technologies displaces these understandings of reproduction as exclusively natural and biological (Franklin and Ragoné 1998) and means that fertility clinics must re-mobilize concepts of nature to renaturalize technologically-mediated reproduction.

Secondly, meaning and technology are co-produced; that is, technologies are made meaningful by the people using them. As discussed above, participants, including infertility patients, physicians, gamete donors, and surrogates strategically mobilize different metaphors to construct roles and statuses for themselves and others. For example, the significance of genetics in North American kinship may be alternatively emphasized and de-emphasized so that participants in surrogacy (women, men, surrogates, and physicians) as well as technologies and procedures are understood in a way that is consistent with North American kinship knowledge. Not only the significance of genetics but also the meaning of genetics is culturally negotiated. As described above in the literature review, Franklin's (2003:71) "genetic gap" between technical information and culturally meaningful knowledge creates a space where the meaning of DNA is strategically mobilized to locate kinship in certain biological relationships.

Thirdly, reproduction is a site of social stratification. Reproduction has come to be seen as a potent site of political contestation and resistance and anthropological analysis of reproductive technologies includes the role of power and knowledge in reproduction (Franklin and Ragoné 1998). The practice of reproductive technologies is a site not just of biological relationships between women, men, and children but also of social and economic relationships (Comacchio 1997) so that frameworks for understanding reproductive technologies are identified within relations of power. Gender stereotypes, for example, are encoded in the biology and control of women's bodies. Martin (1991) discusses how male and female gender stereotypes are ascribed to the behaviour of gametes so that accounts of fertilization read like conventional courtship and marriage with the sperm as active pursuer and the egg as passive object.

My primary research question is how are ideas about reproduction, in particular nature and kinship, mobilized on fertility clinic websites? To address this larger question I will examine textual and visual representations of nature and kinship as they appear on websites. The way that nature and kinship are mobilized on fertility clinic websites demonstrates how these concepts are products of particular histories and how they are shaped by cultural practice. I will identify culturally specific bases for kinship including concepts invoked to establish kinship in situations that could create tension or disrupt conventional understandings of kinship. Since reproduction in these contexts involves technologies and multiple participants I am interested in how the application of reproductive technologies as a cultural endeavour affects understandings of kinship. Similarly, I am interested in how the introduction of technologies and multiple

participants affects understandings of nature. Nature connotes immutable laws, facts, and essential ways of being as well as the conventional birds and bees conception story of the heterosexual procreative sex act. I will examine how the concept of nature is mobilized when the conventional conception story is manipulated in reproductive technology contexts.

Additionally I will identify what is being said about the parent/child, adult/gamete, adult/embryo, and participant/physician relationships. I have chosen to examine these relationships because kinship is manifested on fertility clinic websites when relatedness among participants is asserted. By relationships I mean the kinship status of participants in the reproductive technologies. This research question speaks to the ways that meaning and technology are co-produced. The adult/gamete, participant/physician, and other relationships are articulated in the context of specific technologies so that tools and procedures acquire meaning in the way that they are understood to affect these relationships.

Finally I will identify how these meanings and relationships are shaped by existing social hierarchies of ethnicity/race, ability, sexuality, and gender. Social hierarchies are embedded within conceptualizations and practices of kinship. For example, culturally specific notions of gender stereotypes are represented as immutable facts of nature when it comes to kinship, marriage, family, and reproduction (Martin 1991; Scheffler 1991). “Facts” such as differences in male and female body size and physical strength, the physical handicaps of pregnant women, prolonged dependence of

children, and dependence of women and children on a pair-bonded male seemingly account for the nuclear family as a universal human family unit within which women and children play a subordinate role to an adult male (Scheffler 1991). Such contentions naturalize gender stereotypes and gender inequalities. According to Achilles (1990) since reproduction is a site of social stratification the medicalization of women's reproductive experience is a furthering of existing social processes. Therefore asking questions about representations of gender, ethnicity, and ability on fertility clinic websites is a way of identifying existing social hierarchies. Achilles reports that:

> the medicalization of women's reproductive experience is an ongoing social process. The introduction of artificial reproduction technologies, therefore, is not a bold leap into Huxley's *Brave New World*. Rather, it is a significant furthering of already existing social trends…In short, these new techniques may precipitate a host of hybrid social consequences which reflect, in a heightened manner, already existing social forces. (Achilles 1990:298)

My research questions can be summarized as follows: (1) how are ideas about reproduction, in particular nature and kinship, mobilized on fertility clinic websites?; (2) what is being said about the parent/child, adult/gamete, adult/embryo, and participant/physician relationships?; and, (3) how are these meanings and relationships shaped by existing social hierarchies of ethnicity/race, ability, sexuality, and gender?

In order to answer these questions I identified the key linguistic and visual symbols that fertility clinics select for their websites from the broad and complex set of culturally available meanings. I also identified the entrepreneurial use of these symbols to present a particular experience of reproductive technologies and manage social relations. These research questions are worthwhile because the cultural implications of

reproductive technologies cannot be evaluated outside medical and legal models until the discourses of the fertility clinics that provide and act as gatekeepers for these technologies are addressed (Rapp 1991; Franklin 1997b). Further, these accounts must be grounded as cultural practice in sites where social power shapes understandings of reproduction (Ginsburg and Rapp 1995; Franklin and Ragoné 1998).

I look at fertility clinic websites as one type of representation within the larger contested space, or discourse, on reproductive technologies. The websites are an extension of the fertility clinics to the extent that they contain information the fertility clinics want to make public. Information on fertility clinic websites is selectively presented and managed, and functions as advertisements to potential participants. The text and images which make up the websites are intentional and strategic: fertility clinics want to put forth a particular view of their service. This function of the websites strengthens and unifies the data.

The disconnect between the public discourse and the discourse of reproductive technology entrepreneurs on fertility clinic websites is not just about language: it has social and semantic effects and shapes understandings. Reproductive technologies are a site of cultural transformation and reinterpretation of what are frequently described as natural, biological facts. Fertility clinics act as entrepreneurs, shaping understandings of relationships, experiences, and meanings by mobilizing particular constructions of nature and kinship. I look at fertility clinics as entrepreneurs as described by Bee (1974) in that they have a cultural brokerage function, shaping and organizing alternate meanings of

reproductive technologies, nature, and kinship other than those dominant in media and government policy documents. Reproductive technologies and the participants in the technologies acquire meaning by the frameworks of interpretation we bring to them (Hall 1997). These meanings then regulate and shape cultural practice. I suggest that fertility clinics have an entrepreneurial role in that their websites are intended to offer particular accounts of reproductive technologies, nature, and kinship, and in so doing shape how reproductive technologies are viewed. The text and images on fertility clinic websites are socially created and culturally constituted discourse.

Discourse analysis is an approach concerned with the politics of meaning, in which meaning, representation, and culture are understood as constitutive; that is, discursive practice is a manifestation of shared culture and a site from which culture emerges (Hall 1997; Blommaert and Bulcaen 2000; Bernard 2002). In short, discourse is social practice. Hall (1997) reports that objects, people, and events acquire meaning by the frameworks of interpretation we bring to them, and that these meanings then regulate and organize social practice. Therefore individuals, institutions, entrepreneurs and cultural brokers seek to shape these frameworks of understanding in order to regulate social practice and establish normative behaviour. I discuss the entrepreneurial role of fertility clinics further in Chapter Three. Discourse analysis also emphasizes historical specificity. In contrast with the public discourse I have described in which conceptual categories such as nature and family are discussed as fixed universals, discourse analysis addresses how particular representations operate in specific historical situations (Hall 1997). Of particular relevance for this research project is the way that historically

specific understandings become invisible once embedded in a discourse; in other words a discourse can naturalize a particular way of perceiving the world (Hanks 1989). Social facts are biologized and embedded in existing relationships of power, such as those found in science and medicine (Keller 2001).

In Rose's discussion of discourse analysis she notes that Foucault described particular discourses as powerful because of two qualities: they are "located in socially powerful institutions" and their discourses "claim absolute truth" (Rose 2001:138). Further, this intersection of social power and knowledge sets the stage for the construction of claims to truth (Rose 2001). Foucault refers to this concept as a regime of truth: an explanation or specific view constructed as real or natural with legitimacy based on social power and knowledge claims (Rose 2001). Discourse is powerful because it reproduces social power (Rose 2001). Fertility clinic websites exemplify this process in that they reproduce existing social hierarchies. The information presented on the websites is not neutral but is bound up in existing relations of power (Martin 1991). For example, conception stories and gendering seem to confirm their naturalness and claims to truth, and to delegitimize alternate readings on reproduction. Since discourses are articulated through both text and visual images discourse analysis is a theoretical framework equipped to analyze the texts and images on fertility clinic websites. Discourse analysis also complements the key features of an anthropological approach that I described earlier in this chapter.

In the next chapter I outline my methodology including the use of websites, sampling procedures, and data collection. In Chapter Three I situate fertility clinics as entrepreneurs and describe the information presented on fertility clinic websites. In Chapters 4 and 5 I describe the relationships among participants in reproductive technologies and employ the concept of socio-technical networks to demonstrate how technology must be understood within the context of the social arrangements in which it is used. Finally in Chapter Six I discuss the overarching narrative of the nuclear family and the supporting themes mobilized on fertility clinic websites to support this framework.

CHAPTER TWO:

METHODS

In this chapter I describe how I look at fertility clinic websites as public documents situated in a virtual field. I describe my sampling process and characterize the sample in terms of organizational structure, geographic location, and population served. I then describe my data collection process including the development of a coding scheme, identification of themes, and analysis.

2.1 Websites

New technology has effected a re-spatialization of culture in which cultural dimensions of reproduction can be examined not only through participant observation at local sites but also through the rapidly proliferating and globally circulating texts, images, and sounds of popular media and the internet (Franklin and Ragoné 1998). In my study of fertility clinic websites, I approach the internet as a cultural artifact, rather than as a culture (Markham 2004). As a cultural artifact, I view websites as communication tools and forms of computer-mediated discursive practice (Markham 2005). I am not pursuing internet studies or dealing with the methodological and communications challenges of communicating with informants via the internet.

In Chapter One I described how a discourse appearing in public documents such as government reports, legislation, newspapers, advertisements, and brochures sets the

discursive space for the public to engage reproductive technologies. Following Franklin and Ragoné (1998), I look at fertility clinic websites as public documents situated in the virtual space of the internet enabling me to examine clinic discourse (including both text and image) on reproductive technologies. By discourse I mean the manifestation of shared culture, or cultural practice, by which objects, people, and events acquire meaning by the frameworks of interpretation we bring to them (Hall 1997; Blommaert and Bulcaen 2000; Bernard 2002).

Rose's (2001) critical visual methodology is useful in establishing how I have conceptualized and analyzed the websites as sites of meaning production. While she developed this methodology for visual images specifically, the highly visual nature of clinic websites with their emphasis on aesthetics, images, and text in relation to images enables me to apply her approach to websites as a whole. Rose (2001) describes three sites where an image's meaning is constructed: the site of image production, the site of the image itself, and the site where it is viewed. My research focuses on the site of the image itself, in this case fertility clinic websites. Whereas the site of production (including fertility clinic personnel, webmasters, and designers) and the site of viewing (including prospective clients viewing the websites) are worthwhile areas to pursue, they are outside the scope of this project. I am not investigating the rationale which any one fertility clinic webdesigner might articulate as the basis for selecting particular website contents. Nor am I assessing how potential participants interpret or negotiate meanings while viewing websites.

That being said, I recognize that fertility clinic websites are a particular kind of public document. They are not merely sources of description or information disseminated for a disengaged or uninterested viewer. Rather, the websites are advertisements for the specific fertility clinics and as such, website authors invite specific ways of seeing the information on their websites based on assumptions about their prospective clients (Hine 1998; Rose 2001). Here the previously defined concept of "discourse" and the idea of websites as sites of discursive practice comes more fully into focus. The construction of a website is a discursive practice that constructs and perpetuates particular ways of understanding information (Markham 2005). Fertility clinic websites, then, are public sites of discourse through which clinics both attempt to attract potential clients and shape understandings of assisted conception technology. This is a key point. Not only do the websites draw upon broadly shared meanings in the representations of kinship, technology and nature, but they also seek to shape and influence those meanings. As I argue, they seek to establish and perpetuate regimes of truth about what is nature, kinship and technology. Due to its value for investigating both meaning at the site of an image and how images and text co-construct specific accounts of the social world, I employ what Rose (2001) would call a discourse analysis approach to analyzing the websites. I describe discourse analysis as it applies to my own project more fully in Section 2.3.

2.2 Fertility Clinic Website Sample

My research sample is drawn from North American fertility clinic websites operating in the English language. I chose to draw from both Canadian and American fertility clinic websites for my sample because when examining public documents (such as newspaper and magazine articles) that discuss reproductive technologies it was evident that "cross border shopping" was a theme and one of the alarms raised as a threat to Canadian values and Canadian families. This suggested to me that the practice of accessing fertility clinic services is not constrained by national borders. Additionally, although there are North American fertility clinic websites published in languages other than English (such as Spanish and French) I am not sufficiently fluent in a second language to make meaningful comparisons; moreover, because I investigate linguistic and visual symbols it is essential that the fertility clinic websites will be drawing from the same pool of culturally available meanings.

The research sample consists of a purposeful selection of cases for in-depth study. This sampling choice is appropriate to qualitative research that is designed to investigate social phenomena that are variable and context-laden (Willms and Johnson 1996). Ten Canadian and ten American fertility clinics comprise the sample for a total of twenty fertility clinics. The sample of fertility clinic websites was obtained online using the MSN Search engine. The American fertility clinics were obtained using the key words *fertility* and *clinic* in combination. The first ten American fertility clinics that appeared in the results were recorded and became the American component of the sample. Duplicate

hits were deleted as well as hits from closely associated institutions such as a satellite office of a fertility clinic already listed in the results. It was necessary to add the qualifier *Canadian* to the other two key words *fertility* and *clinic* to obtain enough hits for Canadian fertility clinics. Among the results was a fertility clinic directory compiled by the University of Manitoba Health Sciences Centre. This directory, combined with the hits for individual Canadian fertility clinics resulted in a list of thirty Canadian fertility clinics. Of these thirty fertility clinics, nineteen had websites. The four clinics operating completely or primarily in the French language were eliminated from the potential sample. Of the fifteen remaining websites, ten were randomly selected for the Canadian component of the sample. I was able to randomize the Canadian component of the sample because I had a population of potential sampling units from which to draw. However, I was unable to replicate this process for the American component of the sample because I did not have a population.

The ten fertility clinics comprising the Canadian sample represent 30% of the total number of fertility clinics I was able to identify in Canada at the time of sampling. Due to the proportionally large number of clinics operating in the United States, a sample representing a similar percentage of the total number of clinics is prohibitive and beyond the scope of this research project. There were 421 fertility clinics operating in the United States and Puerto Rico in 2001 at the time I sampled (Thompson 2005). For this reason the American component of the sample also numbers ten clinics.

The fertility clinics in the sample can be characterized according to three types of organizational structure: university, hospital, and private clinic. The fertility clinics identified as universities (10%) are medical schools or departments specializing in reproductive biology which are part of larger post-secondary institutions. Clinics identified as hospitals (20%) are units or departments offering obstetrical and gynecological services, including fertility services. Finally, private clinics (70%) are independent organizations although they may be affiliated with a university or hospital. All (100%) of the American fertility clinics in the sample are private clinics whereas the Canadian component of the sample is more evenly distributed, with 20% of Canadian fertility clinics identified as universities, 30% as hospitals, and 30% as private clinics. I did not attempt to replicate the Canadian institutional divisions in the American component of the sample because I did not intend to compare cases by organizational structure.

The fertility clinic sample is drawn from four Canadian provinces and nine American states. Forty percent of clinics in the sample have satellite offices located within the same city or region, and in one instance in another country. The catchment area, or population served by each fertility clinic, is difficult to determine and varies with each type of organizational structure. Fertility clinics located in hospitals, or in universities closely affiliated with hospitals, are more like to serve a geographically bounded population, whereas private clinics are more likely to accept national and international clients. Clientele may also be affected by local legislation that favours the prospective clients. For example, as of 1997 Newfoundland, Québec, and Yukon

Territory were the only Canadian jurisdictions with legislation specific to donor insemination, stating that sperm donors may not contest paternity (Baird 1997). In all other jurisdictions a donor, by establishing his genetic link, may contest the paternity of the social father (male client). Additionally, American states with surrogacy laws favouring the prospective (infertile) clients rather than the surrogate are more likely to have a national or international customer base. Sixty percent of the clinics sampled indicate international catchment areas by employing phrases such as "we welcome patients from around the world" in their opening statements and listing fee schedules for international clients.

2.3 Data Collection and Analysis

Data collection was designed to answer the research questions described in Chapter One, specifically: how are ideas about reproduction, in particular nature and kinship, mobilized on fertility clinic websites; what is being said about the parent/child, adult/gamete, adult/embryo, and participant physician relationships; and how do linguistic and visual symbols reproduce conventional stereotypes and stratification, including ethnicity/race, ability, sexuality, and gender. I downloaded material from each fertility clinic website including home pages, lists of services, glossaries, forms, and contact information, as well as diagrams, photographs, logos, and other visual images. All material available on the websites was collected, with the exception of material contained in links to other websites, although the links themselves were collected.

In order to answer the research questions I identified key linguistic and visual symbols that fertility clinics select for websites from the broad and complex set of culturally available meanings. I also identified how text and images on fertility clinic websites are used to present a particular experience of reproductive technologies and manage social relations. What I mean by key linguistic and visual symbols are culturally meaningful paradigms, stories, and metaphors. The fertility clinics mobilize ideas that already exist in the public consciousness but apply them in specific ways. This is part of their entrepreneurial role: the fertility clinics are not creating new symbols, they are using existing symbols and applying them in particular ways to shape understandings of the social world. Metaphors have organizing power to influence orientation to a subject matter, but the responsibility for successful application of the metaphor lies with the speaker/writer if s/he wants the listener/reader to understand or act in the way s/he intends (Scholtz 1988). This means that as authors, the fertility clinics must use key linguistic and visual symbols that already have meaning for the audience. For example, as I discuss in the following chapters, fertility clinic websites mobilize popular understandings of the gene as essentially encoding the self (Rapp 1991), as a blueprint for life (Rose 1996). Rose reports that in

> the widely disseminated popular discourse of molecular genetics, [is] the notion of DNA as a 'master molecule' that incorporates the secrets of identity…In this discourse the genome is first essentialized as equivalent to life itself and then metaphorized as a code.
> (Rose 1996:620)

Fertility clinic websites draw upon these understandings to structure the relationship of participants in reproductive technologies such as gestational surrogacy. By assigning

primacy to the genetic relationship between an adult and child, other relationships (such as a gestational relationship between an adult and child) can be marginalized.

I operationalized my key terms of kinship and nature in several ways. For example, when looking for kinship in text I first searched for the terms *family*, *mother*, *father*, *parent*, *child*, and *baby*. This first stage of coding and analysis (Miles and Huberman 1994) allowed me to collect information about what fertility clinics were saying about families explicitly. I then coded the text in terms of the relationships I listed in my second research question. For example, in terms of the adult/gamete relationship I looked for descriptions of gamete (egg and sperm) collection, donation, manipulation, fertilization, and location with respect to human bodies. I looked for images of gametes including photographs, drawings, diagrams, and medical imaging, taking note of accompanying textual description, proximity to other images (such as flowers), other structures in the image (such as technological apparatus), activity in the image (the process being depicted), and whether the image was factual (for example, in the case of a drawing or diagram are the egg and sperm of the proper scale relative to each other). In contrast with the explicit mentions of *family* and *parenthood* the descriptions and depictions of gametes provided information about kinship and relationships that was implicit and more subtle.

In addition to the textual descriptions, proximity, structures, activity, and factuality described above, I looked at images in terms of several "truth creating" mechanisms used to manipulate the elements present—including technological

equipment, human bodies, and gametes—to present particular understandings of reproductive technologies. I made note of the following: scale suggested how the relationship of different structures in an image was being managed; animation revealed which structures in an image were assigned agency; proximity functioned to create analogies between two or more different images; colour provided emphasis, particularly in terms of humanity; and magnification suggested clarity or greater access to truth. Fertility clinic websites made use of these visual strategies to tell particular stories about how reproductive technologies should be understood.

The development of my coding scheme began with a small number of broad categories based on my review of the literature: specifically, the strategic mobilization of "nature"; genetic essentialism; the role of intent; and, differential power among participants. While these four broad categories were deductive, the remaining codes were inductive, that is, they were generated from the data. For example, the codes I used to analyze the relationship between fertility clinic clients and surrogates were derived from the data and included codes for friendship, help, heroism, childcare, and matchmaking.

I then used a contact summary sheet to assist with the development of the coding scheme. A contact summary includes focusing and summarizing questions used to develop an overall summary of the main points for each contact (Miles and Huberman 1994). I used the contact summary sheets to record my initial impressions, including main themes and issues, components of the research questions that the websites appeared to bear on most centrally, and which additional foci were suggested by the websites

(Miles and Huberman 1994), While I focused on elements of the fertility clinic websites most closely related to the research questions, I also recorded whatever caught my attention including unexpected items. I continued to modify the themes as analysis progressed (Miles and Huberman 1994; Bernard 2002). For example, based on my reading of Martin (1991) I expected to find analogies of courtship and marriage, including stereotypical gender attributes, in descriptions of eggs, sperm, and fertilization. As data collection and analysis progressed it became apparent that the marriage theme needed to be expanded to account for marriage as the site of infertility, since fertility clinic websites describe infertility as a couple's problem. I discuss the marriage theme in Chapter Six. While developing themes I particularly focused on evidence of cultural contradictions, social conflict, management of social relationships, and methods by which people acquire and maintain kinship status (Bernard 2002, Ryan and Bernard 2003). For example, as I describe in Chapter Three, one of the fertility clinic websites employs mathematical formulae to identify the relationship of participants to one another in surrogacy and egg donation contexts. This explicit management of social relationships and kinship status led me to pay close attention to the ways that kinship determinants (such as genetic relationships) were emphasized and de-emphasized. I also looked for the construction of blame, responsibility, stake, accountability and how website content was categorized and particularized (Rose 2001). For example, by coding for blame and responsibility I was able to identify the way that female bodies are presented as dysfunctional. I also made use of compositional analysis methods and content analysis methods as recommended by Rose (2001) for analysis of discourse. For example, I looked closely at all aspects of the images on the websites including spatial organization,

perspective/gaze, and the possible effect on the spectator. By noting similar patterns and characteristics I developed the codes for "truth creating mechanisms" described earlier. The coding scheme was applied first to each website individually. I then prepared profile matrices to compare variables across cases; that is, to compare the themes across fertility clinic websites (Miles and Huberman 1994).

I utilize the concept of socio-technical networks (Hanseth and Monteiro 1998) to analyze technology as social practice among participants, including physicians, infertile men and women, and gametes. Socio-technical networks are a way of understanding reproductive technologies in terms of both social elements (such as culturally specific kinship knowledge) and technical elements (such as tools and procedures). I also use discourse as a framework for analyzing the material on fertility clinic websites for reasons described in the previous chapter.

I have described how cultural dimensions of reproduction can be examined within virtual locations, and how fertility clinic websites, situated in virtual locations, are a particular kind of public document in the same way that the government reports, legislation, newspapers, and advertisements that form the public discourse are also public documents. Discourse analysis, in which meaning, representation, and culture are understood as constitutive, provides a framework to discuss the entrepreneurial role of fertility clinics in the way they mobilize nature and kinship on fertility clinic websites. In the next chapter I turn to the results I compiled by applying my research questions to the fertility clinic website sample.

CHAPTER THREE:

FERTILITY CLINIC WEBSITE CONTENT

In this chapter I describe how fertility clinics establish their voice of authority by asserting their medical and marketplace legitimacy, and how they mobilize the themes of hope and success to structure the experience of participants as one of hard work and achievement. I then provide an overview of fertility clinic website arrangement and content including fertility clinic reproductive technologies and services. Following this overview I provide more detailed descriptions of two fertility clinic websites that exemplify the mobilization of nature and kinship I discuss in the following chapters.

Although I sampled in such a way as to look for differences between Canadian and American fertility clinic websites, the few differences I identified are not central to my presentation of data and analysis. Organizing the clinic results by nationality was not fruitful. The different strategies fertility clinics employ as they mobilize nature and kinship did not cluster along national lines. I highlight these different strategies in the in-depth descriptions of two fertility clinic websites later in this chapter. Therefore, throughout the bulk of this thesis I refer to data from fertility clinic websites without reference to the fertility clinic's country of origin. The primary difference I observed was the use of gift imagery and I discuss this in Chapter Six. Additionally, although my third research question was designed to address how meanings and relationships are shaped by existing social hierarchies of ethnicity/race, ability, sexuality, and gender, most of the material I found in my sample of websites relates specifically to gender and I have

chosen to focus on this component of analysis. Ethnicity/race is notable primarily by the virtual absence of non-white men, women, and babies. There are very few images of non-white adults and only one instance of a non-white baby in the sample. Humans of differing abilities are also absent. The only references to ability are in terms of genetic testing for chromosomal and other abnormalities. Finally, sexuality permeates the linguistic and visual symbols on the websites in terms of the overarching heterosexual nuclear family narrative I discuss at length in Chapter Six. The availability of reproductive technologies for same sex couples is mentioned on only two websites.

3.1 Fertility Clinics as Entrepreneurs

I suggested in Chapter One that fertility clinics act as cultural brokers between reproductive technologies and prospective clients. This entrepreneurial activity shapes understandings of nature, kinship and technology, and these meanings organize social practice (Hall 1997). In this section I describe how fertility clinic websites cultivate medical and marketplace legitimacy, establishing a voice of authority to represent information to prospective clients.

Fertility clinic websites describe their services and procedures as medical treatment or therapies and often reference hospital and university medical department affiliations. Infertility must be perceived as a disease-like state in order to be remedied through the services of a fertility clinic (Lock 1998; van Balen and Inhorn 2002).

Otherwise it is involuntary childlessness, that is, a social problem (van Balen and Inhorn 2002). The medical framework is also manifested through use of medical language that may not be comprehensible to the layman. For example, fertility clinic home pages refer to "superovulation" protocols (Southeastern Fertility Center 2001), "micromanipulation" (Toronto Centre for Advanced Reproductive Technology 2001) and "cannulation" of the fallopian tubes (University of British Columbia IVF Centre 2001) but they do not define the terms or offer further explanation. Instead, prospective clients must search through the website to find more detailed information. Using technical language without defining it reinforces the medical paradigm in which the physician is the expert with specialized knowledge that is inaccessible to the patient. Fertility clinic websites also typically include photographs of physicians and technicians in lab coats or gazing into microscopes. Other images that support the medical paradigm are logos, buttons, and icons that suggest knowledge, such as textbooks, eyeglasses, microscopes, and test tubes.

Fertility clinic websites promote their services as a consumer product primarily on home pages and in welcoming statements from scientific directors, lead physicians, or chief executive officers. Marketplace legitimacy is asserted by describing comprehensive services, state of the art technology, convenient locations, attractive premises, testimonials from satisfied customers, and individualized, caring service. For example, one fertility clinic website (Heartland Fertility and Gynaecology Clinic 2001) describes their services as "advanced", "state of the art", and a "complete package." The facilities are described as "comfortable", "attractive", and "convenient", and the service as "supportive", "individualized", and provided by "highly qualified staff." Most fertility

clinic websites provide physicians' biographies and CVs to demonstrate their qualifications and success in the field of reproductive technologies. Financial incentives listed on both Canadian and American websites include competitive rates, links to financial institutions with reproductive technology lending policies, and partial refunds for unsuccessful attempts. About half of the websites provide information about success rates, either in the form of statistics or general statements such as "excellent take home baby rate" (The International Fertility Centers for Surrogacy and Ovum Donation 2001). Success rates are difficult to compare among clinics because each fertility clinic calculates them differently. For example, in vitro fertilization (IVF) success rates may be calculated based on the number of pregnancies per IVF cycle or the number of live births per IVF cycle; they may be calculated on the number of pregnancies or live births per egg retrieval or per embryo transfer; they may be calculated for IVF and intracytoplasmic sperm injection (ICSI) separately or combined; they may be differentiated by the age of the female infertility patient; and finally, they may be calculated based on pregnancy determined by a blood test or by pregnancy determined by a fetal heartbeat detectable by an ultrasound. Where success rates are presented they are typically for IVF, and sometimes for ICSI and artificial insemination.

As noted in the literature review several studies highlight the issue of "choice" as non-choice in reproductive technologies, particularly in terms of prenatal diagnostic testing and infertility patients feeling compelled to persist with IVF or other infertility treatments (Williams 1988; Franklin 1997a). The concept of choice also figures in the entrepreneurial role of fertility clinics in the way that they establish their consumer

legitimacy and position their services as a consumer product. Strathern's (1992) model of "prescriptive consumerism" holds that one's choices, and in fact the act of choosing, are circumscribed. This model holds that if an individual has the opportunity to enhance herself she should do so: there is no option not to consume, and consumption must take specific forms. Individuals feel the pressure of a consumer ideology which dictates that they must be fulfilled in certain ways. According to Strathern:

> the exercise of choice that defines the active citizen is market choice, …because the market deals in things which have been market*ed*. That is, they are designed for selling, made to specifications that 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. (Strathern 1992:38)

The services presented on fertility clinic websites exemplify prescriptive consumerism in that there is no option not to consume. None of the websites in the sample suggest that prospective clients may want to consider whether infertility treatments and reproductive technologies are the right option for them. There is no sense that prospective clients will choose or not choose this option: there is no choice to be made. There is also no sense of trying lesser invasive technologies but stopping at more invasive technologies. The fertility clinic websites do not say more invasive procedures have more side effects and lower success rates. Nor do they make explicit that successive failures may lead to greater emotional distress for women and men. This pattern of circumscribed choice is reflected in the way that websites present the different reproductive technologies as progressive steps to be taken. There is no information presented on websites for prospective clients to decide which procedures are right for

them or when to stop. For example one website (The International Fertility Centers for Surrogacy and Ovum Donation 2001) states they are "willing to work with you and as many surrogates as you would like to try in succession until a child arrives." The fertility clinic executive director claims she will help the client "every step of the program until you and your baby are settled into your life together." Also, in its description of surrogacy fees, this website states that the fee will cover all surrogacy arrangements "until you have a child through our program." There is also no indication on websites that prospective clients may elect to pursue adoption instead or remain childless. Absent as well is the suggestion that being childless is not necessarily a matter of suffering. I describe the presentation of suffering and failure further in Chapter Four. The medical paradigm and prescriptive consumerism on fertility clinic websites combine to shape information and access to procedures and technologies (Woliver 1995). Specifically, the medical paradigm frames infertility treatment as an individual choice and as the solution to reproductive problems while distracting from political and economic contexts of reproductive decisions including social remedies to childlessness (Woliver 1995; Eichler 1998).

There is no material on the fertility clinic websites for couples who do not go home with a baby. These websites are advertisements selling a product and admitting failed outcomes would destabilize the naturalizing metaphors in the conception stories and reveal that fertilization and other steps in the reproductive process are not the definitive, controlled acts they are presented to be. There is much about fertilization that is not understood. Nonetheless, on the websites the conception stories have specific steps

so that technology can be described as managing these steps in a particular way. For example, IVF is presented as a series of technological steps yet ultimately fertilization must occur "on its own" (Markham Fertility Centre 2001). Eggs and sperm can be manipulated into proximity to increase chance of fertilization only. Success rates are not called failure rates as they would be described in industrial contexts, in which systems and components are measured in terms of their failure rates rather than their success rates. Success rates are the only direct examples on the websites of potentially adverse outcomes. Even so, one website puts a positive spin on a negative outcome: "the Center provides couples with the maximum amount of clinical, emotional, and administrative support they will need to complete their 'cycle' *successfully*—whether it results in a pregnancy or not" (Fertility Center of New England, Inc. 2001, emphasis added). Moreover, failures are described in terms of the client's body (usually the woman's body) not in terms of the fertility clinic procedures. For example "patients with active endometriosis do not perform as well as others in an IVF setting" (The Washington Center for Reproductive Medicine 2001). IVF is described as "failed IVF" (Washington Center for Reproductive Medicine 2001) if no pregnancy results. If the conception stories were to be represented as uncertain outcomes with large gaps in knowledge and possible failures, this might well undermine the legitimacy and authority of the fertility clinics and diminish their success as entrepreneurs.

3.2 Reproductive Technologies and Other Services

The fertility clinic websites in the sample follow a similar arrangement: a home page communicating key messages in text and image with a series of buttons to follow for descriptions of infertility causes and the services and procedures available at the fertility clinic. Infertility causes and fertility clinic services comprise the greater part of the web pages, and are partnered with a variety of images to reinforce the key messages about nature and kinship that are being mobilized. The remainder of the information on the websites is focused on customer service and promotion.

Fertility clinic home pages vary in style, but consistently contain similar visual elements. Home pages feature prominent logos that fall into three general types: flora, families, and fertilization and may be photographs, graphics, or drawings. Flora are usually sunflowers or lilies, but also include sheaves of wheat, trees, and leaves. Flowers may be accompanied by pollinators such as bees, birds, and butterflies. Family logos consist of simplified renderings of a man, woman, and child combination. Sometimes the family logo is encircled by floral elements, and sometimes the floral elements are repeated in a trio, echoing the three-part family logo. Fertilization logos usually depict a single sperm penetrating an egg. However, the sample also contains examples of fertilization logos in which a baby peers over a simplified egg, and in which an egg merges with a floral logo. These logos are usually featured prominently on the home page, then repeated throughout the website as letterhead, watermarks, or icons on buttons

and links. The logos also appear side-by-side with images of fertility treatments, which I discuss later in this chapter.

Fertility clinic home pages also feature word marks and promotional slogans. Workmarks are logos without pictures. They are pieces of text treated with fonts, size, colour, and other embellishments to stand out visually (McWade 2005). For example, one home page features the website address "www.baby-makers.com" (Mount Sinai Hospital, Reproductive Biology Unit 2001) in large, bold, blue letters in the centre of the page (see Figure 1, Appendix B). The text is larger than the name of the fertility clinic and visually dominates the page. The website address is not a necessary part of the home page since potential clients would obviously already be viewing the website; however, the name of the website address serves as a promotional slogan. Promotional slogans appear primarily on home pages and typically communicate messages of help and success. Table 1 below contains examples of promotional slogans.

Table 1.

Fertility Clinic Website Content: Promotional Slogans
"sometimes even miracles need a helping hand" (Heartland Fertility and Gynaecology Clinic 2001) "the sound of a baby's laughter…one of life's little miracles" (Heartland Fertility and Gynaecology Clinic 2001) "we'll help you every step of the way" (The International Fertility Centers for Surrogacy and Ovum Donation 2001) "helping couples become families" (The Fertility Institutes 2001)

"baby-makers"
(Mount Sinai Hospital, Reproductive Biology Unit, 2001)
"a celebration of life"
(Toronto Centre for Advanced Reproductive Technology 2001)
"over 50% take-home baby rate!"
(The International Fertility Centers for Surrogacy and Ovum Donation 2001)
"view our donors on line"
(The Egg Donor Program and the Surrogacy Program 2001)
"newsflash: annual IVF baby picnic"
(Institute for Reproductive Health 2001)
"doctor of the year"
(The Advanced Fertility Institute 2001)

Descriptions of infertility causes and treatments can be reached through buttons on the home page. This material is primarily text. As described above, these buttons are often smaller versions of the main logo. Infertility causes listed on the websites include blocked fallopian tubes, ovulatory problems, endometriosis, polycystic ovarian syndrome, recurrent miscarriage, and male factor. Male dysfunction is referred to almost exclusively as male factor infertility and lists of infertility causes do not include more specific diagnoses. Also, male infertility and female infertility are rarely described in parallel language. Instead, one website describes "female infertility" and "male factor problems" (Southeastern Fertility Center 2001) and another describes "female infertility" testing" and "male investigation" (The Washington Center for Reproductive Medicine 2001). Fertility clinic websites that list percentages for male and female causes of infertility quote very similar figures: approximately 40% of infertility problems reside in the male, 40% in the female, and 20% being both or unexplained. However, the space

devoted to discussing infertility causes and treatments disproportionately emphasizes female infertility. For example, one fertility clinic website lists six causes of infertility, four are specifically for women, one for men, and one as either. Similar ratios are found in descriptions of diagnostic procedures and fertility services: one clinic lists 14 services, nine of which are for women, one for men, and four for either. Another clinic lists nine diagnostic procedures, seven of which are for women, two for men. Descriptions of infertility causes may be accompanied by photographs, medical imaging, or diagrams of female dysfunctional bodies, but there are no examples of images of dysfunctional male bodies. Figures 2 through 5 in Appendix B exemplify images of female dysfunction. Figure 2 is a photograph of an ovary showing multiple areas of endometriosis, Figure 3 is an ultrasound of ovaries with polycystic ovarian syndrome, and Figures 4 and 5 are diagrams of the uterus showing pelvic adhesive disease and fibroid tumors.

Infertility treatments listed on fertility clinic websites include assisted insemination, in vitro fertilization (IVF), intracytoplasmic sperm injection (ICSI), egg donation, surrogacy, and other treatments such as surgeries to reverse vasectomies and tubal ligations, and surgeries to repair damaged reproductive organs. Many of these infertility treatments have multiple variations and options (such as transfer of gametes and embryos to different locations in the female reproductive system) which are listed under their own titles, but I do not describe each of these procedures here as they are essentially variants on the main reproductive technologies listed above. Other ancillary procedures offered at some fertility clinics include cryopreservation, sex selection, and testing for chromosomal and other genetic abnormalities. The main infertility treatments

are assisted insemination, IVF, ICSI, egg donation, sperm donation, and surrogacy. I discuss them more fully in Chapters 4 and 5.

Descriptions of assisted insemination are typically accompanied by two types of images. The first are simplified diagrams of a female torso with the injecting apparatus inserted into the vagina. In these diagrams the woman's body is always truncated, and the hand of the physician operating the technology is usually absent as well. Second and more common are images of pollination. These images show birds, bees, or butterflies on flowers. The flowers are usually lilies or sunflowers, in which the reproductive organs of the flower are visible. Sometimes these images co-occur on the same page or within the same website as will be exemplified by the Heartland Fertility and Gynaecology Clinic later in this chapter. I discuss these images in greater detail in my discussion of themes in Chapter Six. IVF and ICSI descriptions are also frequently accompanied by images of pollination, as well as magnified photographs or diagrams of the procedure at the point of fertilization. Fertilization images are sometimes animated, showing a single sperm moving toward an egg. Sometimes the egg and sperm are the only objects in the image, and sometimes they are presented with technological tools such as injecting apparatus for ICSI. In both instances, however, scale is manipulated so that egg and sperm appear as roughly equal in size whereas in reality, eggs are detectable with the naked eye while sperm require magnification to be detected (Martin 1991). Additionally, these images usually depict a single sperm moving toward the egg rather than the multiple sperm that would be present in artificial insemination, IVF, or for that matter in unassisted reproduction. The only other example of an animated image in the sample is a

nature story found on one fertility clinic website homepage. The animation sequence shows a seed flying in from the right hand side of the frame and landing in soil. The sun shines and a tree rapidly grows into fruition. Egg donation and surrogacy descriptions include references to angels, images of angels and cupids, and sometimes links to images of the egg donors and surrogates. Sperm donation is never accompanied by images.

Customer service information includes contact information, office hours, maps, driving directions, translation services, lists of convenient hotels, fee schedules, payment options, and links to insurance companies and financial lending institutions with favourable policies regarding reproductive technologies. Customer service is also typically emphasized on home pages that describe convenient locations, comfortable and attractive premises, spacious facilities, state-of-the-art technology, and individualized, caring service. Testimonials in the form of success stories from former patients are present in about half of the sample. Quality assurance is communicated through staff biographies, CVs, and lists of awards and publications. Another aspect of customer service is patient education. Many fertility clinic websites cite patient education as part of their mission statement, and include glossaries, links to medical databases, lists of frequently asked questions, statistics, success rates, recommended reading, journal articles, in-house articles, newsletters, links to chat rooms and support groups, and notices for patient seminars and classes.

I now provide in-depth descriptions of two fertility clinic websites that exemplify the results I discuss further in this chapter and in Chapters Four, Five, and Six. Although

Example A is Canadian and Example B is American, these two examples are not intended to represent typical Canadian and American websites but rather to represent different strategies used to mobilize nature and kinship.

3.3 Example A: Heartland Fertility and Gynaecology Clinic

The first example is a private fertility clinic operating in a Canadian city with a population of approximately 700,000. On the left hand side of the home page are four buttons leading to the other pages. The buttons are titled "The Clinic"[2], "Services", "Clinic News", and "Contact Us." At the bottom of the home page is a disclaimer with four key pieces of information: the site is "for informational purposes only" and actual diagnosis and therapy should be done in consultation with a physician; the website is not intended to solicit patients; prices quoted are for Canadian residents only; and, the clinic requires a signed and witnessed agreement prior to entering into medical discussions with non-Canadian residents. The disclaimer suggests some contradictions between not soliciting patients but offer competitive pricing (as indicated on the following page), and between serving non-Canadians but requiring documentation prior to any discussions.

"The Clinic" button leads to a page containing customer service and promotional information. This page describes state of the art technology, convenient and time-saving treatment schedules, proximity to the city centre and hotels, and individualized care provided by professional, highly qualified, and supportive staff. This page contains three additional menu items: staff, location, and hotels. The staff page contains descriptions of

[2] All fertility clinic quotes in section 3.3 are from the Heartland Fertility and Gynaecology Clinic (2001).

the three medical directors and one laboratory director including education, professional experience, and areas of specialization. The location and hotel pages provide maps, and the hotel page also lists five nearby hotels, their rating, and contact information.

"The Services" button leads to a page introducing the three main sub-sections in this category: infertility, gynecology, and service fees. There is a brief description of the information to be found on the following pages, including a notice about competitive pricing. The "Infertility" section is further broken down into causes, treatments, and success rates, each with their own page. The causes of infertility described are tubal factor infertility, ovulation disorders, male factor infertility, endometriosis, recurrent pregnancy loss, and unexplained infertility. A brief description of male and female causes of infertility states that approximately 40% of causes are from female factors, 40% are from male factors, and 20% are from either or are unexplained. However in the list of infertility causes provided, 66% are female factors, 17% are male factors, and 17% are unexplained. Additionally, whereas female fertility issues are listed specifically such as "ovulation disorders" and "endometriosis", male fertility issues are listed generally as "male factor." Moreover although female fertility issues are described using both "female" and "woman", male issues are only described in terms of "male", never "man."

Infertility treatments listed are: ovulation induction, therapeutic donor insemination (TDI), oocyte donation, hyperstimulation and intrauterine insemination (HS/IUI), in vitro fertilization (IVF), intracytoplasmic sperm injection (ICSI), hormone treatment, and tubal ligation reversal. These treatments are described as either enabling

couples to have a child or enabling couples to achieve pregnancy. The emphasis shifts slightly depending on which procedure is employed. The benefits of HS/IUI, IVF, or ICSI using the couples' egg and sperm are described as enabling a couple to give birth to their own biological offspring (IVF and ICSI are described as essentially the same procedure but with minor subtle differences). However, if donor sperm or egg is utilized then the emphasis shifts to experiencing pregnancy and childbirth. Artificial or assisted insemination appears on this website under the title "hyperstimulation and intrauterine insemination" (HS/IUI). It also appears under the title of therapeutic donor insemination (TDI). HS/IUI is described as a procedure using the husband or partner's sperm. If donor sperm is used then the service is listed separately as TDI. Gamete donation is described differently: oocyte donation is not listed as "therapeutic" oocyte donation as with "therapeutic sperm donation"; and while sperm donors are anonymous, this fertility clinic uses only known egg donors.

The success rates page lists statistics for IVF, ICSI, HS/IUI, and TDI for different time periods. "Clinic News" includes a notice to register for a seminar on infertility and locally available treatments, and an infertility article from a parenting magazine, and "Contact Us" lists the street address, telephone number, fax number, and email address. Table 2 below is a site map of Heartland Fertility and Gynaecology Clinic listing the hierarchy of information presented on the website.

Table 2.

Heartland Fertility and Gynaecology Clinic Site Map			
Home Page			
The Clinic	Staff		
	Location		
	Hotels		
Services	Infertility	Causes	Tubal Factor Infertility
			Ovulation Disorders
			Male Factor Infertility
			Endometriosis
			Recurrent Pregnancy Loss
			Unexplained Infertility
		Treatments	Ovulation Induction
			Therapeutic Donor Insemination (TDI)
			Oocyte Donation
			Hyperstimulation Intrauterine Insemination (HS/IUI)
			In Vitro Fertilization (IVF)
			Intracytoplasmic Sperm Injection (ICSI)
			Hormone Treatments
			Tubal Ligation Reversal
		Success Rates	IVF and ICSI Statistics January 2001 to December 2001
			IVF and ICSI Statistics August 1997 to December 2001
			IVF and ICSI Statistics August 1997 to December 2001 – Patients with FSH -10 IU or less
			IVF and ICSI Statistics August 1997 to December 2001 – Patients with FSH greater than 10 IU
			HS/IUI Statistics August 1997 to August 2001
			TDI Age Statistics June 1997 to August 2001
	Gynecology	General Gynecology	
		Hormone Disorders	
		Surgical Gynecology	
		Advanced	

		Procedures	
	Service Fees		
Clinic News			
Contact Us			

The most striking aspect of the home page is a large image of a sunflower adjacent to an image of a baby (Figure 6, Appendix B). The sunflower is yellow with a long stem that is slightly curved so that the sunflower bends towards the baby. The baby image is a colour photograph of a laughing white child swaddled in white linen. Immediately below the baby is a logo representing a nuclear family (Figure 7, Appendix B). The logo has three patterns repeated to symbolize a man, woman, and child. The shape of the logo suggests an individual with an arm encircling the inner image: the man's arm encircles the woman's arm, which encircles the part of the image representing the child. The image is also drawn to suggest a heart shape, as the word "heart" forms part of the clinic's name. Immediately to the right of the nuclear family logo is the name of the fertility clinic in large, bold type.

There are two pieces of text on the home page that are smaller than the clinic name yet stand out from the remainder of the text in that they are larger, a different font, and in bold, blue colour. At the top, centre of the home page is a promotional slogan: "The Sound of a Baby's Laughter…One of Life's Little Miracles." Adjacent to this is additional text communicating the fertility clinic's key messages: "sometimes even miracles need a helping hand", and the fertility clinic provides "state of the art technology." Immediately below the logo and clinic name is contact information and a

link to view success rates. The nuclear family logo and the sunflower (minus the stem) are repeated on every subsequent page of the website. The nuclear family logo forms the header of a menu list on the left side of the website, while the sunflower remains in the same relative location (top left hand of the page) on every page.

The sunflower image is mobilized in several ways throughout the website: on the home page with a baby; at the top of each webpage paired with colour photographs of people or colour diagrams; and, as bullets for sub-section headers. In each pairing the size of the sunflower image corresponds to the size of the photograph or diagram. Structurally, the sunflower displays prominent and robust fertility with its visible seeds. Combined with this evocation of potential and abundant fertility is the aspect of the warm, benevolent sun causing growth and fruition.

On several pages the sunflower is paired with a colour photograph. In each instance the sunflower is on the left side of the page and the photograph is placed beside it on the right side of the page. On the clinic information page the photograph is of a smiling white, man, woman, and child. The man and woman are crouching down while a toddler walks from the man to the woman. The woman's arms are outstretched to receive the toddler. The staff page pairs the sunflower with a photograph of three men standing in front of a sign with the clinic name. They are in business attire and smiling into the camera. This photograph differs from most of the other photographs of fertility clinic staff in the sample in that they are not wearing lab coats or other medical attire. The services page features a head shot of a smiling white woman; however, neither she

nor her specific role is identified in the text. The photograph on the infertility page is of a woman in medical uniform looking into a microscope. The service fees page pairs the sunflower with a photograph of two women seated at a desk, with one woman demonstrating a technological implement to another, possibly a potential client. Clinic news pairs the sunflower with a smiling white couple, the man standing behind the woman with his hands on her pregnant belly. Finally the contact us page has a photograph of a smiling, white, crawling baby in a diaper playing with a toy telephone.

The sunflower is also paired with colour diagrams. In each instance the diagram mirrors the sunflower image in terms of size, shape, colour saturation, level of detail, and position on the page. The three pages featuring causes of infertility, infertility treatments, and success rates all pair the sunflower with the same diagram of intracytoplasmic sperm injection (ICSI), showing an egg in the act of being injected with a single sperm (Figure 14, Appendix B). Only the bottom of the injection tube is visible where it penetrates the egg. There are no other visible human body parts or technological apparatus. The sunflower on the "gynecology" page is paired with a partial view diagram of female reproductive organs. There is no corresponding page of male anatomy.

The last way the sunflower image is mobilized is different from the large sunflower image that appears as letterhead in that it resembles the nuclear family logo. This image is actually three small sunflowers clustered together as a sub-heading bullet. The sunflowers are large, medium, and small in terms of their relative size, and they have

stems with leaves that reach out to the other sunflowers as through they are arms. The sunflower triad accompanies each description of infertility causes and treatments.

3.4 Example B: The International Centers for Surrogacy and Ovum Donation

The International Centers for Surrogacy and Ovum Donation is located in the United States, and is described on its home page as an international private fertility clinic. The home page features several promotional slogans, a mission statement, links to translation services in French, German, and Spanish, and contact information. The promotional statements on the home page emphasize success rates and comprehensive administration including medical, financial, and educational aspects, personalized service, and no waiting. They describe favourable local legislation in terms of "excellent surrogacy laws"[3]. The surrogacy laws are described on a subsequent webpage and clearly favour the potential clients rather than the surrogate. For example, a child born to a surrogate is legally the child of the "intended mother", that is, the female client who commissioned the surrogacy arrangement. Local legislation also provides for substitution of birth certificates in which the surrogate mother's name is replaced with the female client's name. The promotional slogans from the home page are listed in Table 3.

[3] All fertility clinic quotes in section 3.4 are from The International Fertility Centers for Surrogacy and Ovum Donation (2001).

Table 3.

The International Centers for Surrogacy and Ovum Donation Home Page Key Messages
"The center that offers you excellent pregnancy rates, the benefits of excellent surrogacy laws from Arkansas and personalized, knowledgeable service!"
"Providing experienced coordination of the legal, medical, financial, educational, psychological and administrative aspects of your surrogacy program."
"We'll help you every step of the way."
"The center that offers you excellent pregnancy rates, experience and a wide selection of available donors!"
"Over 50% take-home baby rate!"
"No waiting!"

The mission statement communicates that the staff are committed to three "parties": the "client", the "fertility helper", and the "unborn child." The fertility clinic is committed to providing personalized, attentive, and knowledgeable assistance to the client and treating the fertility helper as a valued and respected member of the program. The fertility clinic is also committed to providing a safe place for the unborn child to thrive before birth.

The menu buttons are listed on the left side of the website and are titled as follows: Fertility Options, Do you need surrogacy or ovum donation?; Arkansas

surrogacy laws the best in America!; Happy Endings! Going Home with a Baby; Our Staff and Experience; Information for Clients; View Ovum Donors online; Reduce your costs?; Information for Surrogate Mothers and Surrogate/Gestational Carriers; Information for Ovum/Egg Donors; and Links. The descriptions that appear on these web pages focus primarily on identifying the roles and kinship status of the participants in the different procedures. A site map of the International Centers for Surrogacy and Ovum Donation is provided in Table 4.

Table 4.

The International Centers for Surrogacy and Ovum Donation Site Map	
Home Page	
Fertility Options: Do you need Surrogacy or Ovum Donation?	
Arkansas Surrogacy laws the best in America!	
Happy Endings! Going Home with your Baby	
Our Staff & Experience	
Information for Clients	Surrogate Mother Stages
	Client/Couple Intake Form
	Surrogate Program AI Costs
	Gestational Surrogacy Costs (Using Client's Embryos)
	Gestational Surrogate Program with an Ovum Donor
	Boost Your Sperm!! Male Factor: The Overlooked Ingredient
	Questions About Surrogate Mothers
	Our Program is Unique!
	Client Information Ovum Donor Program
	Ovum Donor Questions for Couples
View Ovum Donors Online	
Reduce Your Costs?	
Information for Surrogate Mothers and	Application form for Surrogate Mothers

Surrogate/Gestational Carriers	
	What to Expect as a Surrogate
	Reimbursement of Expenses and Fees
Information for Ovum/Egg Donors	Application form for Ovum Donors
	What to Expect as an Ovum Donor
	Facts about Ovum Donation
	Reimbursement of Expenses and Fees
	Ovum Donor Program Fees United States
	Ovum Donor Program Fees Comprehensive Package
Links	

The International Fertility Centers for Surrogacy and Ovum Donation contains fewer images than Heartland Fertility and Gynaecology Clinic, but the images utilize such different themes that they provide an interesting contrast. The only image on the home page is a large colour photo of a white female toddler in a white dress. The child is gazing up and gesturing in the direction of the fertility clinic website name. Light shines on the child's face as if the light source were the fertility clinic name. This same image appears as the header for the menu bar on the left side of every page. With the exception of the home page, the menu bar also contains another image as a footer on every page. This image is a drawing of an adult's hand holding a child's hand, and is enclosed in an oval.

There are four other colour photographs of newborn, white babies on the "Happy Endings" page, the "Client Information Surrogate Mothers' Stages" page, the "Client Information Ovum Donor Program" page, and the "Ovum Donor Questions for Couples" page. These colour photographs show a baby being kissed by a man, a smiling baby, a

baby wrapped in a blanket, and a baby surrounded by stuffed animals, respectively. All of these baby photographs are on web pages to which potential clients, rather than potential surrogates or ovum donors, are directed.

The pages for "Surrogate Mother Information" and "Information for Ovum Donors" have different images. The first image is a watercolour-type drawing of a young girl standing in a field of flowers. The girl's face is averted so that we see only her long, flowing hair, mingling with tall wild flowers. The girl with the flowers also appears on the Client Information page. The second image, and one that is unique to the pages for surrogates and ovum donors is a small drawing of a human figure (not a child) curled up in the fetal position inside a circle. The outside of the circle is decorated with four floral trinities: three leaves together that resemble *fleur de lis*.

The last image appears on the "Links" page, and consists of a drawing of an open-winged butterfly enclosed in an oval. This image closely mirrors the menu footer image of the adult holding the baby's hand enclosed in an oval. The size, layout, shape, colours, and artistic style are very similar.

The International Fertility Centers for Surrogacy and Ovum Donation devotes most of its space to describing the relationships among participants in four "alternatives" they offer: ovum donation, gestational surrogacy, gestational surrogacy using an egg donor, and genetic surrogacy. For each technology there is a mathematical formula identifying the relationships of the participants to one another as well as the advantages

of the technology for the infertile couple. These formulae are presented in a bold, capitalized font to stand out from the rest of the text.

Under the description of ovum donation is the formula "EGG DONOR + HUSBAND = WIFE PREGNANT." Ovum donation is described as a option for advanced maternal age, poor egg quality, or premature ovarian failure. The advantages listed are that the wife experiences childbirth and breastfeeding, and that the baby is the biological offspring of the husband. Gestational surrogacy is described as an option that "requires a surrogate to carry and give birth to a baby that is not genetically related to her." The formula is listed as "WIFE + HUSBAND = SURROGATE PREGNANT" with the advantage that the baby is the biological offspring of the wife and husband. Gestational surrogacy using an egg donor is indicated where the wife is unable to provide eggs. The formula is "EGG DONOR + HUSBAND = SURROGATE PREGNANT." The advantages listed for this variation are that the baby is the biological offspring of the husband and is not genetically linked to the surrogate carrier. Finally, genetic surrogacy is described as a process whereby a surrogate is inseminated with the husband's sperm, then agrees to carry the child to term and relinquish all parental rights to the biological father and his wife. The formula is "SURROGATE + HUSBAND = SURROGATE PREGNANT." According to the website, the advantages of genetic surrogacy are that the baby is the husband's biological offspring and costs are reduced because fertility drugs and IVF procedures are not required.

The formulae for the four "alternatives": egg donation, gestational surrogacy using the couple's egg and sperm, gestational surrogacy using a donor's egg, and genetic surrogacy, demonstrate how fertility clinic websites strategically present information to shape understanding of the reproductive technologies they offer. The International Fertility Centers for Surrogacy and Ovum Donation focuses on the relationships between an infertile couple and either an egg donor or surrogate. The role of egg donors and surrogates are carefully managed by strategically emphasizing and de-emphasizing genetics and gestation.

I now turn to descriptions of how kinship is manifested on fertility clinic websites when relatedness among participants is asserted. These participants include male and female clients, gamete and embryo donors and their kin, physicians, gametes, embryos, and babies. I then look at reproductive technologies in several different groupings, or socio-technical networks, to demonstrate how the culturally meaningful themes that fertility clinic websites use to provide meanings for the technologies become problematic when compared and contrasted.

CHAPTER 4:

PARTICIPANTS AND RELATIONSHIPS

Kinship is manifested on fertility clinic websites when familial connections among participants are asserted; specifically, connections between intended parents and potential children in a nuclear family. Since the practice of reproductive technologies introduces other participants (other than a partnered man and woman) into the reproductive exercise, their presence must be explained without challenging existing kinship ideologies. Egg donors and surrogate mothers, for example, must be accounted for in a way that does not disrupt the overarching narrative of the nuclear family found on these websites. I discuss the nuclear family narrative in greater depth in Chapter Six but I mention it here because it is the lens through which relationships on fertility clinic websites are presented. By relatedness I mean the way that women, men, embryos, gametes, fetuses and babies are perceived as connected to one another (Franklin 2003). The means of connectivity are kinship determinants: defining characteristics that are perceived as objectively constitutive in creating parent/child relatedness and other familial connections (Dolgin 1997; Franklin 2003; Howell 2003). I am distinguishing between relatedness and relationships, since the latter may exist outside of any kinship discussion, such as participant/physician relationships and relationships of friendship and support among fertility clinic patients and their families (Thompson 2005).

The kinship statuses of participants in the reproductive technologies are constructed by drawing upon different and, at times, contradictory kinship determinants.

What gets to count as constitutive of parent/child relationships varies cross-culturally. For example, in North American kinship, genes are privileged as kinship determinants in that they are commonly understood as the foundational basis or blueprint for both human-ness and personhood (Carsten 2000; Franklin 2003). Many Canadians and Americans regard relatedness as a matter of bilateral biology in that a child is related equally to its mother and its father via the genetic contribution made through egg and sperm. It is important to note, however, that whereas cultural understandings of kinship, or relatedness, are apparently viewed as natural and inalienable (Keesing 1975) the substances, body processes, and practices that constitute kinship vary cross culturally. Carsten (2000:4) uses the term *relatedness* rather than *kinship* to "indicate an openness to indigenous idioms of being related" rather than presupposing biological foundations for all kinship systems. In this model, kinship is the lived experience of relatedness in local contexts (Carsten 2000). For example, the mother/child relationship and the father/child relationship may be perceived differently. Among the rural Muslim residents of the Anatolian region of Turkey interviewed by Carol Delaney (1988: 85-86), a mother's kinship to her child is based on gestation and giving birth. In this patrilineal society, a father's tie to his child arises from the life giving properties of semen, and through his control over that child's mother. For the Khumbo in northeast Nepal, children are related to patrilineal kin through ties of "bone" received from the child's father and to matrilineal kin through ties of "blood," "flesh," and "milk" passed from the mother (Diemberger 1993).

In addition to parent/child relationships, there is cross cultural variation in the substances and processes of the body that are understood to transmit identity and personhood. Among those orthodox Jews whose rabbis interpret religious law to mean that Jewishness is conveyed through pregnancy and childbirth, eggs donated from a non-Jew would be acceptable (Susan Kahn 2000). In this instance what is essential to an individual's identity is not transmitted through genetics but through gestation. Finally, Inhorn's (2006) work in Lebanon demonstrates the variation in how relationships among reproductive technology participants are constructed. Factors that come into play include the ability of egg and sperm donors to sever kinship relationships with a potential child produced from their gametes, and the relationship between genetic parents of a child. For example, the Islamic prohibition of formal, legal adoption has implications for men's views of assisted conception technologies. These views differ for Sunni and Shi'ite men, in that Sunni men are willing to consider using IVF, but not if donor eggs or sperm had to be used since that would constitute adultery and would mean that the child was not their own (Inhorn 2006:103). By contrast, some of the Shi'a Muslim men interviewed by Inhorn felt that IVF with donor eggs would be possible only if those gametes were donated by an unmarried woman who had entered into a temporary marriage with the contracting man. Donor sperm could not be used; however, some men felt it was acceptable to receive a donor embryo.

The differential use of substances, body processes and practices to constitute kinship can also be understood in terms of Cussin's (1998b) model of opacity and transparency. Cussins (1998b) uses the term *opacity* for kinship determinants that are

emphasized in constituting kinship and *transparency* for those determinants that are de-emphasized or regarded as irrelevant to the kinship tie. On fertility clinic websites the key participants subject to opacity and transparency include male and female clients, egg donors, sperm donors, physicians, gametes, embryos, and babies. Fertility clinic websites characterize prospective clients as medical patients, specifically as infertility patients. However, as I discuss in the following chapters, gamete donors and surrogates are not characterized as patients but rather as gift-givers and altruistic helpers. Gametes are discussed separately as eggs, or sometimes as ova, and sperm. For example, descriptions of IVF refer to the placement of eggs and sperm, not to the placement of female and male gametes. Fertilized eggs and zygotes are usually characterized as embryos regardless of the stage of development. The term "fetus" is rarely used. Fertility clinic websites refer to "babies" and "children" in a more general sense, typically in discussions of suffering and success. The terminology of "egg," "sperm," and "embryo" is reserved for more specific descriptions of the reproductive technologies. For example, one websites describes how they help couples become families as they seek care in a very sensitive and personal area, then later describe their services in terms of extraction of eggs and transfer of zygotes into fallopian tubes. Another website describes the "rollercoaster ride of hope and despair" and the "monthly stresses and disappointments" of couples who are "unable to have children" then describes cryopreservation and fresh and frozen embryo transfers as part of their egg donor program (The International Fertility Centers for Surrogacy and Ovum Donation 2001).

Understanding the relationships on the fertility clinic websites is key to addressing my research questions. It is important to examine the relationships themselves, that is, what the websites are saying about the adult/gamete relationship or physician/participant relationship. In addition, analysis of those relationships shows how clinics mobilize particular ideas about nature and kinship to mitigate potential threats to the nuclear family narrative and to their clients' claims to be the parents of resulting children. In this chapter, I focus on identifying the key participants and relationships in assisted conceptions techniques offered by the clinics and on identifying the potential threats to kinship and nature those techniques may pose. In Chapter Six, I analyze the culturally meaningful linguistic and visual symbols via frameworks of interpretation, or themes (Ryan and Bernard 2003)

Relationships on fertility clinic websites are presented primarily within the context of the services or technologies provided. As described in Chapter Three, websites typically have a list of services and technologies available, accompanied by descriptions of the processes. Embedded in these descriptions is information about who the participants are and what their relationships are to one another. Sometimes this information accompanies the descriptions of reproductive technologies as exemplified by The International Fertility Centers for Surrogacy and Ovum Donation in the previous chapter. In that clinic, the relationship of prospective clients and other participants such as surrogates and egg donors are described as if they were analogous to or reducible to a mathematical formula. Sometimes information about participants and their relationships is implicit, such as when websites describe a surrogate as "returning" a child to its

"parents" (IVF Canada 2001). In Howell's (2003) discussion of Norwegian transnational adoption, a similar process is described in which adopted children are described as "coming home." Thus, with a "linguistic sleight of hand, the biological parents in the country of origin are transformed into temporary caregivers" (Howell 2003:472). So, too, with surrogates.

I begin by describing the relationships among participants in the most common reproductive technologies listed on fertility clinic websites (which are also the main forms of assisted conception): artificial insemination, in vitro fertilization, intracytoplasmic sperm injection, egg donation, sperm donation, genetic surrogacy, and gestational surrogacy. I then summarize these meanings in terms of parent/child, adult/gamete, adult/embryo, and participant/physician relationships. Each of the reproductive technologies I discuss in this chapter has the potential to disrupt North American culturally specific understandings of kinship and nature. I describe these points of tension and introduce how fertility clinics mobilize key linguistic and visual symbols to manage these key threats to conception stories and conventional understandings of family. A central and recurring source of tension in assisted conceptive technologies has its origin in a longstanding European-derived paradigm in which technological advancement is seen as alienated from nature (Lutz and Collins 1993; Rose 2001). This dichotomy must be resolved in order for prospective clients to be able to accept reproductive technologies as tools to treat infertility and at the same time locate nature somewhere in their experience of going home with a baby. Strathern (1992:56) suggests that "as long as some element of the entire process of childbirth can be claimed

as ‘natural’, technological intervention appears enabling.” Thus, in the following pages, I pay particular attention to the ways in which the uses of assisted conception technology are naturalized.

4.1 Reproductive Technologies and Relationships

Artificial Insemination

In artificial insemination (AI), sperm is injected via syringe into a woman’s body, into either the vagina, cervix, uterus, or fallopian tube. This procedure appears under a number of different labels on fertility clinic websites, including “artificial insemination” (least common), “assisted insemination” (most common), “intrauterine insemination” (IUI), “donor insemination” (in the case of sperm donation), “therapeutic donor insemination,” and “artificial insemination – husband.” Under the heading of assisted insemination this procedure is presented as a treatment for couples, that is, a husband and wife. Assisted insemination is presented an unproblematic: it does not challenge the kinship status of the wife, husband, or potential child. The role of the physician is described as facilitating or assisting a natural process so that his or her presence does not destabilize the nuclear family narrative.

It is true that artificial insemination does not pose a threat to North American kinship where the male and female participants are the intended parents (typically presented on websites as a husband and wife couple) because genetic continuity between

parents and child is maintained. As I discuss later, genetic relationships are a naturalized kinship determinant in North American kinship. Artificial insemination does however pose some threat to understandings of nature in two ways: the presence of a third party—the physician-- and the introduction of technological apparatus. Widespread acceptance of medicalized births, technological intervention in low-risk birth, and of physician-supervised birth in North America probably means that the role of the physician in all assisted conception techniques is regarded generally as non-threatening. Nonetheless, it is clear that the fertility clinics want to emphasize the naturalness of AI. The presence of the physician is resolved by mobilizing the birds and bees conception story and portraying the physician as a fertility helper in much the same way as a pollinator. This introduces an acceptable role for the physician and eliminates alternate readings of the physician/wife relationship as adulterous, since it is in fact the physician that inseminates the wife, not the husband. This reading of the physician's role is specific to male physicians; however, most reproductive technology physicians are in fact male (Thompson 2005). Visually, the physician is absent. The few artificial insemination images depict technological apparatus for inserting the sperm, and rarely show a physician's hand holding the apparatus, but never show the physician as a whole body. Textual descriptions often use distancing language such as "semen sample is injected" (Heartland Fertility and Gynaecology Clinic 2001) rather than for example "the physician inserts the sperm".

The other key threat to nature is the introduction of technological apparatus used to manage body parts. Sperm are typically collected manually but may be collected

through more invasive procedures such as testicular sperm aspiration (TESA), a needle biopsy procedure performed with local anesthetic. Additional tools such as a syringe are used to transfer the sperm to the woman's body. This manipulation of body parts is resolved by symbolically equating the man and woman with their gametes and the physician with the technological apparatus. I described in Chapter Two how fertility clinic websites mobilize key linguistic and visual symbols that are already culturally meaningful, such as the relationship between genetics and personhood. This is an example of that practice: since gametes/genes are read as essential to the self, they can stand in for the woman and the man. Descriptions of fertilization therefore resemble a story of courtship and marriage. I discuss the marriage theme further in Chapter Six.

In Vitro Fertilization

In vitro fertilization (IVF) is the most commonly described reproductive technology on fertility clinic websites and is usually described in the greatest detail. In this procedure, egg production in the woman's body is stimulated with administered hormones, then her eggs are obtained via laparoscopy with ultrasound under local or general anesthetic. Sperm is collected from the man's body in a variety of methods depending on the nature of his infertility. The sperm may then go through preparatory procedures including testing, cleaning, and enhancing, before being combined with the eggs in a laboratory dish. Once fertilized, one or more fertilized eggs are placed inside the woman's body, usually either the fallopian tube or uterus. Additional processes may be employed to increase the chances that the fertilized egg will implant in the uterine

lining. While the eggs and sperm are placed in proximity by a physician, the sperm must have the ability to fertilize the egg. Therefore IVF creates additional opportunities for fertilization, but does not manage the act of fertilization. As with assisted insemination, IVF is described as a procedure for couples. For example, according to one fertility clinic website "eggs are fertilized with the *partner's* sperm and replaced in the uterus" (University of British Columbia IVF Centre 2001, emphasis added).

Whereas IVF is a considerably invasive and technologically intensive procedure, particularly for the woman's body, threats to kinship and nature are managed by presenting IVF simply as a more intense version of artificial insemination. As with artificial insemination, kinship is presented as unproblematic by foregrounding the genetic relationship between the prospective parents and child (IVF and other reproductive technologies involving donor gametes are discussed separately later in this section). Key threats to nature are also minimized by mobilizing the artificial insemination analogy which does not require as much cultural work to mitigate the points of tension. The physician fades into the background textually and visually in favour of detailed descriptions of gamete collection and preparation for fertilization, with an emphasis that fertilization takes place "naturally." The use of the term "replaced" in the clinic phrase "eggs are fertilized with the partner's sperm and replaced in the uterus" (University of British Columbia IVF Centre 2001) also implies that IVF is in accordance with natural conception. Note, however, the eggs cannot be "replaced" into the uterus since they were never there. The eggs were extracted from a woman's ovaries via a surgical procedure. Another fertility clinic website includes a consent form for IVF in

which the woman and man acknowledge their "natural parentage" (Ottawa Civic Hospital, GOAL Program 2001) of any child born to them through the IVF techniques.

One fertility clinic website provides a description of IVF that portrays the female body as a defective and unwilling participant and one in need of medical control to allow nature to take its course. For example:

> IVF has become the dominant ART [assisted reproductive technology] technology due to its simplicity, efficacy, and lack of invasiveness. A typical IVF cycle begins with *shutting down* the ovaries…subsequently the embryos are transferred into the uterus through the cervix and the pregnancy is *allowed* to begin.
> (Institute for Reproductive Health 2001, emphasis added)

This description of IVF constructs the reproductive technology as simple and non-invasive, yet in the next sentence describes manipulation of women's bodies in brutal language. The same website provides a description of IVF that constructs a relationship between a woman and embryos in which the woman's body aggressively resists pregnancy:

> In a typical IVF cycle eggs are collected, embryos are produced and transferred back into the uterus. Pregnancy does not always occur. When this happens it is tempting to speculate that the body is "fighting off the embryos" in some fashion presumably by using its immune system. It is only *natural* to think in this fashion. Typically couples are presented with good embryos which are transferred into this black box (the uterus). When the embryos do not implant, is it not *logical* to think it is the uterus in some way fighting off the embryos? It may seem *reasonable* but it is not true!
> (Institute for Reproductive Health 2001, emphasis added)

This description of IVF constructs women's bodies as not only defective but uncooperative infertility subjects. Further implicit is the view that women's bodies are described as wasting good embryos by rejecting them. Infertility in this context is clearly presented as the woman's fault.

Intracytoplasmic Sperm Injection

The primary difference between in vitro fertilization and intracytoplasmic sperm injection (ICSI) is the process of fertilization. With IVF, the eggs and sperm are manipulated into proximity, but the sperm must then be capable of fertilization. In contrast, with ICSI fertilization is a deliberate, managed event in which a single sperm is injected into an egg. ICSI is presented as an option for couples with a decreased chance of fertilization to give birth to their own biological offspring. For example, "ICSI allows many infertile couples, whose only choices had been insemination with donor sperm or adoption, to become parents of their own genetically related children, thereby reducing indications for TDI (Therapeutic Donor Insemination) and adoption" (Ottawa Civic Hospital, GOAL Program 2001). Again as with AI and IVF, by emphasizing the procedure as a solution for couples, and by emphasizing that the potential child will be their own biological or genetic offspring (that is, by using the husband's and wife's gametes), ICSI is presented so that it is not in conflict with naturalized biological kinship. The technologically mediated act of fertilization, although more invasive than the "natural" fertilization of IVF, is presented textually and visually as procreation story in

which a single sperm and egg represent the women and man. I discuss this procreation story in Chapter Six.

Egg donation

Egg donation is utilized when a woman cannot become pregnant using her own eggs. Typically, donor eggs are combined with the husband's sperm and the resulting fertilized eggs are inserted into the wife's body. One fertility clinic website describes the situation as follows: "if an egg problem exists, replacing poor quality eggs with eggs of better quality corrects the problem, and excellent pregnancy rates can be achieved (Markham Fertility Centre 2001). Egg donation requires the use of IVF or ICSI yet when these technologies are described on the websites they are presented as solutions for couples to have their own biological child.

Since egg donation presents a challenge to biologized or naturalized kinship additional work must be done to manage social relations, that is, to assign kinship status to the participants. Some fertility clinics negotiate this relationship by assigning the egg donor the role of altruistic helper. They are described as "helping a couple achieve their dream" (The Egg Donor Program and the Surrogacy Program 2001), giving the "precious gift" of parenthood (Fertility Center of New England, Inc. 2001) and saving a marriage from the heartbreak of infertility. One fertility clinic website describes an egg donor as a "fertility helper" (The International Fertility Centers for Surrogacy and Ovum Donation 2001) who assists a woman to become pregnant and give birth. This designation of

"helper" effectively denies the donor's genetic contribution to kinship. The wife, or infertile woman, is described as the mother, for example one website describes egg donation in terms of "fresh and frozen embryo transfers to the *mother"* (emphasis added) and "the mother will be able to carry the pregnancy, experience childbirth and breast feeding" (The International Fertility Centers for Surrogacy and Ovum Donation 2001). Thus, instead of maternal genetics, the experiences of gestation, birth and care-giving are emphasized as indicators of motherhood. The kinship status of the husband is presented as unproblematic, since his sperm is used. The husband's potentially problematic relationship to the egg donor is resolved by describing the wife as the mother and by describing the donor role primarily as mother's helper. Additionally, there is a shift in the fertility goal so that pregnancy and childbirth are the objective, rather than a female client's genetic relationship to the fetus.

Potential donors complete extensive applications including age, weight, height, ethnic background, religion, education, medical history, hobbies, and family. They undergo IQ testing, psychological testing, and background checks. These checks are not required for the egg recipient. Some fertility clinic websites offer couples the opportunity to view these applications online including photos of the egg donor and her children. One website describes how "the donor will be accompanied on her first visit to the doctor's office as well as to her retrieval" and will attend mandatory monthly support groups (The Egg Donor Program and the Surrogacy Program 2001). This statement is on a webpage with information directed to infertile couples considering egg donation, that is, potential egg recipients. The fertility clinic does not elaborate on why the egg donor will

be accompanied, but it suggests a measure of control over the egg donor's body by the fertility clinic on behalf of the infertile couple. Another website specifies that the husband of an egg donor must sign a consent form, although there is no indication on any website that the wife of a sperm donor must also provide consent. This policy implies that a husband has an interest in or ownership rights over his wife's eggs; apparently, a wife has no similar claims over her husband's sperm.

On some fertility clinic websites the description of egg donation resembles adoption or a dating or match-making service. Similarly, in their examination of sperm donor catalogues Moore and Schmidt (1999) describe how sperm are marketed in such a way as to construct different types of masculinity from which consumers may choose. In addition to the information on the egg donor application form described above, egg donors and couples complete extensive questionnaires and participate in interviews to provide information about likes, dislikes, aspirations, philosophies of childrearing, and photographs of family members and pets in order to be "carefully matched" (The Egg Donor Program and the Surrogacy Program 2001) The questions about non-genetic traits suggests that some ambiguity remains about whether gametes are truly alienable, or whether the egg donor is choosing a good home for her child.

Another aspect of egg donation that suggests additional kinship work is going on is the identity of the donor. Fertility clinic websites vary considerably on whether the egg donor may be known or must be anonymous. Some fertility clinic websites state that they work only with egg donors known to the couple; however, other fertility clinic

websites state that egg donors must be anonymous, although couples may view photographs. Some fertility clinics accept either known or anonymous donors. Some fertility clinics accept egg donations from patient's relatives, but state that cross-generational donors such as daughters and mothers are not permitted. Where egg donors are known to the couple, fertility clinic websites describe a series of meetings to discuss "emotional issues" (Fertility Center of New England, Inc. 2001). One fertility clinic website describes certain legal settings in which a known egg donor must undertake an adoption arrangement "even though she will not carry the child" (The Fertility Institutes 2001).

Egg donation represents a threat to kinship because of the perceived relationship of an adult to their gametes in North American kinship ideology; specifically, the relationship of a woman to her eggs. As described above, with artificial insemination, IVF, and ICSI there is no perceived threat to kinship because of the genetic relationship: the client husband and wife are utilizing their own gametes in the procedures. Additional work must be done on the part of the fertility clinic to address the tension introduced by egg donation so that gametes, and the genetic kinship relationship they embody, can be perceived as alienable and severable. Fertility clinic websites mobilize gift imagery to shape understandings of egg donation. In fact, "donation" itself constructs eggs as a partible substance. On the donor's side fertility clinics mobilize gift imagery to sever the kinship connection and on the recipient's side they mobilize intent to create a kinship connection. Egg donation also presents a threat to nature since it is not part of the conventional conception story. In contexts where the donated egg will be gestated by the

client (intended mother) some fertility clinic websites address this tension by shifting fertility goals as described above and by emphasizing signifiers of motherhood such as experiencing pregnancy, childbirth, and breastfeeding.

Sperm donation

Sperm donation is a process whereby sperm from an anonymous man is used for assisted insemination or other procedures such as IVF and ICSI. Sperm donation is indicated when the husband's sperm are not able to fertilize an egg. Additionally, two fertility clinic websites list sperm donation as a treatment for "same sex female partners" (Mount Sinai Hospital, Reproductive Biology Unit 2001) or "when there is no male partner" (Heartland Fertility and Gynaecology Clinic 2001). The technological steps in the process are the same as those described for assisted insemination, IVF, or ICSI.

Sperm donation is presented on fertility clinic websites far less frequently than egg donation and I elaborate on the incongruencies of the two forms of gamete donation in the next chapter. Some websites do not mention sperm donation at all, and those that do include sperm donation provide very brief descriptions and no images of this procedure. Where sperm donation is presented, it is listed as either donor insemination (DI) or therapeutic donor insemination (TDI), never simply as sperm donation. Sperm donors must be anonymous and there are no face-to-face meetings to discuss "emotional issues" as with egg donors at some fertility clinics. In a description of sperm donation one fertility clinic website emphasizes that anonymity between couples and sperm donors

is strictly maintained, whereas at the same fertility clinic egg donation is only anonymous by request. Another fertility clinic advises clients against using known sperm donors because of "the psychological and social problems that may be associated" (The Washington Center for Reproductive Medicine 2001) yet they state elsewhere on the website that egg donors may be family members.

Legal issues vary across North America. Each American state has different legislation that is rapidly changing (The American Fertility Association 2007). For instance, in several American states it is illegal for a person other than a physician to perform artificial insemination (Harrison 1995). In most American states and in some Canadian provinces paternity law distinguishes between insemination performed with medical assistance and without (Harrison 1995; Lewin 1995; Baird 1997). Thus women who utilize the technology of artificial insemination outside of a biomedical institution are vulnerable to potential custody disputes (Baird 1997). As described in Chapter One, recently an Ontario non-biological lesbian co-mother was awarded the legal status of mother, making her child the first in Canada to legally have three parents: the biological mother, the non-biological mother, and the biological father (Hanes 2007). In this case the biological father is also a social father rather than a sperm donor and all three parents are in favour of the legal ruling. In 2001 the British Columbia Human Rights Tribunal ruled that lesbians who have a child together with sperm from an anonymous donor can both register as parents on the child's birth certificate (Werner 2002), and same sex parents in California and some other states may have their names on the child's birth certificate as well (National Family Law Center 2007).

When sperm donation is used in conjunction with AI, IVF, and ICSI, the couple is presented as the undisputed parents of the potential child, and the anonymous donor has no parental rights. As with egg donation, the goal or objective shifts from a technologically mediated version of 'natural' conception (in which the fetus is genetically related to the husband and wife, and gestated by the wife) to highlight specific aspects of the procedures. For example, with sperm donation the goal becomes achieving a pregnancy, and experiencing pregnancy and childbirth. This is not the same goal as described for other reproductive technologies such as genetic surrogacy, egg donation, and ICSI in which the goal is a child genetically related to the male.

Sperm donation is presented in terms of a quality product. One clinic advertises that their selection includes samples from the nation's leading designer sperm banks specializing in specimens from men with specific backgrounds and physical and intellectual traits. Other clinics describe rigorous screening processes for genetic and sexually transmitted diseases, and careful matching to recipients, with the recommendation that donor characteristics closely resemble those of the male partner. Blood type, race, and eye colour are described as the most important. Some clinics assure that a limited number of women are impregnated using the same donor.

Similarly to egg donation, sperm donation poses a threat to kinship in terms of genetics. There appears to be greater work necessary to address the introduction of donated sperm than donated eggs. The presence of the sperm donor is addressed by

marginalizing the donor visually and textually. Sperm donors do not have the heroic role of marital saviours assigned to egg donors. There are no examples of letters of thanks to sperm donors or relationships that include face to face meetings. Perhaps the role of the physician in this case serves to distance the sperm donor from the recipient so there is no connotation of adultery with the female client/wife. Sperm donation does not pose a perceived threat to nature since, as I described earlier, the technological procedures are the same as for artificial insemination. However, it is worth noting that in contrast to egg donation, in which both the donor's body and recipient's body must undergo invasive procedures, with sperm donation there is minimal impact upon the donor's body and no impact on the infertile man's body since it is the woman client who is the recipient.

Genetic surrogacy

A genetic surrogacy arrangement is one in which the woman acting as surrogate is inseminated with sperm from the male partner of the couple seeking infertility treatment. The technological procedures are the same as with assisted insemination and sperm donation. Fertilization takes place inside the surrogate's body with her egg and the male client's sperm. As with gamete donation the fertility goal shifts to accommodate the additional participants. With genetic surrogacy the goal is described as achieving a healthy pregnancy, albeit a pregnancy located in another woman's body.

The male and female clients (the couple) are presented as the parents of the potential child; for example, in a testimonial on one website the couple writes how they

"had to trust" that the surrogate would "keep her promise to give us our child" (The International Fertility Centers for Surrogacy and Ovum Donation 2001). This indicates that the clients perceive the potential child as theirs, and that there is both distrust of and anxiety about the surrogate woman's potential claims to be a legal parent. To de-emphasize her "natural" kinship claims, the surrogate's role is described as a "helper" (The International Fertility Centers for Surrogacy and Ovum Donation 2001) and "friend" (The Egg Donor Program and the Surrogacy Program 2001).

Surrogacy laws vary between countries and within American states so that where surrogacy is legal, remuneration may be illegal. In Canada for example, currently surrogacy is legal but surrogacy for compensation (either for a fee or for profit) is illegal (Surrogacy in Canada Online 2007). In Washington state as well surrogacy for payment is illegal, with one clinic stating that "surrogacy for compensation is illegal and this process is carried out after a contract is developed between the surrogate (Good Samaritan) and the couple" (Washington Center for Reproductive Medicine 2001). In these cases surrogacy is legislated as appropriate only as an altruistic action. However in California, Arkansas, and some other American states surrogacy for payment is legal. Additionally there are variations in whether the surrogate's name or the female client's name appears on the birth certificate. States where the surrogate's name does not appear are described as states with favourable surrogacy laws. Additionally, depending on location, the female client may need to formally adopt the baby. There does not appear to be a parallel process in which male clients must formally adopt children born to their wife through sperm donation. But regardless of local laws, fertility clinic websites

present genetic surrogacy as an infertility remedy for couples and the couple is described as the parents.

Potential surrogates will fill out extensive application forms including information about medical history, personality, awards, accomplishments, and photographs of the surrogate and her children. Some questionnaires include a space for the surrogate's husband's feelings about surrogacy. The couple will also receive the results of the surrogate's psychological assessment, although the surrogate will not receive a psychological assessment of the couple. According to one website monthly support groups are mandatory for all surrogate mothers. On one fertility clinic website "neatness" counts (The International Fertility Centers for Surrogacy and Ovum Donation 2001): the application is handwritten and neatness, spelling, and grammar are described as important factors in the couple's decision to choose a surrogate. The psychological assessment, mandatory support group, and literacy indicators all point to social structural inequalities between the surrogate and the clients. As with egg donation, the way some fertility clinics present this match-making process resembles both adoption and a dating service, for example "surrogates and recipients are carefully matched together to assure a successful ongoing relationship" (The Egg Donor Program and the Surrogacy Program 2001).

Anonymity in a genetic surrogacy context is more flexible than with gamete donation. Surrogates and infertility clients may speak on the phone or meet in person to determine what degree of contact they will have before and after the birth. This is not an

egalitarian decision, however, as ultimately the clients will determine the nature of their contact, if any. One fertility clinic website encourages a parting of ways following the birth of the child, and does not accept surrogates who want to maintain a relationship with the couple and child.

In the typical scenario in which the husband's sperm is used, genetic surrogacy does not present a significant threat to nature, it is kinship which must be managed. On the part of the surrogate, gift imagery is mobilized again, as giving a gift to an infertile couple and giving the gift of family. For example, language on The International Fertility Centers for Surrogacy and Ovum Donation website directed to potential egg donors and genetic surrogates is very similar. On the part of the female client, intent is mobilized as a kinship determinant. Again, the physician stands in to remove any connotation of adultery between the surrogate and the male client. The advantage of genetic surrogacy is described as having a child genetically related to the husband, but the kinship threat is that the child is not genetically related to the wife and moreover the pregnancy is located in another woman's body. So, the determinants of kinship between the woman client and the child are neither genetic nor gestational. Rather, as Cussins (1998a and Thompson 2005) found in her study of IVF participants, the kinship determinants in genetic surrogacy are articulated through her relationship to the child's genetic father, her ability to contract the clinic and the surrogate woman, and her role in raising the child.

Gestational surrogacy

Gestational surrogacy differs from genetic surrogacy in that the male and female infertility clients provide the gametes which, once fertilized through IVF, are inserted into the body of another woman for gestation and birth. Gestational surrogates are sometimes referred to as "gestational carriers" or "surrogate carriers." Genetics once again assumes primacy in determining kinship status and gestation is relegated to a subordinate role in contrast with egg donation in which gestation and childbirth becomes the fertility goal.

One fertility clinic website describes gestational surrogacy as a process whereby a woman carries a pregnancy produced by an embryo that is not genetically related to her and then returns the child to its genetic parents at birth. Interestingly, this statement is made at a clinic that also provides egg donation and embryo donation: processes where the genetic determinant of kinship status must be de-emphasized in favour of gestation, pregnancy, and childbirth.

Gestational surrogacy is clearly positioned on fertility clinic websites as preferable to genetic surrogacy since the threat to kinship can be managed by returning to the reassuring role of genetics as a determinant of kinship. Gestational surrogacy can in some ways be seen to follow the AI, IVF, and ICSI continuum of technological intensification while maintaining the essence of the conventional conception story by focusing on gametes and genes. However, in this case, in addition to the key threats of technological tools and the presence of a physician, the pregnancy is located in another woman's body. The kinship work being done is to marginalize the role of gestation and

to enhance the genetic determinants of kinship. The physical link between woman and fetus is subordinated to the genetic link of client and fetus. Gestation is constructed as a temporary care-giving situation (like a babysitter) and the woman like a vessel or incubator. The surrogate may be discussed as compassionate, as a dear friend, marital saviour and Good Samaritan to explain her presence in such a way as to pose no threat to the husband-wife relationship and the parent/child relationship of the infertility clients to the fetus.

4.2 Relationships Among Participants

4.2.i. Participant/Physician

As described above, the widespread acceptance of medicalized and physician-supervised childbirth likely means that the role of the physician is regarded generally as non-threatening; yet fertility clinics continue to construct the physician's role in a way that minimizes any threat to understandings of nature and kinship. In the reproductive technologies described above the participant/physician relationship is characterized as a doctor/patient relationship, or more specifically a doctor/couple relationship (only one website treats infertile "individuals" (Royal University Hospital 2002)). Locating the experience firmly in the medical paradigm provides a role for the physician that does not compromise the nuclear family narrative. Fertility clinic physicians are described as providing direction, guidance, and education. They are portrayed as firmly in control of the reproductive technologies and in control of nature, which has failed and needs to be

managed. They are described as wielding powerful tools to precisely manage the activities associated with the reproductive technologies and services. They prevent female bodies from interfering with the technologies, they administer hormones to suppress natural cycles, they manage embryonic growth, and they "allow" (Institute for Reproductive Health 2001) pregnancies to begin by insemination, fertilization, and selection of embryos to transfer for potential implantation. Despite this key and instrumental role, the physician often disappears from the website text and images during explanations of procedures. For example, descriptions of services may include statements in active language that the doctor provides caring, individual service or the physician will ask about symptoms and medical history, but then in descriptions of reproductive technologies the physician's role is described in passive language, such as "an egg is removed from a follicle " (IVF Canada 2001) or "mature follicles are identified by vaginal ultrasound" (Heartland Fertility and Gynaecology Clinic 2001).

Additionally, presenting the physician's role as a "fertility helper" explains his presence in a way that is in harmony with nature. As described above, the role of the physician in procedures such as assisted insemination and in vitro fertilization is compared to pollination in the way that a bee is necessary for fertility of flowers and other plants.

The physician/participant relationship is also one of gratitude. This is expressed on websites that include testimonials from participants. These testimonials are expressed as letters to the physician, sometimes presented as blocks of typed text, and sometimes as

scanned images of letters. Typical phrases on one website (Institute for Reproductive Health 2001) are “words cannot express our gratitude to you”, “we are forever grateful”, and “heartfelt thanks and appreciation.” These expressions also extend to love, such as “you will always have a special place in our hearts” and “we love you.” These letters are presented as from participants who have gone home with a baby. The doctors are described as empathetic and compassionate individuals who change the world for the better, and as miracle workers the participants have been blessed to work with. Physicians are thanked as “baby-makers” (Mount Sinai Hospital, Reproductive Biology Unit 2001). In fact, one website has this phrase in its website address. The gratitude component of the participant/ physician relationship is socially constructed yet presented on the websites as appropriate and normative.

The physician’s role is minimized where it presents a threat to nature, such as in artificial insemination, and then foregrounded to mitigate key threats to kinship by creating appropriate space between other participants such as female clients and sperm donors, and male clients and genetic surrogates. In the first instance the role of the physician as intermediary between the woman and man is naturalized and equated with pollination so that the ‘unity’ of woman and man, egg and sperm is preserved. However, in the case of sperm donation for example, the physician creates distance between the woman and male donor—they could theoretically just have sex—but this is not acceptable socially. The physician as intermediary in this case removes any connotation of adultery by removing the sexual component (Eichler 1988).

4.2.ii Contracting Woman/ Contracting Man

The fertility clinic websites also present potential clients as those who have suffered in body and spirit with their infertility. The websites describe anguish, overwhelming frustration, repeated failure, personal defectiveness, and a roller coaster of hope and despair. Clients' efforts to have a baby have been heroic but have failed. These descriptions of suffering and personal failure are typically presented together with the theme of hope, juxtaposing the experience of failure with the dream of a baby. The fertility clinic then steps in to bridge the gap, offering a chance of success. I cannot overemphasize the degree to which success and achievement permeate the fertility clinic websites and home pages in particular. The experience is presented as a personal goal that may be achieved with hard work. Success is described as attainable for those participants who put in the effort. Couples can achieve their dreams – achieve pregnancy – if they stick it out. The infertility evaluations described on the websites are presented as a series of tests one can fail or do poorly on, for example, IVF which does not result in a pregnancy is referred to as a failed IVF attempt. After describing the hard work necessary and then evaluating the participants as potentially defective, the fertility clinics present the good news that even damaged or defective bodies can be helped, and participants can achieve their pregnancy goals. The message is clear that couples must be willing to work hard to achieve their dreams, but with dedication the goal of pregnancy can be achieved. Indeed the name of one program incorporates the acronym GOAL (Ottawa Civic Hospital, GOAL Program 2001).

4.2.iii Individuals/Gametes

Fertility clinics use textual and visual strategies to assign physicians a role that supports the nuclear family relatively easily. However, considerably more work must be done to account for the adult/gamete, adult/embryo, and parent/child relationships in this framework. The relationship between an individual and their gametes (eggs or sperm) is described very differently depending on context. In reproductive technologies utilizing egg donation or sperm donation, one's gametes are alienable and kinship ties to potential children may be severed. In these scenarios kinship is determined by intentionality and by the child's genetic relationship to one partner. Conversely, in reproductive technologies where the couple uses their own eggs and sperm, gametes are naturalized as incontestable kinship determinants and therefore portraying technological intervention such as AI, IVF, and ICSI as ultimately supporting natural kinship.

The above discussion of reproductive technologies and relationships reveals that gamete donor anonymity is also a kinship determinant. Several examples demonstrate that deliberate anonymity functions as a kind of intent in severing kinship ties between a sperm donor and his sperm, and between an egg donor and her eggs. For instance, I described the strict policies for sperm donor anonymity as well as cautionary tales from fertility clinics that the use of known sperm donors is fraught with psychological and social problems. I also described how sperm donor anonymity and the means of insemination (by a physician or by a woman outside of a biomedical setting) affects the legal parental status of the sperm donor. Egg donor anonymity is variable, with some fertility clinics insisting on anonymity and others allowing for known donors.

Legislation also varies in egg donation contexts so that the egg recipient must adopt the potential child.

While gestation, birth, and breastfeeding feature in discussions of egg and sperm donation they do not appear to have constitutive power. These exclusively female activities that would seemingly be the most essential and self-evident markers of parenthood are not mobilized as determinants of kinship but rather as rewarding experiences. Thompson (2005) reports how gestation is increasingly equated with child care for both conventional pregnancies (in which a woman gestates a fetus created from her egg that she intends to raise as her own child) and gestational surrogacy arrangements (in which a woman gestates a fetus created from another woman's egg that she does not intend to raise as her own child). In the case of conventional pregnancy the child care is construed as parental child care and is subject to increasing medical surveillance and intervention. In the case of gestational surrogacy the child care is compared to that of a babysitter or foster parent (Rose 1996).

The mathematical formulae utilized by The International Fertility Centers for Surrogacy and Ovum Donation demonstrates how when a female client is able to gestate but not contribute gametes, the benefits of the reproductive technology in question (such as egg donation or embryo donation) include the experience of gestation, childbirth, and breastfeeding. Similarly, Thompson (2005) describes how whereas female infertility patients prefer a child related to them genetically, they also want to experience pregnancy. These signifiers of natural motherhood also appear to minimize the distance

between the woman and fetus similarly to the way in which women bridge the distance between themselves and a fetus gestated by a surrogate mother by attending prenatal classes and medical appointments and being present at the birth (Roberts 1998).

4.2.iv Parent/child

The parent/child relationship is best understood as part of the nuclear family narrative I discuss in Chapter Six. Fertility clinic websites appear to offer couples the opportunity to "cure" biological infertility by remedying social childlessness. For example, excellent "take-home baby rates" (The International Fertility Centers for Surrogacy and Ovum Donation 2001) speak to the creation of nuclear families, regardless of the method. At the beginning of this chapter I described how fertility clinic websites tend to use the terms *egg*, *sperm*, and *embryo* when discussing specific reproductive technologies, and *children* and *family* when discussing infertility in a more general sense. This selective and strategic use of terminology appears to serve two purposes. Firstly, focusing on embryos rather than babies accommodates the goal shifts I described. For example, in genetic surrogacy arrangements the websites describe a shift in fertility goals away from having a child genetically related to both the male and female partners to having a healthy pregnancy, even though the pregnancy is situated in another woman's body and the embryo was formed using her egg. If the fertility goal were to be articulated narrowly as "having a baby" rather than the broader "creating a family" then reproductive technologies in which gestation takes place in another woman's body would not be as amenable to supporting the overarching nuclear family narrative I discuss in Chapter Six. By focusing on the successful creation of embryos and on successful

pregnancies, fertility clinics can offer a broad arrangement of reproductive technologies and still meet the needs of infertile couples seeking to create families. Secondly, when describing egg donors and surrogates as gift-givers they are invariably described as giving the gift of family. In other words they are enabling the creation of the nuclear family. If egg donors and surrogates were described as giving the gift of babies it would violate the gift metaphor, since in North American kinship ideology human beings are not alienable and subject to ownership. More importantly, giving the gift of a baby would also structure egg donation and surrogacy as adoption. Infertility clients have chosen to visit a fertility clinic to remedy their childlessness, not an adoption agency, because they want a child of their "own" (Toronto Center for Advanced Reproductive Technology 2001). The preference for children of one's "own" is clearly articulated in the way that ICSI is heralded as a technology that allows infertile couples to have a child of their own, rather the less desirable sperm donation or adoption. Thompson argues that:

> it is not prima facie obvious that ARTs [assisted reproductive technologies] should be patterned in the United States more like reproductive choice than like adoption. After all, many different people are involved in making parents and children by ARTs, and in many cases, egg or sperm or embryo donors, or surrogates, are involved in the biological bringing in to being of ART parents and children, even down to mandatory adoption by one or both of the intended parents for some procedures in many states (Thompson 2005:7).

Couples whose infertility is "remedied" through embryo donation could be constructed as adoptive parents, and female partners in genetic surrogacy arrangements could be constructed as step-mothers. However, by situating infertility as a medical condition treatable by physicians at a fertility clinic, websites are able to represent their services as treating infertility so that couples go home with a child of their "own" rather than an adopted child.

CHAPTER 5:

SOCIO-TECHNICAL NETWORKS

I have described the reproductive technologies on fertility clinic websites, and how relationships among participants in these technologies are constructed, As I've suggested, the fertility clinic websites draw from culturally meaningful linguistic and visual symbols to provide convincing, self-evident, and non-disruptive explanations for the meaning of technologies and procedures. In this chapter, by looking at reproductive technologies in four groupings I suggest how the explanations offered on fertility clinic websites become problematic. The four groupings I discuss are:

- artificial insemination, in vitro fertilization, and intracytoplasmic sperm injection;
- egg donation and sperm donation;
- artificial insemination, sperm donation, and genetic surrogacy; and,
- egg donation, embryo donation, and gestational surrogacy.

I will demonstrate how several reproductive technologies utilize the same technical elements (tools and procedures) and yet differ in their social elements (assignation of kinship status to participants). This cultural practice can be understood by employing the concept of "socio-technical networks." As described by Hanseth and Monteiro (1998), procedures or acts are influenced by multiple factors such as prior experience, governing regulations, and the efficacy of the procedure or equipment: Acts do not occur in a cultural vacuum but under the influence of a wide range of factors. The act and these factors, both technical and non-technical, together form a socio-technical

network. These social and technical elements constitute the network as a whole. Severed from the social elements the technical elements have no cultural meaning; together, they are cultural practice. When seen as socio-technical networks, the reproductive technologies I grouped together become separate processes created as much through cultural meaning as through utilization of technical tools and procedures.

Although she does not use the term socio-technical networks in her study of Canadian families and social policy, Eichler (1988) has noted that technology must be understood in the context of the social arrangements within which they are used. For example, she notes that with artificial insemination, it is irrelevant to the biological mechanics of the procedure whether an egg is fertilized by sperm from a husband or donor; however, it does matter socially. Eichler also notes that surrogacy is often discussed along with 'new' reproductive technologies yet "this arrangement need *not* involve one of the truly new technologies; nonetheless…it is a new social arrangement (1988:182). In this chapter, I use the concept of sociotechnical networks to highlight the social and cultural aspects of the assisted conception technologies offered by fertility clinics.

5.1 AI, IVF, and ICSI

AI, IVF, and ICSI are often presented as a continuum of technological intensification. They usually appear in this order in website lists and descriptions of

technologies available. IVF is described as the next step beyond AI, and ICSI is described as the next step beyond IVF. AI has been practiced for decades if not longer and is largely unproblematic. It is represented as common, easy, and without challenges to the kinship claims of participants. I discuss this more fully in the next chapter, but in brief, the culturally familiar narrative of the egg and sperm meeting to form a union is not disrupted. The physician's role is constructed as that of a helper. Conception and gestation are still viewed as natural, just with help. When these three technologies are presented as a continuum, AI becomes the analogy for IVF and ICSI. IVF and ICSI are presented as more intense versions of AI and so can therefore still be understood in terms of a simplified conception story. Using AI as an analogy prevents any disruption in the narrative arising from the threats to kinship and nature described in Chapter Four. For example, in IVF gametes are obtained from a woman and a man and combined in a laboratory. If an egg(s) is fertilized by a sperm, it is inserted into the woman's body. This process requires drugs to stimulate egg production in the woman's body, daily blood tests, pelvic exams, egg retrieval via laparoscopy, and the placement of eggs and sperm together in a culture dish (Achilles 1990). IVF is distinctive from artificial insemination in terms of the medical technology and expertise required, as well as the emotionally stressful, physically invasive, and financially taxing nature of the procedure (Achilles 1990). Nevertheless, IVF is presented as the egg and sperm meeting and nature taking its course with the help of a physician. Descriptions of IVF also emphasize that it is the man and woman's (the intended parents) own egg and sperm so the potential baby will be their genetic descendant.

On the websites, ICSI or intracytoplasmic sperm injection is presented as IVF taken to the next step. However, in contrast with IVF where a sperm must fertilize an egg, with ICSI fertilization is a managed event. With IVF physicians and other technical personnel work to increase the chance of fertilization by manipulating gametes into proximity. Eggs and sperm are collected, subject to preparatory procedures, and placed together in a laboratory dish. Eggs and sperm must then both be capable of fertilization. In contrast, with ICSI the manipulation of gametes extends to the moment of fertilization in that a single sperm is selected and injected directly into an egg. Other procedures associated with this technology include drugs used to stimulate a woman's egg production and processes to increase the chance of implantation when the embryo is inserted into the woman's body (assisted hatching where a solution is applied to thin the outer shell). Embryos are sometimes inserted into a woman's fallopian tube rather than the uterus as that may increase the likelihood of implantation. The sperm is presented as having agency despite being selected and injected. For instance, diagrams of ICSI at the point of sperm injection represent the sperm as actively swimming rather than being passively injected. I discuss the active representation of sperm further in Chapter Six. Additionally embryos are described as being "replaced" (University of British Columbia IVF Centre 2001) into a woman's body with the connotation that the embryos are returning to their natural place after helpful intervention, despite the fact that the embryos have never been in the woman's body and are a technological creation.

AI is again employed as the analogy for ICSI. The egg and sperm are still "meeting" (IVF Canada 2001) with a physician's help and the presence of the physician

as a third party is explained in a way that gives the physician a purposeful and supporting role. However, there may be multiple medical practicioners involved in an IVF or ICSI scenario: physicians, lab technicians, and embryologists may harvest eggs, select and inject sperm, select embryos for placement into the woman's body, and process embryos for cryopreservation. These additional participants are obscured when the process is seen through the AI lens as they are collapsed into one helper physician. This is necessary to preserve the pollination symbolism that I discuss in Chapter Six, in which the physician is equated with a pollinator in the conventional birds and bees conception story. The presence of additional personnel would not support this imagery.

What is common to the descriptions of AI, IVF, and ICSI is the way that fertility clinic websites emphasize a simplified story of the egg and sperm. This is essentially "the birds and bees", a simple, mechanical explanation of fertilization. The egg and sperm in these stories also stand in for the man and woman: an egg and single sperm are described as "meeting" or "uniting" (Beldecos et al 1989; Martin 1991). Of course, unmediated unassisted conception would involve multiple sperm and possibly more than one egg. When the egg and sperm story of AI, ICSI, IVF is presented visually, it is often through simplified illustrations or animations of a single sperm fertilizing an egg. In these images the sperm is usually magnified so that the size disparity between egg and sperm is significantly reduced. I discuss the egg and sperm conception story more fully in Chapter Six.

By emphasizing the story of the egg and sperm meeting, which for North Americans foregrounds biological, genetic relationships, the technologies can be presented as still largely natural: the egg and sperm just need help to meet. IVF and ICSI can therefore be presented as having the same meaning as AI. In this way the unproblematised non-threatening assisted insemination is extended to IVF and ICSI both considerably more invasive and technologically complex procedures than AI.

The AI, IVF, and ICSI continuum becomes an extension of the socially acceptable notion of pregnancy requiring medical surveillance and supervision. In Canada and the United States, pregnancy is firmly normalized as something natural but medically mediated, monitored and assisted. The development of reproductive technologies raises new levels of control and influence; for example, with IVF the process of conception moves firmly into the hands of the physician (Achilles 1990).

5.2 Egg donation and sperm donation

Egg donation and sperm donation are not parallel experiences on fertility clinic websites. Egg donors and sperm donors do not have the same kinds of visibility and do not have the same kinds of relationships to infertile couples. Egg donors and sperm donor differ in terms of their visibility. While some fertility clinics accept donations from known egg donors (relatives or friends of the infertile couple) no clinics will accept known sperm donors: all sperm donation is strictly anonymous. By contrast, even when

egg donation is anonymous, infertile couples can view photographs of potential donors and their children and families. Sometimes these photographs are available for viewing on-line. However, none of the fertility clinic websites in the sample indicate that photographs of sperm donor were available. Some fertility clinics offer egg donors and infertile couples the opportunity to meet or exchange phone calls and letters. The egg donors are sometimes characterized as "friends" of the family. Even more frequently they are characterized as generous, altruistic, and marital saviours (saving couples from divorce due to the stress of infertility). Sperm donors do not have parallel relationships with infertile couples and remain on the margins; moreover, they do not have the heroism of egg donors.

The fertility clinics websites reproduce the idea that egg donation is less problematic to family formation than is sperm donation. For example, one fertility clinic describes how "if both ovaries are absent, donor egg IVF is the only hope of producing a genetically related child" (The Washington Center for Reproductive Medicine 2001). However, the potential child would be genetically related to the male client only. As described earlier in this chapter, "sperm donation" is not listed as a treatment on any of the fertility clinic websites in the sample, but is referred to indirectly as "donor insemination," or "therapeutic donor insemination." By contrast, egg donation is never referred to as "therapeutic egg donation" suggesting that to donate one's eggs is not a medical or technological act, but a social one. In the following chapter, I discuss the assumptions about gender that underlie the differences in how egg donation and sperm donation are represented on the websites.

5.3 AI, sperm donation, and genetic surrogacy

In the first grouping of AI, IVF, and ICSI, I described how three different technologies are presented as structurally analogous. In the next two groupings I discuss how three similar technologies are presented as different. In contrast to how AI, IVF, and ICSI are typically discussed in series together, AI, sperm donation, and genetic surrogacy are always presented separately. What I find striking about this strategic separation is that identical tools and procedures are used in each instance. In AI, sperm donation, and genetic surrogacy, sperm are inserted into a woman's body and fertilization takes place inside the woman's body with her own egg. However, these three scenarios are described consistently as different reproductive technologies. Since the tools are the same, it is the relationships of the participants that changes the meaning of the act and therefore creates separate technologies. Achilles (1990) notes that artificial insemination could arguably not be called a reproductive technology as the simplicity of the procedure means that it does not need to take place in a clinical setting and the woman can do it herself. Achilles (1990) further notes that artificial insemination with the husband's sperm, artificial insemination with donor sperm, and genetic surrogacy are, technically speaking, the same procedure.

As described earlier, AI is presented on the websites as essentially unproblematic. The participating man and woman are the undisputed parents because "nature", reduced to fertilization of two gametes (rather than "nature" as sexual intercourse), has not been disrupted. This construction maximizes the role of genetics as the natural determinant of

descent. However, in the cases of sperm donation and genetic surrogacy genetics is backgrounded in favour of an alternate kinship determinant. This is where intent is mobilized. As with the sperm and egg story, fertility clinic websites draw upon pre-existing cultural narratives to reinforce their claims. Intent is a narrative also discussed in intellectual property rights. The paradigm of intellectual property law (copyright) has been invoked as an analogy for determining parental rights in American custody cases involving reproductive technologies, with intentionality as the basis for parenthood (Harrison 1995). Stumpf (1986 cited in Rose 1996:619) asserts that "thoughts of initiating parents which become embodied in the creating of a child parallel the mental element at the root of intellectual property protection." Genetics and intent are two seemingly mutually exclusive bases for descent mobilized by fertility clinic websites. In the first instance, fertility clinic websites present a model of kinship based on blood ties, and naturalize reproductive technologies by assigning prime value to genetic relationships (Rose 1996; Cussins 1998; Helmreich 1998). In the second instance, genetic relationships may be superseded by the intentions of the participants, in particular the intentions of potential clients (infertile couples). By mutually exclusive bases for descent I mean that claiming kinship through genetics involves understanding gametes and their relation to the self as inalienable. However, in order to claim kinship through intent gametes must be alienable and the relationship to self must be severed. Interestingly, genetics and intent are often mobilized simultaneously, for example, when one parent has a genetic relationship to a potential baby and the other does not.

The advantages of sperm donation are described as having a baby genetically related to one parent and allowing a couple to experience pregnancy. The phrase "sperm donation" is in fact not used, instead, this process is described as donor insemination (DI) or therapeutic donor insemination (TDI). The sperm donor remains invisible and has no parental rights. The fertility goal shifts in this case from 'natural' genetic parenthood to experiencing pregnancy. This allows a couple to still reach their goals and go home with a baby.

With genetic surrogacy, the husband's sperm is inserted into a surrogate. As described in Chapter Four, it is understood that the husband's wife is the intended mother and that upon childbirth the surrogate will "return the child to its parents" (IVF Canada 2001). Although the tools and actions are the same as with sperm donation, in this case the narratives are applied to the opposite participants: the man's role as genetic provider is maximized and his claim to parenthood is clearly undisputed, while the "surrogate" woman's claims to parenthood can be severed in favour of another woman who intends to be the mother.

Keeping in mind that there is actually only one technology being employed (that of artificially inserting sperm into a woman's body) it is possible to discern that the additional technologies of sperm donation and genetic surrogacy are in fact ways of constructing the competing kinship status of the participants. There is a delicate balance between the primacy of genetics and the role of intent in determining descent, and in

these scenarios intent overrides genetics as necessary to preserve the fertility goal of creating a family.

5.4 Egg donation, embryo donation, and gestational surrogacy

Egg donation, embryo donation, and gestational surrogacy each involves one or more additional participants beyond the infertile couple/intended parents. In terms of the technological procedures they are the same act: a woman provides an egg which is fertilized in a lab (through IVF or ICSI) and the resultant embryo is transferred to another woman who will gestate and deliver the baby. Whether the process is described as egg donation, embryo donation, or gestational surrogacy depends on which of the participants are the intended parents. In egg donation, the egg provider is not the intended mother so genetics is minimized in favour of the experience of gestation and the reproductive technology is reduced to an altruistic or generous act of giving. In the case of gestational surrogacy, the opposite is emphasized: the role of gestation is minimized in favour of the genetic relationship between embryo and the intended mother. Finally, with embryo donation, the genetic link to both the male and female gamete contributors is severed in favour of the intended mother (who will gestate the baby) and her husband (the intended father). It is interesting that these embryos were originally intended to be the children of the gamete contributors, but based on their decision to “donate” they may change their intent and therefore change their kinship status.

These groupings of reproductive technologies highlight the entrepreneurial activity of fertility clinic in drawing upon culturally meaningful narratives and linguistic and visual symbols to establish different kinship determinants for each reproductive technology. For example, by presenting IVF and ICSI as analogous to artificial insemination, the fertility clinic websites suggest that the same simplified procreation narrative can be applied: the egg and sperm meet with the help of a physician and nature takes its course. While technology may be emphasized in terms of state of the art medicine, its potentially disruptive impact on biological kinship is de-emphasized by creating an analogy to a technology that is perceived as unproblematic. The differences in the way that sperm donors and egg donors are presented suggests that gender poses separate challenges to the nuclear family narrative, requiring different explanatory work on the part of the fertility clinic. Fertility clinic websites draw extensively on the culturally widespread themes of genetic essentialism in which genes embody personhood and biological continuity (Rose 1996; Franklin 2003) and of intentionality as they assign kinship status to participants in the reproductive technologies who may have no genetic connection to the resulting embryos. Genetics and intent are mobilized as contrasts and as complements, depending on the reproductive technology. Finally, gamete donation, embryo donation, and genetic surrogacy show how the fertility clinics work to suggest what is alienable from male and female bodies, and by what mechanisms kinship ties to the gametes and embryos may be maintained or extinguished.

To this point in the thesis, I have described fertility clinics as entrepreneurs seeking to shape specific understandings of reproductive technologies and to structure the

experience as one of hard work and achievement. I provided an overview and two specific examples of fertility clinic website content that exemplify the way nature and kinship are mobilized to shape the meaning of technologies and to describe roles for participants that do not threaten the nuclear family narrative. I also described how relationships among participants are presented in terms of each reproductive technology, and how technical and social elements come together to form socio-technical networks that explain how similar procedures are identified as separate technologies. In the final chapter I discuss these results further, examining how fertility clinics mobilize symbolic and semantic domains of nature and kinship, the narrative of the nuclear family, and the reproduction of conventional gender stereotypes.

CHAPTER 6:

ANALYSIS AND DISCUSSION

Contemporary anthropological kinship theory has re-invented the conventional nature/culture dichotomy to account for dynamic practices of kinship in which culture instructs nature (Franklin 2003; Thompson 2005). Franklin (2003:71) describes a "genetic gap" between so-called objective genetic facts and socially constructed identities. Within this gap is the space where the social meaning of DNA is culturally constructed. I investigated the mobilization of nature and kinship on fertility clinic websites to explore the social construction of kinship and nature in the context of fertility clinic websites. In doing so I argue that fertility clinics privilege particular representations of reproductive technologies in which those technologies are simply tools to create nuclear families. As I've suggested, the technologies offered by the clinics pose different sorts of threats to the dominant and conventionalized view of reproduction as the birth of a child to a man and woman following sexual intercourse between that man and woman. In order to mitigate those threats and sustain that dominant narrative of family formation, culturally specific kinship determinants are invoked in different reproductive technology contexts to foreground some relationships and background others. In this chapter, I utilize discourse analysis to explore in more detail how fertility clinics construct regimes of truth, identifying themes clinics deploy to promote particular understandings of nature and kinship that support an overarching nuclear family narrative, and examining how textual and visual practices on clinic websites reinforce conventional gender stereotypes that are supportive of that narrative.

6.1 Nature and Discourse Analysis: Regimes of Truth

Discourse analysis is a broad approach concerned with the politics of meaning, in which meaning, representation, and culture are understood as constitutive; that is, discursive practice is a manifestation of shared culture, a site from which culture emerges (Hall 1997; Blommaert and Bulcaen 2000; Bernard 2002). I approached fertility clinic websites as instances of public discourse. Through an analysis of text and images on these websites I aim to identify the social and cultural aspects and key shared meanings of those images and texts, particularly as they relate to ideas about and practices of kinship and nature. My analysis is also concerned with the politics of meaning. That is, with highlighting how language, narrative, image, and interpretations are inseparable from relationships of power.

Discourse analysis also emphasizes historical specificity. Of particular relevance for my thesis is the way that historically specific understandings become invisible once embedded in a discourse; in other words a discourse can naturalize a particular way of perceiving the world (Hanks 1989; Rose 2001). For example, the concept of the "laws of nature" is rooted in metaphor and marked by its political and theological origins. These laws have been historically conceptualized as imposed from above, so the metaphor of laws of nature carries the presupposition of an ontological hierarchy shaping meaning and cultural practice (Keller 2001). Strathern (1992) describes how Darwin used ideas of relatedness among human beings to depict relatedness among species. Relatedness among species is taken as a given – naturalized – to describe and dictate relatedness

among people; that is, kinship reflects nature. Kinship is the social construction of natural facts; however, what are taken as natural facts are in fact social constructions (Martin 1991; Strathern 1992; Franklin 2003).

These naturalized discourses, or regimes of truth, become particularly powerful when located in socially powerful institutions such as medicine and science (Rose 2001). Fertility clinic websites establish their voice of authority through medical legitimacy, constructing prospective clients as patients whose childlessness or difficulty in conceiving is a biological problem which can be remedied, cured, by the application of medical knowledge and technology administered by a physician. Websites communicate their regimes of truth through detailed, "scientific" descriptions of reproductive technologies, through patient education seminars, and through truth-creating visual strategies of magnification, scale, and animation. In this way fertility clinics are able to construct subjects and social categories: they are able to define the social roles and kinship statuses of participants in the reproductive technologies they provide. This process is exemplified by the socio-technical networks described in Chapter Five, in which I grouped different reproductive technologies together to demonstrate how nominally different technologies utilize the same technical elements (tools and procedures) yet differ in their social elements (assignation of kinship status to participants). These social and technical elements together constitute socio-technical networks. As entrepreneurs, fertility clinics shape these socio-technical networks by influencing the social component: they draw upon culturally meaningful paradigms, stories, and metaphors to provide explanations that will encourage participants to use their services. If an interpretation is to be meaningful it must be embedded in a

community of common practices and shared conceptual universe (Scholz 1988; Keller 2001). As Keller suggests, "[m]etaphors work to focus our attention in particular ways, conceptually magnifying one set of similarities and differences while dwarfing or blurring others, guiding the construction of instruments that bring certain kinds of objects into view, and eclipsing others" (2001:139). In the literature review I described how women and men participating in reproductive technologies draw upon different metaphors to control the location of nature and kinship, mapping it onto the appropriate body (Cussins 1998a; Teman 2001; Greil 2002). I now discuss how fertility clinic websites do the same by employing key linguistic and visual symbols structure relationships among participants in reproductive technologies.

Before I turn to a discussion of the overarching nuclear family narrative I provide an example to clarify what I mean by linguistic and visual symbols, themes, and narratives. In essence, cultural narratives are composed of themes which are, in turn, constituted through symbols. In North America, it is not uncommon to refer to reproduction as "the birds and the bees." Based on personal knowledge and an internet search, I found that *birds and bees* is used to refer to the biological elements of sexual reproduction and to sex education. I searched the internet on three search engines and several anthropology and other social science indexes for work on birds and bees imagery. The articles I found on this topic which had "birds and bees" in the title were either about birds or bees as biological beings or else used the widely recognized language standard *birds and bees* to refer to sex or sexuality. The only two articles which specifically addressed birds and bees imagery were a study of animal symbolism in

English church architecture (Collins 1913) and an internet publication about psychological symbolism in tarot cards (Schueler 1997).

By invoking the metaphorical analogy of two non-human species in the animal world, birds and bees, we are to understand reproduction as a purely biological process free from cultural interpretation. Specifically, and as suggested by these titles[4], birds and bees connotes nature, natural reproduction, and basic biological mechanics as contrasted with emotions (desire), technology (test tubes), and non-nuclear families (single women and lesbians). Birds and bees is a widely recognized language standard referring to the physical mechanics of sex as distinct from sexuality, from emotional, sensual, and erotic qualities, and in most instances from technological intervention.

I view "the birds and bees" as a theme, that is, as a recurring pattern of linguistic and visual symbolic elements. The birds and bees theme, for instance, includes specific symbols such as pollination, in which the role of birds and bees as pollinators is conceptually equated with the role of fertility clinic physicians in reproductive technologies such as artificial insemination, IVF, and ICSI. The birds and bees and other themes which I discuss in this chapter are the frameworks of interpretation by which the meanings of kinship and nature are inscribed onto objects, people, and procedures on fertility clinic websites.

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[4]*Birds Do It. Bees Do It. So Why Not Single Women and Lesbians?* (Robinson 1997), *Beyond the birds and the bees: constituting a discourse of desire in sexuality education* (Allen 2004), *Birds and bees for test tube kids: talking with children about their high-tech conception* (Stenson 2003), and *From birds and bees to babies? Can theories on genetic conflict aid the clinician?* (Moore and Collins 1997).

By narrative, I mean a culturally meaningful script that encodes cultural norms. Thompson's (2005) discussion of masculinity in fertility clinic settings uses the term *repertoire* similarly to refer to a perspective representative of a particular population when she discusses virility and paternity. The nuclear family narrative I discuss in this chapter is a script that permeates fertility clinic websites and which fertility clinic entrepreneurs use to establish normative behaviour and shape social practice.

6.2 Nuclear Family Narrative and Supporting Themes

Fertility clinic websites mobilize ideas about nature and kinship to support the overarching narrative of the nuclear family. In this section I discuss the themes deployed to promote particular understandings of nature and kinship. I then discuss what I mean by the overarching nuclear family narrative and how it ultimately resolves seemingly contradictory themes and how this relates to kinship, descent, and infertility management. *Nuclear family* is my term, not the term used on fertility clinic websites. Websites use the term *family*, for example "creating families" (The International Fertility Centers for Surrogacy and Ovum Donation 2001). I use the term *nuclear family* as part of my analytical framework. In the complex public discourse about assisted conception technologies, the relationship between these technologies and families is often constructed as threatening: reproductive technologies are perceived as posing a risk to families. Family in this sense is understood as a fixed universal construct. I use the term

nuclear family to point out the historically particular construction of this idea of family; specifically, that what is really meant is an idealized heteronormative pairing of a man and woman based on romantic love in order to raise children. For the most part, the public discourse of risk is not talking about how reproductive technologies pose a threat to same-sex couples and their children. The fact that some of these technologies might enable those same-sex couple to have children is part of the risk these technologies are thought to pose to the idealized, heterosexual nuclear family. This reading of "family" as "nuclear family" is also evident in the nuclear family logos I discuss later in this section (see Figures 7, 8, 9, and 13, Appendix B) in which the characters can be read as partnered man and woman, and child, not for example, two women and a child or mother, mother's brother, and child. This is sometimes explicit (e.g. illustration in which the faces are clearly male and female) and sometimes implicit (e.g. when the relative sizes of the components are small, medium, and large to equate with child, woman, and man). This is an example of the cultural and historical specificity of "family," for other cultures may read the images differently.

The nuclear family narrative is supported by a number of themes, which are in turn comprised of key linguistic and visual symbols. In Chapter One I described how the anthropological perspective includes the concept that meaning and technology are co-produced, so that the introduction or utilization of technologies is accompanied by a process of negotiation of meaning, and that "we give objects, people and events meaning by the frameworks of interpretation which we bring to them" (Hall 1997:2). The themes I identified on fertility clinic websites are the frameworks of interpretation used to make

sense of the technologies and participants and as such they provide the organizing basis for relationships on fertility clinic websites. I identified several themes that support the nuclear family narrative; specifically, marriage, gifts, God and miracles, and birds and bees.

The theme of marriage appears on fertility clinic websites in three ways: as the site of infertility, as an entity at risk, and as an analogy for fertilization. On almost all of the fertility clinic websites I examined infertility is described as a couple's problem. The language on the websites is typically directed at couples experiencing infertility. Couples are understood to be a man and a woman, although on two websites there are references to a woman's same sex partner.

Marriage as an entity at risk is described as a consequence of infertility. Infertility is presented as a marital crisis in which the marriage is incomplete without a child. The stress of infertility treatments is described as jeopardizing marriage survival. On websites that provide information for potential egg donors or surrogates, their role is often described as marital saviours, or as gifts to couples whose marriages have survived. Marriage also functions as an analogy for fertilization. The description of fertilization is like a romance in which the egg and sperm overcome obstacles to meet and form a union. One website includes an image of cupid shooting an arrow through a gold ring. This image encodes love (cupid), marriage (the gold band), male and female (the arrow and the circle) and also fertilization (the arrow also stands for a sperm, the circle/gold ring an egg). Martin (1991) describes how the actions of egg and sperm are often described as

courtship and mating behaviour in which a microscopic cellular bride and groom find mates and make a cellular baby.

The gift theme appears on fertility clinic websites in terms of gifts from the physician, gifts from surrogates and egg donors, and gifts from God. When patient testimonials are posted on fertility clinic websites they invariably thank the physician for the gift. This gift is usually identified as the gift of a child but may also be the gift of hope. Indeed, the acronym of one reproductive technology is GIFT – gamete intra fallopian transfer. Surrogates and egg donors are also constructed as gift-givers through testimonials and also in messages from the fertility clinic to potential surrogates and egg donors. For example, one fertility clinic website that includes information pages for potential egg donors describes how they will give the precious gift of parenthood. Finally, testimonials from successful couples frequently thank God for the gift they have received. I discuss this component of the gift theme further below.

Assisted by a mechanistic model, that is, by viewing the body as a machine, the idea that blood and organs are alienable and transferable has been extended to gametes (Eichler 1988). For example, blood donations, organ donations, sperm donations do not challenge our notion of self because these body parts are perceived as alienable. There are three models of blood donation that have been extended to gamete donation (Shannon 1989). In the insurance model, individuals deposit blood in bank to access later if necessary. This can be compared to cryopreservation in which couples maintain extra embryos in the event that a fertility treatment is unsuccessful. In the good neighbour

model, an individual donates blood for reasons of altruism. This model has been extended to egg donors, embryo donors, and surrogates. Finally, in the vendor model, an individual donates blood in exchange for payment as is the case with sperm donation and often egg donation. Thus egg donation, sperm donation, and embryo donation are analogized to blood donation, in which one may "give the gift of life." The gift theme on fertility clinic websites works to separate an individual from their gametes and to de-emphasize genetic connections between the gamete donor and potential child. Gift giving in this context creates social distance: since gametes are perceived as alienable it is the alienability of a gift that is mobilized in the metaphor. In contrast, there are other contexts in which gift giving creates social connectedness. Layne (2003) describes how gift giving is a social practice used to establish and maintain social identities, creating social connections. For example, Layne (2003) describes how keepsakes are used to strategically create connections to a deceased embryo, fetus, or neonate to resolve problems of liminality since miscarriage can be seen as an incomplete rite of passage in which the transition to a new social identity is interrupted. However, in fertility clinic contexts, gift giving is not meant to forge a connection between gift giver (egg donor or surrogate) and gift receiver (infertile couples) but to ensure gametes and their consequent genetic relationships to the egg donor or surrogate are perceived as alienable.

In Canada, gift imagery does not transfer as easily to gametes and surrogacy as it does in the United States. In contrast with American fertility clinic websites, surrogacy is mostly absent from Canadian websites. This may suggest there are important cultural differences between Canada and the United States in the acceptability of gamete donation

and surrogacy. It may point further to differences in how the commodification of reproduction is viewed in the two countries.

Dolgin (1997) has documented a shift from American family law to contract law in which "recent legal cases involving contested parentage have played a part in moving contemporary U.S. conceptions of parentage from something that is socially fixed and biologically natural toward something that is more voluntaristic and enforceable through contracts expressing procreative intent" (Thompson 2005:146). Dolgin (1997) describes a movement towards individuality and choice as the defining characteristics of familial connections that bring private/public and family/marketplace dichotomies into question similarly to the deconstruction and reinvention of the nature/culture dichotomy I described in the literature review. For example, surrogacy is located at the intersection of two formerly separate conceptual spaces of family relationships and commercial contractual relationships (Fox 1993). Fox reports that the shift toward contract law reflects a "displacement of the family as the basic legal unit and its replacement by the individual contractor" (Fox 1993:97) and further that this shift is facilitated by the widespread belief in the inviolability of the contract and the relationship of this belief to American identity. This belief is at the heart of the American legal identity since the United States was the first Western nation to model itself on contract-based social relations instead of the status-based social relations of contemporary European nations. This contract-based, or individual model versus a status-based or familial model formed the basis of the decision in the widely reported case of Baby M., a genetic surrogacy custody battle in which the infertility clients were granted full custody despite the fact

that the surrogate was the child's biological mother. When the genetic surrogate refused to relinquish her parental rights, she was insisting on the rights of motherhood status over the rights of a contract, and she was widely condemned in American public opinion for violating that contract (Fox 1993). This suggests that contract-models of familial relations may be more acceptable for American rather than Canadian reproductive technology participants as reflected in the fact that surrogacy for payment is illegal in Canada but legal in several American states.

In addition, I would argue that surrogacy does not fit as well with the pollination model that is pervasive on the Canadian websites sampled as it does with the gift imagery which is more common on American fertility clinic websites. By coincidence, two of the fertility clinic websites in the sample – a Canadian clinic and an American clinic – have an administrative connection. The American fertility clinic website describes how they work with a Canadian partner to provide Canadian surrogates for American couples, the advantage to couples being significantly lower health care costs. Interestingly the Canadian fertility clinic website does not refer to this partnership even though the virtual location of the website means it is equally accessible to American and Canadian audiences.

The God and miracles theme is most evident in the client testimonials which fertility clinics have chosen to include on their websites. Clients sometimes thank egg donors and surrogates for bringing miracles into their lives, or describe how they have been blessed with a wonderful surrogate, but overwhelmingly they thank physicians and

God as miracle-makers; for example “without you and God, my little girl would not be here today” (Southeastern Fertility Center 2001). Testimonials describe how prayers have been answered and how couples have been blessed with the ultimate gift. The source of the miracles is described alternately as the physician and God, using the same language. For example, letters from couples may describe a baby as a miracle from God, and at the same time thank the physician for creating the miracle of life. Fertility clinic websites sometimes deploy the theme of miracles when describing their technologies in a general sense, for example “the sound of a baby’s laughter…one of life’s little miracles” and “sometimes even miracles need a helping hand, that’s where we come in” are used on the same fertility clinic home page (Heartland Fertility and Gynaecology Clinic 2001). One of the fertility clinic websites in the sample describes surrogacy as a modern medical miracle. This presentation of surrogacy as modern provides a contrast to surrogate mothers and couples who describe surrogacy as a strategy employed by “primitive” and therefore more “natural” cultures (Roberts 1998).

Reproductive technologies are described as gifts and miracles: from physicians, from egg donors and surrogates, and from God. I described how fertility clinic websites use their home pages to construct the experience as one in which, with perseverance and hard work, couples may achieve their dreams. I described how suffering and personal failure are presented together with hope, juxtaposing the experience of failure with the dream of a baby. The fertility clinic then steps in to bridge the gap, offering a chance of success. The themes of suffering, hope, and success are presented at the beginning of the reproductive technology chronology on website home pages. Gifts and miracles appear

on secondary or tertiary level pages, following lists of infertility causes, state-of-the-art treatments, and specific descriptions of reproductive technologies as a series of steps. These two assemblages of abstract themes book-end the chronology of the reproductive experience so that while cutting edge technology is heavily promoted, it is contextualized by the personal experiences of despair, hope, success, and gratitude.

The final theme I discuss is birds and bees. Earlier in this chapter I described how birds and bees is a widely recognized language standard and popular symbol for reproduction. Specifically, birds and bees refers to the natural, physical mechanics of sex as distinct from sexuality, from emotional, sensual, and erotic qualities, and from technological intervention. The birds and bees theme is expressed in three different ways on fertility clinic websites: in pollination models, in images symbolizing the nuclear family, and in simplified egg and sperm procreation stories.

Pollination models are utilized to shape understanding of artificial insemination, IVF, and ICSI. As I described in Chapter Five, artificial insemination, IVF, and ICSI are presented as a continuum of technological intensification. Artificial insemination serves as an analogy for IVF and ICSI, so that the essentially culturally acceptable and unproblematic nature of artificial insemination is transferred to IVF and ICSI. Pollination models facilitate this process. Pollination is a process in which a third party has a natural and purposeful role in fertilization. Bees, birds, and butterflies are essential to floral fertility, bringing two elements together to enable reproduction. Pollination images typically depict a bird, bee, or butterfly pollinating a flower (Figure 16, Appendix

B). The flower is usually a sunflower or lily, both of which structurally suggest fertility. The lily is open to reveal the plant's reproductive organs and the sunflower seeds demonstrate robust and abundant fertility potential. By suggesting that the role of the physician in artificial insemination can be understood as a fertility helper in much the same way as a bee, *artificial* insemination can then be understood as *assisted* insemination. The pollination model transforms *artificial* or *technological* into *natural* and promotes understandings of AI, IVF, and ICSI as in alignment with nature.

Pollination images accompany descriptions of artificial insemination and IVF, but most often accompany descriptions and images of ICSI. Perhaps ICSI, as the most technologically intensive of the three, requires more work on the part of the fertility clinic to be perceived as natural. Additionally, images of ICSI reinforce the simplified egg and sperm procreation stories I describe below. Appendix B includes three visual examples of the way that fertility clinic websites pair pollination with ICSI. In each pair the images are presented side-by-side on the fertility clinic home page. In the first pair an image of a butterfly pollinating a pink thistle is placed side-by-side with a magnified photograph of ICSI at the moment in which the egg is pierced by a needle through which a single sperm will be injected. If the ICSI image is rotated 45 degrees the images are structurally similar and the analogy is unmistakable. Although this fertility clinic offers many reproductive technologies, ICSI is the only one depicted. The second pair of images shows a bee in the act of pollinating a sunflower beside a simplified diagram of ICSI, again with the needle in the act of injecting a single sperm. The third image show a sunflower, minus a pollinator this time, beside another simplified ICSI diagram. All

three pairs of images are structurally similar; that is, they are the same type of image (photograph versus diagram), similar size, shape, colour saturation, and placement on web page.

Images symbolizing the nuclear family are of two types: floral and family triads. Floral triads are images in which flowers, leaves, vines, or other floral elements are presented in groups of three to symbolize the nuclear family. Family triads are simplified drawings of three human figures representing man, woman, and child. These two kinds of images may also merge together. The choice of triads or trinities is not without significance. Although my analysis did not include as a focus the religious connotations of fertility clinic websites text and imagery, a trinity is a powerful Christian symbol. The choice of both nature and family as a trinity simultaneously evokes the idea of the "original" or Holy Family and naturalizes the nuclear family. Additionally, the floral imagery may function as Christian as well as nature symbols; for example, the lilies described above are also associated with purity and the Virgin Mary as well as with Easter and fertility and the death of babies and children (Gast 2000).

Appendix B includes three visual examples of family triads, two examples of floral triads, and one example of the merging of these two types of images. The merged image is a drawing of a man, woman, and baby intertwined with three sheaves of wheat. The wheat forms part of the family image, with lines of wheat merging into the woman's hair and the man's arm. As with most family triad images the woman is embracing the baby and the man surrounds and embraces both. The curvature of the wheat, the man's

arm and the curved font of the clinic acronym underneath creates a round image. Wheat is particularly significant for this fertility clinic since it is located in the Canadian prairies. Wheat farming was the backbone of the prairie economy until the 1950s and together with grain elevators, wheat became a symbol of the rural prairie way of life (Canadian Museum of Civilization Corporation 1999). This way of life includes values of hard work, perseverance, family, and community. For example, the prairie wheat pool movement emerged in the 1920s as cooperatives in which farmers pooled their wheat and marketed it collectively (Canadian Museum of Civilization Corporation 1999). Wheat has endured as a symbol of prairie values, and wheat is symbolized by the gold colours in the official tartans of the prairie provinces Alberta, Saskatchewan, and Manitoba (Canadian Heritage 2007). The wheat combined with the family logo (Figure 13, Appendix B) may therefore reinforce the ideas of hard work in the face of adversity discussed previously as well as being a symbol for nature. The family/wheat logo is repeated at the top of every page on this website. The only other image on the website is a single image of ICSI. The ICSI diagram is almost exactly the same size as the family/wheat image and is an extremely simplified drawing whose roundness echoes the curve of the family/wheat image. Another example of floral and family triads merging is on a website that uses sunflowers in several variations. This website was described in detail in Chapter Three as Fertility Clinic Website "A." In one variation there are three sunflowers, small, medium, and large, on stems with leaves. The leaves are intertwined and suggestive of arms reaching out to the other sunflowers.

The final example of the birds and bees theme are simplified egg and sperm procreation stories. I refer to images and explanations of egg and sperm as stories because they are manipulated textually and visually to support a nuclear family narrative and stand for one woman and one man. Textually, descriptions of fertilization describe one egg and one sperm meeting and uniting, as described in the marriage theme above, for example, "the sperm are united with the eggs in an incubator to allow for fertilization to occur" (The Texas Fertility Center 2001). Visually, egg and sperm are manipulated to represent a man and woman through image magnification and scale. While ICSI is sometimes presented as a photograph, most images of egg and sperm, including images of artificial insemination and IVF, are representational, that is, they are drawings, diagrams, or animation sequences. In these images sperm appear disproportionately large relative to the egg and invariably only one sperm is depicted. Presenting egg and sperm in this way aligns the simplified fertilization story with a simplified nuclear family narrative in which a man and woman meet, unite, and have a baby. Depicting the egg and sperm as of more equal size, and in pairs, allows the viewer to more easily equate them with a man and woman whereas an image of multiple, tiny sperm approaching a much large egg would disrupt the analogy. This visual strategy may also convey a sense of precision and control in that one sperm is showcased to suggest a known, controlled, genetic contributor to the baby.

The overarching nuclear family narrative on fertility clinic websites is communicated in text and image through culturally meaningful linguistic and visual symbols. The themes of marriage, gifts, God and miracles, and birds and bees works in

different ways to support the nuclear family narrative. At the end of this chapter I return to a discussion of the nuclear family narrative and how it functions as a lens through which to evaluate and strategically naturalize reproductive technologies and kinship.

6.3 Gender: Reproducing Conventional Stereotypes

Based on my literature review and conceptual framework I expected to find evidence of the subordination, exploitation, and devaluing of surrogates and egg donors, as well as conventional North American gender stereotypes. I did find some evidence to document the socio-economically disadvantaged position of surrogates and egg donors, particularly their diminished ability to access legal advice and to dictate the terms of their participation in the reproductive technologies. However, the overwhelming evidence for the reproduction of gender stereotypes was in the visual and textual representations of male and female bodies: their function and dysfunction, their subjection to technological manipulation, and their relative position in a hierarchy of kinship determinants.

On fertility clinic websites, infertility is female. When the term "infertility" appears it almost always refers to female infertility. The websites typically do not discuss female infertility and male infertility: they discuss "infertility" and "male factor infertility." As I described in Chapter Three, male infertility is softened by the word "factor." Moreover, fertility clinic websites use the term "woman" to refer to a woman's dysfunctional body, but never use "man" to refer to a man's dysfunctional body. For

example, there is never a problem with a man's sperm, it is "male sperm." Additionally, infertility causes located in the female body are listed specifically (such as endometriosis) while causes located in the male body are listed generally (such as male factor infertility. The following quote is from a Canadian fertility clinic website in the sample and illustrates the use of specific diagnoses for women and general diagnoses for men, as well as the use of the non-parallel terms "woman" and "male" together: "approximately one third to one half of all infertile women have ovulation disorders…many factors can cause or contribute to male infertility" (Heartland Fertility and Gynaecology Clinic 2001).

Women and women's bodies are also described as potentially failing to become fertile. For example, one fertility clinic website lists treatments for the woman who has "failed IVF" (The Advanced Fertility Institute 2001), and suggests cryopreservation of embryos for future transfer into the infertile woman if she does not achieve pregnancy initially. Interestingly, one fertility clinic website includes a paragraph at the end of the description of sperm evaluation and testing (in which the word "couples" is used six times, "male partner" once, "patient" twice, "fertile male" once and "man" never (The Fertility Institutes 2001). The fertility clinic reports that it is their opinion that sperm test results should not be presented to patients by way of a brief telephone conversation, rather the couple is entitled to sit in consultation with their physician and be advised of the specific results, as well as how those results compare to the results of known fertile males tested in that laboratory. So male infertility is a couple's problem and the man must be gently advised of his dysfunction. There is no parallel suggestion on this website for advising female patients of their status.

Almost all of the technological procedures described on fertility clinic websites are intended for the female body, even when those technologies are treatments for male infertility. For example, ICSI is indicated for severe male infertility, yet most of the procedure is applied to a healthy woman's body. The woman's ovaries must be stimulated with drugs to produce multiple eggs which are then retrieved through a surgical procedure. A sperm is injected into the egg and the resultant embryo is inserted into the woman's body through other procedures. The woman must take additional drugs, and a solution may be applied to the embryo, to increase the chances that it will implant in the uterine lining.

In addition to ICSI, most reproductive technologies involve women's bodies becoming patients, even if the woman is fertile (Eichler 1988, Achilles 1990; Bowker 2001). This means that it is not the infertile patient's body that is being medically treated. For example, with surrogacy, a fertile woman bears a child (conceived in a particular way) for an infertile woman (whose infertility has not changed) (Eichler 1988). Also, for example, is artificial insemination by donor in which a fertile woman becomes a medical patient because her husband is infertile (Eichler 1988, Achilles 1990). This may explain the pervasive use of "couples" as the site of infertility. Locating infertility within a couple creates a space where both partners are eligible for testing, evaluation, and technological intervention regardless of which partner may be infertile. Otherwise reproductive technology physicians would have to justify medically treating a healthy body for the dysfunction of another body.

Lutz and Collins (1993) have acknowledged Foucault's pivotal analysis of medicine as site of social power and of the role of photography as a technique of surveillance enabling the study of the other and development of a normalizing gaze though which to classify and punish. They suggest that

> [Foucault's novel contribution was to see these institutions as exercising power not only by coercive control of the body but by creating knowledge of the body and thereby forcing it 'to emit signs' or to conform physically and representationally to the knowledge produced by these powerful institutions (Lutz and Collins 1993:191-2).

This normalizing gaze establishes visibility through which others may be differentiated and judged. With reference to visualizing medical technologies, Haraway (1991 in Rose 2001:9) describes the power relationships articulated through visuality. In contrast with vision (what the human eye is capable of seeing), visuality is vision constructed in particular ways: how we look at an image, how our looking is shaped, and how we think about this looking. Visuality produces visions of social hierarchies of class, race, gender, and sexuality. The concepts of normalization and visuality provide a helpful analytical framework to examine how fertility clinic websites create and reinforce knowledge of the female body as inherently defective and as an appropriate object for medical and technological manipulation. These gender constructions are communicated through text and image to represent stereotypical male agency and female passivity.

Fertility clinic websites contain many examples of images of women's bodies, women's reproductive organs, and gametes being manipulated by technology, such Figure 2 (Appendix B) which is a magnified photograph of endometriosis. This image

shows both the technological manipulation of a woman's body and her dysfunctional body parts. Whereas images of infertility causes, diagnostic procedures, and treatments include diagrams, photographs, and medical imaging, there are no images of male patients, men's reproductive organs, or sperm being manipulated by technology (even when in an ICSI animation sequence the technology is static and the sperm has the agency). On fertility clinic websites women's body parts are always depicted as static and passive whereas men's body parts are usually shown with movement and agency. For example, animation sequences of body parts are always of sperm, never eggs. Figures 14 and 15 (Appendix B) include diagrams depicting ICSI at the point where a single sperm is injected into an egg; however, rather than being passively injected and subject to technological control the sperm are represented as active. The drawing of the sperm tails suggests movement while the injection needle functions as a neutral conduit. Daniels (2001) describes how sperm are personified in scientific and popular discourse as having distinctive personal traits. Sperm voyage, travel, and navigate (Beldecos et al 1989; Martin 1991; Bowker 2001). The language used to describe gamete removal from men's and women's bodies is different: eggs being removed from a woman's body are described as "removed" (The Fertility Institutes 2001), "retrieved" (Southeastern Fertility Center 2001) or "harvested" (The Advanced Fertility Institute 2001), all of which suggest a passive woman subjected to technological intervention. Sperm however are either described as "collected" (The Texas Fertility Center 2001), or more often the male is asked to "provide a sample" (Fertility Center of New England, Inc. 2001), they are never described as removed from the man's body. For example, one fertility clinic describes gamete intra fallopian transfer (GIFT) in the following way "an egg is removed from a

woman's body and mixed with sperm in a laboratory" (Royal Victoria Hospital 2001). There is no description of sperm removal from the man's body, or indeed of man, just sperm. In another example, a fertility clinic describes IVF as: "a procedure in which an egg is removed from a follicle and fertilized by a sperm cell" (IVF Canada 2001). The woman's gametes are removed from her body but the man's gametes still have agency.

As described in Chapters Four and Five, eggs and sperm have different weight in terms of an individual's ability to sever a kinship connection to their gametes. Harrison's (1995) work investigates sex and gender as determinants of kinship in American law, describing the unequal roles of men and women in asserting parenthood. She identifies a parallel between sperm donors and lesbian co-mothers in the way the law cannot recognize the diminished parental status of sperm donors nor the achieved parental status of lesbian co-mothers:

> Just as the law sees only one type of father, with complete parental rights regardless of the level of involvement in conception or parenting, so the law has traditionally recognized only one type of mother – the person who either gave birth to or adopted the child.
> (Harrison 1995:181)

Thus the co-mother's lack of a biological relationship is used to disqualify her as a parent and in the law is constructed as a third party care-giver such as a housekeeper or day-care provider (Harrison 1995). Added to this is the power of doctors to bestow and terminate paternity: in most American states paternity law distinguishes between insemination performed with medical assistance and without (Harrison 1995). Also, a sperm donor's legal status depends upon the woman's marital status. If a married woman is inseminated with donor sperm with the consent of the husband, then the husband is the legal father;

however, statutes generally fail to address unmarried women and the courts are left to decide whether donors can assert paternity rights (Harrison 1995). Thus the status of the sperm donor is determined by the doctor, the husband, and the sperm donor himself, regardless of the intent of the woman.

In Chapter Two I described how the material on fertility clinic websites is prepared for a specialized audience. In Bowker's (2001) study of the language of infertility she describes how linguistic practices for specialized audiences are used for purposes of gender construction, creating and reinforcing social relations between the sexes. The above discussion demonstrates how fertility clinic websites reproduce conventional gender stereotypes in their portrayal of women's bodies as inherently defective and as subject to the medical gaze. These examples also demonstrate how the concept of nature is invoked to justify gender stereotypes when in fact the gender stereotypes have been inscribed upon nature to begin with.

6.4 Conclusion

Fertility clinics are in the business of making families. From explicit messages on home pages about creating families to the predominance of heterosexual sex and marriage symbols and gender stereotypes, the product that fertility clinic websites are advertising is the nuclear family. In order to bolster/effect this assumed natural-ness of the nuclear family, clinic websites engage in various textual and visual strategies to

describe nature and kinship in the context of the assisted conception techniques they offer. As I have argued, the description of technology (strategically grouped or separated), the differential determinants of kinship of participants, and profound personal suffering associated with childlessness are all articulated so as to naturalize and reproduce the nuclear family narrative.

Fertility clinics implement "regimes of truth" on their websites; that is, they offer particular explanations as real and natural (Rose 2001). These explanations, or discourses, are particularly powerful because they are located in the context of socially powerful medical institutions and because their discourses claim absolute truth in the language of science and empirical reality (Stepan 1996; Rose 2001). Identification of the regimes of truth communicated on fertility clinic websites offers answers to my research questions specified in Chapter One. Nature and kinship are mobilized through the culturally meaningful themes of marriage, gifts, God and miracles, and birds and bees. These themes work to structure parent/child, adult/gamete, adult/embryo, and participant/physician relationships by foregrounding some relationships and backgrounding others. Gender shapes these meanings and relationships by locating infertility in women's bodies; specifically, in terms of their dysfunction and failure, their subjection to technological manipulation and their subordinate position in a hierarchy of kinship determinants.

Some writers (Eichler 1988; Achilles 1990) describe how reproductive technologies create diversity in families, in terms of composition, or suggest that perhaps

this diversity could be seen as an extension of existing diversity in the sense that the nuclear family is no longer perceived as normative. Achilles (1990) suggests that the success of families created through reproductive technologies depends on the capacity of society to redefine what constitutes a family. However, based on the fertility clinic websites in the sample, there is no sense of family diversity with respect to non-nuclear families (the only exceptions are the two fertility clinic websites that make brief reference to same sex couples). The information presented to prospective clients emphasizes the creation of nuclear families, with fertility clinic services and reproductive technologies firmly located within this narrative and positioned as supporting this narrative. Eichler (1988:203) reports that those who employ reproductive technologies do so ostensibly to "bolster and safeguard what is seen as the traditional nuclear family." It also suggests that individuals dealing with infertility face a narrowly constructed conservative set of assumptions about who is an acceptable clinic client and about what are the legitimate reasons for undergoing assisted conception. Significantly, this normative conceptualization of family on the websites indicates their entrepreneurial functions are limited. The entrepreneurial work being done by the fertility clinics is not greater acceptance of diverse family forms. Instead, they differently locate nature and kinship to preserve the nuclear family narrative that dominates the websites.

Kinship status, that is, nuclear family membership, is first determined socially and only then justified by the mobilization of culturally specific kinship determinants. This is an example of the "genetic gap" described by Franklin (2003) between supposedly objective genetic facts and socially constructed identities. Within this gap is the space

where the social meaning of DNA is culturally constructed. Since kinship is identified in a social context and then justified with biology there are conflicting and flexible definitions of nature, a supposedly fixed universal fact, invoked to justify kinship assertions. For example, as Roberts (1998) reports, the technological procedures of IVF mimic natural conception while metaphors of vessels sever the problematic connection between surrogates and fetus. In Howell's (2003) discussion of Norwegian transnational adoption, children are made to exist as social beings first and kinship work is done later. Transnational adoptees become children of their adoptive parents initially through the acquisition of a new name, birth certificate, citizenship, and by virtue of their new kin relationships. The kinship work, or "kinning" is accomplished through a variety of methods such as locating the adopted child in the family history by wearing traditional dress that expresses ancestral ties to the land (Howell 2003). Similarly, the process of creating nuclear families makes them socially a family first and then kinship determinants are mobilized as necessary to locate nature somewhere in this process. Kinship determinants are strategically mobilized to bring opacity and transparency (Cussins 1998b) to specific relationships so that the fertility clinic "is a site where certain bases of kin differentiation are foregrounded and recrafted while others are minimalized" (Thompson 2005:145).

Keesing's (1975) discussion of the difference between kinship and descent is interesting as it appears that determination of participants' kinship status is taking on some qualities of descent. Descent rules specify membership in a social category (descent group) with reference to an ancestor (Keesing 1975). Keesing articulates the

differences between kinship and descent as follows: whereas kinship is defined bilaterally with reference to an individual (ego), descent is defined with reference to an ancestor and acknowledges relationships though only a limited class of ego's relatives. Rules of descent use particular constructs to define membership in a social group. It appears that the overarching narrative of the nuclear family works together with the kinship determinant of intent to create descent. This is achieved with a dynamic model of kinship that accommodates both the essentiality and deterministic understanding of genetics and the creative power of intent. Thompson (2005:145) reports that "the alignment of procreative intent and biological kinship is achieved over time through a mixed bag of everyday and more formal strategies for naturalizing and socializing particular traits, substances, precedents, and behaviors."

Thompson (2005) asserts that reproductive technologies make parents instead of making babies. The strategic mobilization of kinship and nature functions "to make the couples who seek and pay for infertility treatment—the intended parents—come out through legitimate and intact chains of descent as the real parents" (Thompson 2005:145). These couples who seek and pay for infertility treatment are the intended audience of fertility clinics and thus may well be predisposed to accept the meanings of kinship and nature articulated by the clinics.

In the literature review I described how women and men participating in reproductive technologies draw upon different metaphors to control the location of nature and kinship, mapping it onto the appropriate body (Cussins 1998a; Teman 2001; Greil

2002). My research adds to this body of work in that I address how the fertility clinics that provide assisted conception technologies engage in this dialogue; specifically, how they also locate nature and kinship in reproductive technologies. Further research questions in this area include how fertility clinics produce their websites and how prospective clients receive this information.

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APPENDIX A: Fertility Clinic Website Sample

Canadian Fertility Clinic Websites

Heartland Fertility and Gynaecology Clinic (www.heartlandfertility.mb.ca, accessed Dec. 31, 2001)

IVF Canada (www.ivfcanada.com, accessed Sept. 23, 2001)

London Health Sciences Centre (www.lhsc.on.ca, accessed Dec. 31, 2001))

Markham Fertility Centre (www.markhamfertility.com, accessed Sept. 23, 2001)

Mount Sinai Hospital, Reproductive Biology Unit (www.baby-makers.com, accessed Sept 24, 2001)

Ottawa Civic Hospital, GOAL Program (www.conceive.org, accessed Sept. 24, 2001)

Royal University Hospital (www.usask.ca/medicine/obgyn/artus, accessed Jan. 6, 2002)

Royal Victoria Hospital (www.rvh.on.ca, accessed Dec. 31, 2001)

Toronto Centre for Advanced Reproductive Technology (www.tcartonline.com, accessed Dec. 31, 2001)

University of British Columbia IVF Centre (www.ubcfertility.com, accessed Dec. 27, 2001)

American Fertility Clinic Websites

The Advanced Fertility Institute (www.fertilitydocs.com, accessed Sept. 23, 2001)

The Egg Donor Program and the Surrogacy Program (www.eggdonation.com, accessed Sept. 29, 2001)

Fertility Center of New England, Inc. (www.fertilitycenter.com, accessed Sept. 24, 2001)

The Fertility Institutes (www.fertility-docs.com, accessed Sept. 24, 2001)

Institute for Reproductive Health (www.cincinnatifertility.com, accessed Sept. 21, 2001)

The International Fertility Centers for Surrogacy and Ovum Donation (www.fertilityhelp.com, accessed Sept. 23, 2001)

Shady Grove Fertility Reproductive Science Centre (www.shadygrovefertility.com, accessed Sept. 22, 2001)

Southeastern Fertility Center (www.baby4you.com, accessed Sept. 21, 2001)

The Texas Fertility Center (www.txfertility.com, accessed Sept. 28, 2001)

The Washington Centre for Reproductive Medicine (www.seattleivf.com, accessed Sept. 23, 2001)