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The Sociocultural Aspects of Assisted Reproduction in Mexico

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September 2010

UNIVERSITY SUSSEX

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FOR WHICH THIS THESIS IS SUBMITTED

The sociocultural aspects of assisted reproduction in Mexico

SUMMARY

Assisted reproduction (AR) became available in Mexico during the mid eighties. Since then, the AR industry has developed and flourished within a context of little regulation, considerable media coverage and an increasing number of consumers. As part of this process, terms such as 'assisted reproduction', 'infertility', 'eligible AR users' and 'qualified AR service provider' have required definitions. Through four years of multi-sited ethnographic work at clinics, conferences and online forums, and by analysing media coverage and legal debates around infertility I have charted the introduction and development of AR, and I have tried to understand the process of its assimilation and (re)construction within the Mexican setting. The organisation of this thesis reflects the dynamic complexity with which the different actors have constructed the Mexican AR arena. The thesis begins with a description of the theoretical framework and the methodological rationale, followed by a genealogical analysis of Mexican AR focusing on the elements that made its adoption possible, the transformation of gynaecologists into AR specialists, the establishment of AR clinics and services, and the emergence of two new types of AR specialist: the andrologist and the AR biologist. I then analyse the way AR is framed as a *paranatural* procedure that imitates nature while simultaneously going beyond it and examine the elements that make up what the community of AR specialists suggest are the major causes for infertility: 'the age factor' and 'the male factor'. Finally, I describe the pilgrimage AR users embark on in search of parenthood and their quest for information and support. Understanding the process by which AR has been assimilated and transformed in the Mexican context sheds light on the way techno-science is (re)constructed when it arrives in new settings. In addition, this knowledge has the potential to inform local medical and social practices, and regulatory frameworks in the field.

*But now the time is come wherein to tell
How all we bore ourselves that very night
When at the hostelry we did alight.
And afterward the story I engage
To tell you of our common pilgrimage.
But first, I pray you, of your courtesy,
You'll not ascribe it to vulgarity
Though I speak plainly of this matter here,
Retailing yo their word and means of cheer;
Nor though I use their ver terms, nor lie.
For this thing do you know as well as I:
When one repeats a tale told by a man,
He must report, as nearly as he can,
Every last word, if he remember it,
However rude it be, or how unfit
Or else he may be telling what's untrue,
Embellishing and fictionizing too.
He may not spare, although it were his brother;
He must as well say one word as another.*

Geoffrey Chaucer
Prologue to The Canterbury Tales

Acknowledgements

I thank everyone who helped me travel this road. Above all, I thank Pedro who accompanied me through my ups and downs, endured my confusions and my certainties, shared with me the endless hours of reading and correcting, and even seemed to enjoy the sleepless nights of discussions; without his help I would have never been able to get this far. I also want to thank Adam and Gill, not only did they supervise every word I wrote and every thought I had, they also shared with me their knowledge and experience, looked after my wellbeing and pushed me forward when I was falling back. Last, but definitely not least, I want to thank Patricia, Clicerio and Cyntia who, like always, listened to me whenever I had something to say and gave me their opinions with their magical balance of common sense, passion and sense of humour. I thank you all for your trust, support, patience, and advice.

I also want to thank the people who let me into their lives, shared their stories and experiences, without them this work would have never been possible. Likewise, I want to thank the *Consejo Nacional de Ciencia y Tecnología* who financed this research.

Statement

I hereby declare that this thesis has not been and will not be, submitted in whole or in part to another University for the award of any other degree

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Introduction

“The stories I have told as an ethnographer were not stories I chose but stories that insinuated themselves into my consciousness because I had to be present in a different reality...I wrote about land tenure in Spain not because I found land tenure fascinating but because that was what people...spoke about day in and day out” (Behar, 2003:16).

These words, written by Ruth Behar, echo the underlining motives of my work. I decided to study assisted reproduction (henceforth abbreviated to AR¹) not so much because I find it a fascinating topic (which I do), but because it was a topic that was emerging within Mexican society. Like light rain from heavy clouds that announces the coming of thunder and lightning, talk about and engagement with AR was slowly building up, gaining a place within society. Four years ago, when this study began, references to AR in the media were becoming more frequent, people were starting to talk about their own experiences in a less inhibited manner, and there was an increase in the number of legislators proposing ways to regulate its use. Likewise, more physicians were offering these services and more people were using them. Although the change was slight, it was noticeable and this began to intrigue me. I wanted to explore the way in which Mexican society was incorporating and making sense of AR, to identify the different strategies used by people to solve the diverse set of problems that their use was generating, and the different cultural aspects that were being moved, realigned, re-signified and even invented to accept AR as a legitimate way of conception and forming a family. Inspired by these questions, and fuelled by years of a sociological interest in bioethics and biomedical technologies, I embarked upon this research.

Participant Evolution, Risk & Globalisation

Twentieth century inventions have faced ethical dilemmas due to the possibilities they offer. On the one hand, they have expanded the reach of humanity's interventionist attitude towards life and nature, modifying the way we define and deal with concepts such as privacy, ownership and responsibility. On the other, they highlight an ecological dilemma of a high demand of limited resources. Across the range of technologies, biomedical technologies have attracted particular attention since the advances made in this field in the last decades have allowed us to take an active role in evolution, placing us in a different evolutionary stage in which new rules come into play (e.g. economy and politics) (Clynes and Kline, 1960; Hables Gray, 2002). By using biomedical

¹ I use the term assisted reproduction (AR) and AR services instead of assisted / artificial reproductive technologies (ART) or new reproductive technologies (NRT) for various reasons. First, they are no longer new. Second, I not only looked at the technologies, but the entire service and the elements that emerge parallel to them (i.e. financing and marketing schemes). Third, I paid equal attention to ovarian stimulation, artificial insemination, in-vitro fertilisation, gamete donation, and surrogacy. Finally, AR is the term mostly used in Mexico.

technologies (as attachments, implants or reconfigurations of the body) that range from those trying to re-establish homeostasis² (such as the pace-maker which helps recover the 'normal' heart beat) to ones seeking enhancement and/or augmentation (such as aesthetic surgery to enlarge breasts, genetic manipulation of animals, AR), we have somewhat transformed our own biology, that of other living beings, our social structure, and our culture. However, are we taking any responsibility for these transformations, are we measuring the consequences of extending life expectancy and modifying the genetic code (Leach 1967; Shilling, 1993)? Playing an active role in evolution has problematised fundamental ideas that structure society, for example, how we reproduce and die and who has control over reproduction and death (Franklin, 1995, 1997). This allows us, in fact obliges us, to think about what type of creatures we want to be and live with, raising questions in every area of human activity: from the philosophical, legal, political and economic, to the ethical, psychological, emotional and social, passing through the ecological, medical and technological. How we solve these dilemmas will depend, at least to a certain extent, on the particular culture of each society and the debates that are generated within it and their resolutions will set the moral and ethical grounds on which society will develop and transform (Reiser, 2009).

Biomedical technologies involved in reproduction (for example artificial insemination, in vitro fertilisation, intra-cytoplasmic sperm injection, assisted hatching, preimplantation genetic diagnosis and screening, see annex 1 for a description of each) are particularly interesting since they have opened a box in which certain concepts were locked up, for example, the concept of life, death, and body itself. By opening this box and taking these concepts out we have disentangled their meaning giving them new horizons, problematising fundamental social beliefs about kinship, personhood, and human origins. This has sparked, among other things, debates over the rights that the government has or should have over the body and the type of restrictions that should be imposed when using biomedical technologies. Understanding how these transformations are taking place and how these problems are being dealt with and solved is of great interest, particularly so due to the nature of these technologies, the segment of the population that have access to them, the number of people using them, the amount of time these technologies have been in use, and the particular characteristics of historical period we are living in (Giddens, 1999). A period within which the western world has transformed the interaction between what is considered local and what is considered global, a time when traditional regional cultures and economies are transforming, when there is an accelerated connection between individuals attenuating the degree of surprise caused by 'the other', because 'the other' is much closer in distance and appearance than before (Yiwo, 2008) and finally,

² Homeostasis is the tendency to maintain a relatively stable equilibrium between interdependent elements; in this sense, it refers to the tendency towards a normal state or function. For example, there is a spectrum or range of heart beats per minute that a heart is expected to give in order to be considered normal and healthy.

a moment in which the reach of the expert systems has expanded, augmenting the intensity and widening the spectre of the manufactured risk in terms of who and how many are objects of it (Giddens, 1999)³.

According to Beck (2002) and Giddens (1999) we currently live in a 'risk society' which is structured and filled with expert and abstract systems that nobody fully understands and that have created more manufactured risks, guided by a scientific discourse (among others) which has been discovered to be an unstable set of various versions of 'truth', hence no longer grants certainty and protection, and which has an uneven distribution of opportunities for choice -opportunities that have been expanded by technological innovation and by the end of tradition. The conjunction of these (and other elements) has resulted in a society that has become more aware of the risks to which it is subject to and a situation where the damages these new accidents can bring forth are no longer restricted to the location where they are produced. This situation has raised questions within the public (frequently depicted and promoted in the media) about the processes of production (e.g food or medicine production) and the allocation of responsibility. As opposed to danger, which is seen as a given event, controlled by nature, God or any other force other than humans, the term risk refers to predictable harm and danger, a danger that has been taken over (at least apparently) by human agency (control), that has been quantified and somewhat understood, and for which options or paths to avoid or lessen the possibility of it happening have been designed or created (Giddens, 1999). However, some risks have become unpredictable and uncontrollable because they are unknown, yet still manufactured, these uncontrollable risks are not limited by spatial boundaries (their effects go beyond nation-state limits or any other limit), they have a long latency period before one can see their effects, and it is very difficult to assign responsibility about them to people or institutions due to the complexity of the abstract systems that are involved in their generation (Beck, 2002).

The idea of risk, as understood by Giddens and Beck, sheds light on some interesting and problematic issues within health, and more so within AR. In many cases risk is influenced by economic and political factors, in others, such as AR, emotional and cultural elements also play an important part. In few cases within the biomedical realm are there risks for people other than the one being treated (AR and live donation are two examples of this). How should risk be evaluated and dealt with in these situations? As opposed to live donations, in the case of AR the other at risk is in a peculiar situation since he or she still does not exist, hence does not have the opportunity to take part in the decision process. Should there be limits to the use of AR in cases in

³ Paul Virilio makes an interesting exemplification of this by bringing the report offered by Swiss Re, the second biggest re-insurer in the world, in which it is stated that recently, and for the first time since they keep records, the number of technical disasters such as explosions, fires and acts of terrorism (in other words manufactured disasters) represents 70% of the damage they registered (Virilio, 2007).

which there is a substantial genetic risk? Should society establish rules and guidelines to prevent this risk from materialising (Kuhse, 2001)?

In the field of AR, globalisation has resulted in the emergence and growth of reproductive tourism, which although it will be very briefly discussed in this work (due to space and time restrictions), is none the less an important issue worldwide, including Mexico. Within Mexico, people move between city and states in order to access AR services, likewise people go abroad, mainly to the US, in search of the miracle worker, and finally, Mexico is also a site to which people come for AR services from other countries.

In the last century, awareness that the scope of the consequences and effects of our actions goes beyond our immediate time and space has grown. The fact that what we do today will affect future generations might be starting to awaken, as demonstrated with the debate regarding ecological issues. We are now able to see these changes, we have engaged in the task of charting and measuring them. Studying the consequences of the use of science and technology is not only an interesting thing to do, it is an ethical thing to do for we have to acknowledge we are responsible for the future our culture is creating. Actively engaging in the reconfiguration of our biology (and the biology of other living beings) demands we take responsibility of our choices and actions, we debate from an ethical and practical arena the future we are creating. To accomplish this we need knowledge, wisdom, understanding, creativity, and patience. With this project I seek to understand the process of transformation our society is engaging in.

Assisted Reproduction & Social Sciences

Many have studied the use and construction of biomedical technologies involved in reproduction, however, most attention has been given to those studies located within the Anglophone setting (UK: Franklin, 1991, 1993, 1995, 1997; Franklin and Lock, 2003; McNeil 1993, 2005; Strathern, 1992a, 1992b 2003; US: Thompson, 2005; Merrill Squier, 1994, 1999, 2004; and Rapp, 1998, 2003) and, to a lesser extent, to the ones covering European countries such as Italy (Bonaccorso, 2004), Sweden (Malin, 2003; Bryld, 2001), Greece (Paxson, 2003, 2006), France (La Rochebrochard 2003 and Tain and Robertson, 2002) and Germany (Krones et al, 2006), leaving studies conducted in other settings mostly unexamined (Van Balen and Inhorn, 2002). The lack of attention can be explained in many ways. One might be that, as pointed out by Franklin (2006), assisted reproductive technologies (and infertility as a tandem concept) are commonly seen as an exclusively Western preoccupation that does not really affect that many people and that in fact it is a superficial topic that is distracting attention from more

important health issues. Following this line, it might be that, in the case of studies conducted in Africa or Latin America, there is the belief that, because these countries are underdeveloped, with scarce economic resources and still dealing with primary health issues, they must focus their attention and resources in avoiding reproduction instead of overcoming infertility (Castañeda-Jiménez and Bustos-López, 2001; Zegers-Hochschild, 1999). The Western demographic and biomedical discourse sees high fertility as a macro-level indicator of low development, and considers dealing with infertility a low priority in places where fertility is at its highest, poverty is extreme and life conditions are so radically different from westernised cultures (Kielmann, 1998; Feldman-Savelsberg, 2002; Van Balen and Inhorn, 2002).

“Despite the documented prevalence of infertility, local and international governmental and nongovernmental organisations have identified ‘hyperfertility’ and birth spacing, rather than infertility and threatened reproduction, as ‘population problems’ in Cameroon” (Feldman-Savelsberg, 2002:216)

“The dearth of information and interventions pertaining to infertility in Africa testifies to a ‘global climate of concern over population growth and high fertility [that] is not conducive to the perception of infertility as a real problem” (Frank in Kielmann, 1998:132)

In fact, it was common for people to immediately suppose that the subjects of my research were located within the high income bracket, not only due to the cost of these services, but because there is a general belief that the lower income segment of the population, usually associated with indigenous groups, are highly fertile since they are seen in the urban context carrying babies on their backs and with a couple of toddlers bouncing behind (Inhorn and Birenbaum-Carmeli, 2008). However, infertility and AR are present in both rural and urban settings and in developed and underdeveloped countries. In all these settings, yet in very diverse ways, infertility and AR represent a problem for the individual who is facing/using it, for his or her family and for the society in which the infertile individual is immersed, regardless of their socioeconomic status or geographical context. This is demonstrated by many scholars who have looked at other non-Western locations. Researchers have explored the use of AR in African contexts, such as Cameroon (Feldman-Savelsberg, 2002; Nijkam Savage, 1992), Chad (Leonard, 2002), and Tanzania (Kielmann, 1998); Asian countries such as China (Handwerker, 2002), Japan (Lock, 1998), Vietnam (Pashigian, 2002), Sri Lanka (Dissanayake et al. 2002; Simpson, 2004; Simpson, et al. 2005), India (Bharadwaj, 2006; Neff, 1994; Unnithan-Kumar, 2004a, 2004b); Middle Eastern settings such as Israel (Carmeli and Birenbaum-Carmeli 2000; Birenbaum-Carmeli, et al. 2002; Kahn, 2002, Nahman, 2006), Egypt and Lebanon (Inhorn, 2004, 2006). Within the Latin American context researchers have explored the experience of Mexican-American couples in the US (Merkens et al. 2003), as well as specific countries such as Ecuador (Roberts, 2006, 2007), Costa Rica (Jenkins, 2002), Venezuela (Romero Marquez,

2002), Brazil (Guilhem, 2001), Puerto Rico (López, 1998), and Argentina (Raspberry, 2007).

Most sociological and anthropological studies that look at the way AR has been inserted into different cultures and social groups present three common themes: the reasons why people want to procreate; the way infertility and AR are understood; and the actors involved in the decision making process regarding what to do when facing infertility. These three issues seem to be fundamental in determining the way the process of assimilating reproductive services takes place. Examining the issues that become problematised with AR in different contexts provides an insight into how people understand identity and kinship (Unnithan-Kumar, 2004 a) and into the different ways these issues can be accommodated or even resolved. Focusing on locations other than the West is particularly interesting when it comes to AR because it is framed within the contemporary western biomedical paradigm, one which has particular views regarding the ownership and agency over the body and nature, and certain conceptions and parameters of normality and abnormality. Finally, all these studies have one more element in common: they point at the ways in which people's and science's "rationalities are fully compatible with others that may contradict them" (Franklin, 2006:550).

It seems that the reasons behind wanting to have children, and the desired number, distribution and gender ration of them, influence the decision regarding whether or not to use reproductive technologies. Likewise, the particular type of technology that will be used, that will be socialised and naturalised, what will be deemed natural or unnatural and the way each AR option will be negotiated in terms of acceptable-unacceptable, depends on the social role of conception, pregnancy, childbirth, children, motherhood and fatherhood, regardless of the biomedical western division in high complexity, low complexity technologies and social ways such as adoption, polyandry, and divorce.

Procreation is seen as a way of establishing links between people and families. It allows for the establishment of a special bond, distinct from love, between husband and wife and between them and their spouses' family, it legitimises marriage (Pashigian, 2002, Jenkins, 2002). It is also a way of establishing links with past generations, of connecting the living with the dead and establishing lineage continuity (Pashigian, 2002; Handwerker, 2002, Nijkam Savage 1992). There are also strong practical reasons to procreate; children become a work force, they offer care for the elderly and they ensure proper burial (Handwerker, 2002; Nijkam Savage 1992). These reasons for procreation are also related to the way reproduction is conceived. The sociocultural location of all the aspects constituting reproduction (conception, gestation, birth and rearing) and the type of relationship that is considered most important (social,

biological or genetic), will also play a fundamental role in the way reproductive technologies will be received, practiced and arranged, in order of acceptance and desirability within culture, and in some cases, even within the legal system. For example, in Vietnam the biogenetic relationship is more important than the social one, as becomes evident in their argument against adoption:

“There is concern about whether the child’s biological ancestors (alive or dead) led decent lives or committed immoral acts...the child might have inherited a tendency toward negative behaviour and may therefore reflect poorly on the adoptive family... Finally, because the adopted child is not biologically related to the social parents, there is concern that adopted boys in particular will not have a vested interest in the family and will not pray to the adopted family’s ancestors after the adoptive parents are deceased” (Pashigian, 2002:149)

In Cameroon, fostering, adoption, natural insemination by donor, and polygyny are methods for overcoming childlessness that are more acceptable than AID because the methods are more familiar, they take place in the local community and they are perceived more as natural and humane:

“Although these alternatives are not without their own legal and social problems they are often culturally defined with acceptable social procedures of settling them within the community...these socio-cultural alternatives are more readily accepted as alternative methods of procreation for the infertile couple than AID” (Nijkam Savage 1992:913)

Also related to the reasons why people decide to have children are the gender specific reasons to become mother or father. Paxson (2006) points out that the desire to reproduce can be related to the desire to become a mother or the desire to produce children; these are two related desires yet very different indeed. Becoming a mother is commonly associated with completing the female gender role and achieving a new social status: “With motherhood, women are transformed from maidens into adult women, from Eve to Madonna” (Paxson 2006:481). None of these reasons are purely one or the other; they form a multilayered and complex tapestry of reasons. In this thesis I explore this issue within contemporary Mexican society.

The second aspect that is fundamental to the way reproductive technology will be assimilated into a culture has to do with the way infertility is perceived in terms of what it is, why it happens, and whom it affects. This will determine if there is anything that can be done to cure it, overcome it or bypass it, and the diagnostic procedures to identify it. The western medical discourse, put forth by organisations such as WHO, fails to fully recognise that their definition of infertility is not universal (Van Balen and Inhorn, 2002). The length of time one must allow before declaring the individual or the couple as infertile varies from culture to culture (Leonard, 2002), the role and degree of participation of the male and the female aspects in both fertility and infertility are very

diverse as well (Nijkam Savage, 1992; Kielmann, 1998), the way individuals define themselves as infertile is not homogenous (Kielmann, 1998) and the symptoms (i.e. ovulation or sperm production, fertilisation, implantation, holding the pregnancy until due date, the need of assistance in birthing, the number of children birthed, the gender ratio of these, etc.) that must be present in order to be considered infertile are not the same in all cultures either (Pashigian, 2002). The aetiology assigned to infertility is also different between cultures, while in some cultures it is assigned to issues related to delaying pregnancy in other places, for example in Costa Rica, infertility is considered to be God's will by some people, therefore technology can do nothing to change this (Jenkins, 2002) and yet in other locations "childlessness is a matter of fate that one must accept, and it is not something that a society's health care system can be expected to remedy" (Van Balen and Inhorn, 2002:12). Even within the same country it is difficult to generalise about the way infertility is conceived. This is illustrated in the findings of two authors studying infertility in Cameroon, who find contradictory information as to the reason explaining infertility. While one said that it is surprising to find that "only few respondents attributed infertility to witchcraft given the general low level of education and the predominance of the population living in the countryside" (Nijkam Savage 1992:908), another said that the cause of infertility is mostly "attributed to witchcraft practiced by envious peers" (Feldman-Savelsberg 2002:216)⁴. Furthermore, although in most cases fertility and infertility are associated with the female body (Van Balen and Inhorn, 2002), the ownership of this female body is not understood in the same way across cultures (Unnithan-Kumar 2004).

It is important to note that, although within some discourses (e.g. those regarding population growth) there is no distinction between infertility and voluntary childlessness, these terms are not synonymous and they must be treated differently by society and by the state (Van Balen and Inhorn, 2002). Infertility could be defined in biological terms while involuntary and voluntary childlessness in social terms. These may mix, making the issue ever more complex. Nevertheless they are distinct. Distinguishing between these terms is important when discussing how to deal with them and in order to not overlook other aspects that are involved. If infertility is considered, as in most Western countries, a medical condition due to abnormalities in body parts or bodily processes, then it is also representing a health issue and might be symptomatic of other health issues. However, if the situation is related to social issues, for example, unfulfilled desires, then dealing with it demands sociocultural manoeuvres. This does not mean that health issues do not represent social issues and vice versa, but distinguishing between these allows for perception of the peripheral or related issues which otherwise could end up camouflaged by the lack of distinction.

⁴ This might be due to the fact that Cameroon is rich in cultural diversity and that these two studies were conducted in two distinct locations and with several years difference: Nijkam Savage's location was Yaounde in 1992, while Feldman-Savelsberg's was located in Bangangté between 1983 and 1986.

Further discussion about the way the concept of infertility is constructed in Mexico will be touched upon in both chapters four and five.

The third element commonly found to affect the way people live their infertility and the journey through AR has to do with the number and role of the actors involved in the decision process (i.e. what to do, when to stop, who to tell, etc.). In some places it is the couple the only one who decides over these matters, while in others it is the nuclear family, or the extended family, and yet in others the medical practitioners involved in providing these services (Bonaccorso, 2004). As noted by Bonaccorso (2004), in many cases clinicians have more roles than simply diagnosing and advising what programme to take on, offering the success rates and establishing costs. In some contexts they also get involved in choosing the gametes and surrogates. What is more, for many couples the clinician has the knowledge and expertise to control the reproductive process and make their reproductive desire possible. This leads to further questions regarding who has the right to limit reproductive activity when it comes to AR. For example, what happens in cases in which the practitioner has medical information that suggests a particular procedure as the best option but the patient (being here the individual, the couple or the family) decides differently? Or when the extended family does not approve what the doctor and couple have decided upon? All these issues highlight yet another problematic situation: defining who the patient. Is the patient the body in which the procedure will take place, the subject who is contracting (thus paying) for the treatment, the future child, the couple, the couple and those offering gametes or a womb?

As can be seen here the use of reproductive technologies, which are usually foreign, is always coupled with sociocultural ways of assimilating them. An important element in this process is the existence of the local ways cultures have for dealing with or bypassing infertility, these being the acceptance of polygamy, polyandry, adoption, fostering a child, or natural insemination by donor. These offer a type of path that people can follow in the process of assimilating the new technologies of procreation. It is important to underline that the issues mentioned here are not the only issues that conform the acceptance or rejection of reproductive technologies by a particular culture. The technological nature of each procedure, economic factors, technological availability, the language used when presenting the techniques, etc., are all elements that also conform the way reproductive services are incorporated into each distinct culture.

Of all the sites in which AR has been studied, the ones conducted in Anglophone sites and the ones focusing on Latin America are the ones that have more resemblance to the situation in Mexico, hence I will look at a few of these in greater detail. I start out by

reviewing the work of three authors whose methodologies and topics of enquiry inspired me to embark in this journey: Charis Thompson, Rayna Rapp and Sarah Franklin.

In *Making Parents*, Charis Thompson (2005) looked at how AR transformed over time and how it was adapted to the USA. Since her fieldwork was carried out between 1988 and 2004, she was able to document AR's inception in the US almost since its arrival. This allowed her to show, on the one hand, the historical development of some of these procedures, and on the other, how these technologies were incorporated into US culture. She focused on the way parents rather than babies were made, by taking into consideration biomedical interventions, legal aspects, gender roles, and the kinship categories that emerge from these technologies and that are active in constituting parents. She looked at the patient eligibility criteria used by clinics, concluding that some clinics' criteria were directly related to augmenting success rates, a practice possibly related to the existence of the Fertility Clinic Success Rate and Certification Act of 1992, which obliged clinics to report their results and make them public. Another aspect of her work that inspired mine was that she explored the male role in reproduction and AR, or as she calls it, the "ejaculatory role of men" (Thompson, 2005), looking at how virility and masculinity are relocated and reaffirmed in cases of male infertility as well as their role as "good patient/husband/father" (Thompson, 2005:133). Further in her work, she discusses the way ART (assisted reproductive technologies) are being normalised and naturalised, by exploring the way the term ART mutated from 'A'rtificial to 'A'ssisted, she analyses the attempts to have insurance companies cover these procedures, and the various ways patients delimit what is natural and what is artificial about the procedures they use (Thompson, 2005).

In her studies, Rapp does not confine her attention to the medical context but also explores how the different phenomena she studies are equally and simultaneously constructed as a social, political, moral, and ethical issue, paying attention to all factors that take active part in the conformation of the phenomena. In her anthropological analysis of prenatal diagnosis (1998, 2003), for example, she studied the social impact and cultural meaning of the technologies used for examining embryos and fetuses focusing on both the people who decided to use these technologies and the actions they took as a result of the information they obtained through them, as well as on those who did not wish to use them and the rationale behind their decision. One of her aims was to "help to wrest the discourse on new reproductive technologies from the hands of medical experts, turning it over to the women who used, might use, or might refuse to use them" (Rapp, 1998:144). Among other things, she concludes that:

"the pregnancy and the modern technologies which intervene to regulate it are not vested simply within the world of biomedicine and reproductive technology... [they]

both occupy multiple and convergent spaces in the social life of individual women and their supporters; in the lives of diverse medical, educational, religious, and activist constituencies; in modern globally proliferating media technologies; and, of course, in the politics of representation" (Rapp, 1998:145).

Likewise, in her analysis of the production, circulation, and uses of genetic knowledge in cases such as familial dysautonomia, Marfan syndrome and epidermolysis bullosa, she looks at the way the promise of a genetic cure is lived and used by scientists, clinicians, and patients (Rapp, 2003); for example, the use of a genetic-screening test by two distinct social groups, the Orthodox Jews (who use the results of this test as a tool in the control over marriages) and the FD-net group (who see it as a tool in the decision process regarding procreation). She highlights the way the field of molecular biology is presented as a promising and even successful area in the media, yet in the research and clinical setting, the story is slightly different. In many cases, "genomic knowledge has produced little that is life extending, whereas the old-fashioned clinical gaze has produced quite a lot" (Rapp, 2003:143). In other words, it is medicalisation and not geneticisation which has "successfully changed the script of life and death" (Rapp, 2003:145) for people with certain genetic alterations. These examples highlight her complex non static view. Not only does she engage technologies that are parallel to AR and that raise similar ethical debates as AR, but she also approaches the issue in such a way that she recognises the complexity, the multilayered nature and the multiple representations of the phenomenon, the kind of sophisticated and rigorous approach that I wish to adopt.

Throughout her work (1997, 1995), Sarah Franklin offers an attempt to understand the processes of substitution or cultural shift that result from the loss of certainty and the transformation of meaning regarding 'the facts of life' (1997) or the 'natural facts' (1995). She focuses on the explanations, analogies, imagery and responses given by different actors (clinicians, patients, researchers, infertile couples, journalists, parliamentarians) in this attempt to replace one lost certainty or meaning with an emerging discourse, for example, the way reproduction is being redefined in the setting of AR. In *Embodied Progress* (1997)⁵ she looks at the sociocultural (rather than medical) dimensions of in vitro fertilisation (IVF) within the British context at the end of the eighties. She conducted ethnographic work in two British IVF clinics and interviewed 22 white married heterosexual women and five of the husbands about the way they became aware of their infertility, their decision process regarding what to do, how they found out about the clinic they were at, who they spoke to about their infertility-IVF experience, their current situation, and what they would recommend to future patients. In addition to the data collected at the clinics and through the interviews, she also looked at popular representations of AR by analysing the media coverage, popular handbooks and guidebooks, clinical introductory pamphlets and

⁵ Some of these topics were also dealt with in other works by Franklin, see for example Franklin, 1995

parliamentary debates and legislation. Through her multi-sited ethnographic work she found that people see and live infertility and AR as a rite of passage or an obstacle course that took over their life and that they do not have clear indications of when it will end or when they are supposed to stop. They see AR as a compulsory option that they have to take to solve a problem for which they did not understand the cause, and without the option of not choosing it. Within the popular media, she found a strong emphasis on the “biological drive to reproduce” (Franklin, 1997:91) and a representation of AR as a bridge to help the natural life progression to continue, as offering nature a ‘helping hand’ to assist it to progress (Franklin, 1997:91). Similar to what is happening in Mexico (as I will present in the following chapters), in Britain the use of IVF (without gamete or embryo donation or surrogacy) received great support, but “they were much more sceptical towards any technique involving an ‘outside’ party” (Franklin, 1997:86). Throughout her work, she highlights certain elements that are common to what I observed in Mexico. For example, she points out the way assisted conception, when framed as offering ‘a helping hand’, is being protected from being viewed as unnatural or artificial and is being presented as being ‘the real thing’; within the Mexican context, AR was presented as a *‘para-natural’* procedure in that it was following nature yet going beyond it as well (see chapter three). Another example is her observation that the “quest for a miracle baby” (Franklin, 2006:551) is a journey that is highly spiritual as well as biological and technological; the recognition of the spiritual element that is present in IVF, which was evident in many of my informants’ recounts, is highlighted in the selection of the word pilgrimage in chapter four’s title.

Regarding work done in Latin America, the few scholars who have explored this context have pointed out the delay in the legal debate and regulation (Guilhem, 2001) and the role played by religion (Roberts, 2006, 2007; Zegerz-Hochschild, 1999). Regarding the legal debate and the issue of regulation, Guilhem presents an interesting study focusing on Brazil’s regulating trajectory comprised between 1984, when the first IVF baby was born, up until 1999. The situation Guilhem (2001) describes in Brazil holds many similarities with the situation in Mexico. In both cases, the arrival and first successes of AR were presented, in the media, as technological achievements with little concern regarding moral issues, in both cases there is a lack of information concerning the dissemination of these services, local success rates, and number of users, in both cases there are actual uses of AR which conflict with existing laws (e.g. surrogacy). Nevertheless, there are certain differences as well. While Mexico has not established any type of guidelines, in Brazil, the first attempts at establishing guidelines came from within the professional community of AR service providers around 1992. By 1997 they had already presented their first project of law to regulate AR, while in Mexico the first one was presented until 1999.

In her comprehensive study on AR in Ecuador, Elizabeth Roberts looks at the “tensions between institutional and popular forms of Catholic religiosity” (2006:510) when using IVF, which has been so openly discredited by the Catholic Church. In the Ecuadorian context, Roberts finds a strong and frequent use of religious rituals enacted to bless the gametes and embryos with the hope that this will help the procedure. She also compares different approaches to embryos, those which follow what she calls “life ethics”, as is the case in the US, and those which follow the “kin ethics” which is what is more common in Ecuador and Mexico (Roberts, 2007). As she concludes, each approach allows for different uses and disposals of the embryo: “posing embryos as kin...constricts the possibility of embryo circulation, while debating their life makes their circulation possible” (Roberts, 2007:181). Zegers-Hochschild (1999) also touches upon the relationship between Catholic ideas and IVF in Latin America, however he does so without considering the different ways in which Catholicism is lived in each country. Although in general the Latin American population is Catholic, the way each country negotiates religious, political and health related issues is very different. This is a point that is very important to stress in the case of Mexico, hence I will detail the relationship Mexico has with the Catholic church.

For over 150 years religion (i.e. the Catholic Church) has not been allowed to intervene in State affairs. This separation has been fought for in at least two occasions, the first leading to the Reformation Acts (1857) and the second during the Cristero War. The separation between State and Church took its first steps with the establishment of the 1857 constitution in which several changes to the previous one were made (known as the Reformation Acts), such as eliminating Catholicism as the Nation’s official religion, allowing freedom of creed, establishing secular education, nationalising ecclesiastical assets, and taking away from the Church the collection of demographic information (e.g. birth, marriage and death certificates). The idea that the Church should not get involved in the country’s political life was later reinforced in the establishment of article 130 of the 1917 Constitution, which is the current one. In addition to the elements established in the 1857 Constitution mentioned above, this article goes further and regulates things like the number of priests per capita, prohibits religious acts and attires to be held or worn in public (however Christmas and Easter are official bank holidays) and bans the existence of religious orders as well as any intervention of the church in political affairs.

Since 1992 the relationship between State and Church has openly started to shift (although for some this shift is only in terms of how the State tries to control the Church, see Gill, 1999). First, with the proclamation of the *Ley de Asociaciones Religiosas y Culto Público* (Law of Religious Associations and Public Cult), then with

the participation of Bishop Samuel Ruiz in the 1994 negotiations between the EZLN⁶ and the government, then again in 2000 when the newly elected President Vicente Fox openly lived his Catholic faith, the first since the 1857 reforms. Currently, archbishops and bishops have been quite vocal in many aspects of public life, particularly since certain controversial issues have been touched upon, for example, the legalisation of abortion and same sex marriages in Mexico City. However, their participation in political affairs still stirs some degree of discomfort among certain sectors of the population (Cosío Villegas et al., 1973; Ai Camp, 1994; Vargas, 1998; Gill, 1999; Von Wobeser, 2010). In spite of this, the Catholic Church has been the one that has established most of the moral code of the country, although recently several protestant churches have gained considerable force (Gill, 1999)⁷. Within the realm of AR, although the Catholic Church's official stand is against these procedures, in the media they rarely, if ever, mention this openly. The users of AR I encountered throughout this work seldom spoke about the fact that the Church condemned these procedures, even when they made constant references to God as the one holding the last word regarding the success or failure of the treatment. So, as in many other aspects of life, two apparently contradicting discourses, in this case AR and religion, find a way of coexisting when taken down to the individual level and placed within practical everyday contexts.

This particular way of living religion may also account for the lack of research regarding the use of AR and religious faith within Mexico. In fact, the few social studies that look at AR in Mexico have followed either a psychological perspective (Arranz Lara, et al. 2001a, 2001b, 2001c; Alvarez Diaz, 2002, 2006; Carreño-Meléndez and Sánchez-Bravo, 2007; Carreño-Meléndez et al, 1996, 2003; Chávez-Courtois, 2004) or a legal one (Alvarado Duran, 1996; Arriaga García, 2007; Berna Sesma, 1995; Dobering Gago, 1998; Flores Preciado, 2009; García San José, 2007; García-Tinajero, 2004; Moctezuma-Barrágan 2007; Rodríguez-López, 2005; Torres, 2005), only very few have seen the phenomenon from an anthropological standpoint (Castañeda-Jiménez and Bustos-López, 2001; Blazquez-Graf and Flores, 2005). The works related to the legal aspect of AR will be dealt with in chapter three, right now I will focus only on those concerning psychological and anthropological perspectives. It is important to underscore the fact that most of these research efforts have been done within the context of dissertations and theses for masters and doctoral degrees, hence their dissemination has been very scarce and reaching them is quite difficult since there are only a couple of copies located in libraries with limited access.

⁶ Ejército Zapatista de Liberación Nacional (National Liberation Zapatista Army) is a movement that emerged in 1995 with the purpose of raising awareness about and fighting for indigenous rights.

⁷ The 2000 census registered, from a total of 69,235,053 people: 61,267,384 Catholics; 4,965,144 Protestants (from various orders); 2,423,167 without a religion; 259,716 from other religions; and 319,642 did not specify.

The work done by Castañeda-Jiménez and Bustos-López (2001), conducted between 1996 and 1997, looked at the cases of five women seeking AR services at a public institution. Using in-depth interviews that summed up to between 8 and 10 hours of interview per patient, and following the idea of infertility as illness (as opposed to it being a disease), they looked at the way women acted upon and conceived infertility, AR, and the institution that offered the AR service. They also enquired about the non-biomedical treatments used by these women, about how they found out about the institution and about the patient-physician relationship that was established. Similar to this study, Arranz-Lara and her colleagues (2001a, 2001b, 2001c) explored the way in which female patients' representations of motherhood influenced their decision to engage in AR. Like the previous study, they too used in-depth interviews, yet the disciplinary perspective was psychological using the DSM-IV as parameter. The study concluded that the narcissistic structure of the personality, as well as the imaginary of the child, in addition to social pressure, gender roles, the treatment's side effects and the characteristics of the medical institution, all played important roles in the decision process. Like them, Carreño-Meléndez and Sánchez-Bravo (2007) also looked at women's reactions towards sterility from a psychological perspective and concluded that this reaction depends on various factors such as their self esteem, their particular reproductive history (how long they have been trying, number of doctors, type of diagnosis) and the strength of their gender role (how much the desired child determines the meaning and value of their identity as women). In a previous study, Carreño-Meléndez and his colleagues (2003) compared couples facing different types of primary infertility (30 couples with male factor infertility vs 30 couples with female factor infertility) using the Tennessee self-concept scale. They concluded that the couples with male factor infertility were those who suffered a greater loss in terms of their self-concept and suggested offering therapy to these couples during and after AR treatment. As I will explore in more detail in the following chapters, the findings of all these studies resemble many of those here presented, however the present study goes further in several aspects. First of all, while the previous studies only look at cases within the public sector the present study also covers private AR services. Second, most of these studies follow a methodology based on in-depth interviews or standardised psychometric measuring scales, the present study follows a multi-sited ethnographic methodology. Third, the above mentioned studies focus only on the AR user, and mainly on the woman, while the present study aims at looking at both service providers and users, and at both male and female actors. Fourth, the present study also includes media coverage and legal debates, hence it offers a broader perspective on the phenomenon. However, since many of the findings are similar, the broader spectrum of enquiry touched on in the present study gives more strength to the findings of both previous studies as well as this one.

As presented above, scholars in the social sciences have looked at the way biomedical technologies, and specifically AR, are being inserted into various contexts (Inhorn and Birenbaum-Carmeli, 2008), but until now Mexico has been left unattended. The aim of this study is to identify and analyse the sociocultural aspects of AR in Mexico, to understand the way the use of AR (as a means of procreation, as a commodity, as a media plot line, as a biomedical profession and as a subject of regulation and legal concern) modifies perceptions regarding the body, kinship, and the concepts of what is natural and what is artificial. Following a science and technology studies (STS) theoretical framework, I conducted a four year multi-sited ethnographic work with the purpose of looking at the way AR emerged, developed and is in the process of being established in Mexico. The actors in this study were the users of AR and its service providers, however I also include those debating the legal aspects as well as the media coverage. The study will contribute to the existing body of knowledge regarding STS in general and AR in particular, offering an analysis of the Mexican context.

The use of these and other biomedical technologies have created a whirlwind of debates⁸, books, artistic productions⁹, movies¹⁰, plot lines in sitcoms¹¹, families, kids, laws, lawsuits, academic papers, PhDs, and more. This suggests that, on the one hand, people are interested in the topic, and on the other, that people are trying to make sense of it. Some need to understand it because they are in the middle of it, as users, as service providers or as the resulting product, others because they want to be part of it, as policy makers, supporters or detractors. I need to understand it because I see how it is shaping the world I live in, the family I am part of, the students I work with, the way my preceding generation was born and the way my generation will die. All this change is taking place right in front of me and it would be a waste not to grasp it with both hands, eyes and ears to try to figure it out.

The dynamic nature of AR in Mexico and the moment in which this study took off (2006), made the research process relevant and interesting because new issues were constantly emerging, to me as a researcher, as well as in general within the field. Since I began this project, fundamental issues have changed which demonstrate that the

8 For example, the different debates and controversies in the UK and US surrounding the births of the first IVF baby (Louise Brown) in 1978, the first 'designer baby' -as he was called in the media- (Adam Nash) in 2000, the first cloned large mammal (Dolly) in 2003, as well as the debates regarding the use of the genius sperm bank, oncomouse, eliminating sperm-donor anonymity, allowing homosexual couples to conceive using AR

9 For example, look at the work done by Eduardo Kac, a Brazilian artist working with what is called Bio-Art. Using biological materials to create artistic pieces such as Alba (a transgenic rabbit), Edunia (a transgenic petunia) and the Eighth Day, Kac seeks to explore and question the distinctions between living and nonliving, between the different species as we now conceive them and invites us to view genetics as a process of communication. For more on his work see www.ekac.org

10 Three new movies will be out in 2010, all dealing with the use of AR, *The Switch* (Speck and Gordon, 2010) and *The Backup Plan* (Poul, 2010) are both cases of single women who want to become mothers and *The Kids Are All Right* (Cholodenko, 2010) which deals with a lesbian couple using AR to form a family. In addition to these, see *Code 46* (Michael Winterbottom, 2006)

11 Look at the popular sitcom from the USA *Friends*. In at least three occasions reference is made to reproductive technologies; in one, the character is a surrogate mother to her brother; in a second occasion another character wants to use AID since she is single, and in a third occasion a couple tries unsuccessfully to conceive and ends up adopting.

process of development and establishment of AR within Mexican society is currently taking place at a fast pace (as will be discussed in chapter 2). Hence, studying this fast moving target in situ and in real time was a unique opportunity. Due to the novelty of the topic within Mexican sociology, there was a great lack of information regarding basic things such as the number, location and characteristics of the existing AR clinics. Thus, the first task of this work was to identify the actors involved in the construction of the Mexican AR arena. Then more analytical objectives arose, on the one hand, I wanted to understand how these actors were intertwined creating social worlds giving rise to the Mexican AR arena and, on the other hand, to identify the sociocultural elements that emerged as a result of the offering of these services. In summary, the main focus of this work is to understand the way AR emerged, developed and is in the process of being established in Mexico.

Chapter Organisation

I organised the data chapters with the intention of highlighting the dynamic, complex, and intertwined relationship within and between the different actors involved in the Mexican AR arena, as well as the processes of knowledge construction, negotiation, socialisation, and eventually normalisation. The organisation of the chapters seeks to underline three elements: the conditions of possibility for AR to arrive and develop in Mexico, the process of importing and adapting the knowledge undergone by the AR experts, and the process of assimilation and acculturation of AR by the users. In all these three areas I look to identify the place in which Mexican society is situating AR, and aspects of culture are being moved, realigned, re-signified or invented in order to accept and legitimate assisted reproduction.

In this first chapter I set out the reasons that led me to study this subject, I introduced the key literature and set out the structure of the work. In chapter two I present the theoretical and methodological tools that guided this research. Following the idea that AR provides “a key lens through which to view the relationship between science and society” (Inhorn and Birenbaum-Carmeli, 2008:178), I explore the elements of the science and technology studies framework that were most relevant to this work, as well as the specific ethnographic methodology I followed. In chapter three, I present the intricate relationship between contraception and AR. Following a historical narrative, this chapter offers the genealogy of AR focusing on the political, legal, biomedical and social conditions that made possible the arrival and development of AR in Mexico. It covers the emergence and development of the different actors and social worlds involved in this particular arena. Specifically, it looks at the relationship between the family planning schemes of the twentieth century and the emergence of AR, the different efforts to regulate AR services, and the appearance and development of AR clinics and other institutions that emerged around it. In chapter four I explore the

construction of the service provider looking at the emerging disciplines that are involved in AR. This chapter begins with the AR services' family tree and their characteristics, then it looks at the different disciplines (i.e. AR biologists and andrologists) that have emerged as a result of the technological and biomedical requirements of AR, and closes with a discussion of biomedical conceptions of infertility and AR in Mexico. In the following two chapters (five and six), I look at the pilgrimage users of AR embark on in their search for a diagnosis, a doctor, a solution, information, support and above all, a child. In chapter five I present the demographic and medical characteristics of the AR users that participated in this study, then I explore the journey they made, focusing on the patient-physician relationship, the way patients deal with treatment routines, decisions about when to end the journey and the process of dealing with all the elements that using AR entails. Then, I explore the relationship between the desire to have children, the fact that they are not able and the existence of AR, focusing on users' conceptions of infertility and AR and the ways in which they juggle the different elements that come into play. Chapter six looks at the quest for information and support due to people's lack of biomedical and sociocultural information about infertility and undergoing AR. In talking to me, users recollected an array of anecdotes, definitions, stories, and explanations, numbers and statistics, images and sounds. With these, people try to make sense of what infertility means for them and their lives, what AR is and what to expect from it. The last chapter has the purpose of tying together all the threads in order to understand the way Mexican society is making a place for AR, highlighting the many cultural aspects which are constantly moving, being realigned, re-signified, or even reinvented in order to accept AR as a legitimate way of conception and family forming. I also suggest research topics that have hardly been dealt with and which may offer interesting insights into the way contemporary cultures adopt biomedical technologies, first as individuals, secondly as members of a family, and finally, as a social group.

Methodology: The 'How and Why'

Introduction

As mentioned in the introduction, the overall question guiding this work was to understand how AR was making its way into Mexican society by identifying the actors and actions involved in the process of appropriation of these technologies. In general, social scientists have not paid attention to the use of AR in Mexico, not even those focused on science and technology studies (STS) who have looked, in great detail, at the different ways cultures have introduced and used these technologies. This work seeks to contribute to the existing literature of AR studies by offering a first approximation to this unattended issue. In this chapter, I describe how this objective was met, focusing on the nature of the theoretical and practical tools used to gather, analyse and interpret data. As the study emerged from within a STS framework, I begin this chapter by revising the general theoretical ideas shared within the STS perspective focusing on those that guided my work. Then, since this was mostly an ethnographic work, I present a review of the ethnographic and analytical methodological strategies adopted in this research design. I close the chapter with a few ideas regarding the ethical aspects concerning this study.

Science & Technology Studies (STS)

STS is a multidisciplinary area of research that looks at science, technology, and technoscience (Latour, 1987) as a human, therefore social, active endeavour (Edge, 1995:5; Sismondo, 2004:51) and seeks to understand its origins, dynamics and consequences, its relationship to and with society and culture, and the politics that govern it (Thompson, 2005:33, Hackett, et al. 2008:1). Using STS as a framework provides the necessary tools to access a broader, interdisciplinary point of view of a phenomenon and to see the different actors involved as well as the different ways in which they interact. Like other STS studies, this one also has to do with the relationships that constitute technoscience in order to understand the type of world they are creating. Even though STS has flourished in places like the USA, Canada, the UK, continental Europe, Australia, and India (Thompson 2005:34), it is still an uncharted territory in Mexican academia, yet a very much needed one. Therefore, this work also has the purpose of bringing the STS framework to the forefront of Mexican academia.

As mentioned above, STS's general objective is to understand how science and technology are constructed, developed and established within society and the relationships that exist between them and with society and culture. The broadness of

this objective has in some sense allowed great diversity within the community of STS scholars. Their academic and professional backgrounds, the specific topics they address, the methodologies they use and the theoretical lines they follow, are not homogenous in any way (Jasanoff, et al. 1995:XII). Some authors focus on the sociology of knowledge, like those who follow the Strong Program proposed by scholars such as David Bloor (1999), or Barry Barnes and John Henry (Barnes et al. 1996). They look at the causes and conditions that make the construction of knowledge possible and seek to be impartial and equally understand what makes up what is deemed as truth or false, rational or irrational, success and failure, by being symmetrical and using the same kind of explanations for both parts of these dichotomies (Sismondo, 2004). In order to achieve this, some follow controversies under the argument that through them one can encounter moments in which an idea or fact is opened to more than one interpretation, and hence one is able to identify the social mechanisms by which the controversies were finalised and knowledge stabilised (for studies of this sort look at those following Harry Collins's empirical program of relativism, Collins, 1982). Others focus on science in the making, seeing how knowledge is constructed by doing ethnography in laboratories (for this strand look at the work done by Knorr-Cetina, 1999; Bruno Latour, 1987; Latour and Steve Woolgar, 1986). Still, others question why and how certain technologies predominate (Pinch and Bijker, 1984) since, under this perspective, for technoscientific facts or artefacts to be successful they have to construct a society that will assimilate and legitimise them (Sismondo, 2004). Another thread is the one encompassed with the term Postcolonial STS which calls for scholars to take a less provincial perspective and pay more attention to perspectives and issues other than the Anglophone and European (McNeil, 2005). The aim of researchers interested in this strand is to understand how science and technology travel from one setting to another and to destabilise "the assumption that Western knowledge is objective, authoritative and universally applicable...[and] even 'colonialise' and destabilise conventional accounts of Western techno-science at 'home'" (Anderson, 2002:646). Each one of these research lines holds different, sometimes even contradictory perspectives. Although all these strands are interesting in themselves, for this case in particular, some proved more useful than others.

The first set of premises this work draws on are constructivist, relativistic and reflexive in nature. In other words, I am inclined to believe that knowledge results from the complex interactions and interrelations that take place between different actors, such as financing schemes, academic or industrial institutions, people, machines, instruments, things, ideas, and that knowledge needs a set of conventions to discover and sustain it (Thompson, 2005:33). All these elements are in a dynamic relationship, ecologically changing one another rendering different results. These relationships

take place in a specific time and place, within a particular culture with its own history and current situation, hence they are shaped to these elements. Therefore, if the purpose is to understand what knowledge is made of, why certain claims are considered false and others true, one must consider all these elements and their relationships. Likewise, studies that look at these elements are shaped by the researcher conducting them. As noted by Dey, data are not 'out there' tagged as such and waiting for the researcher to collect them, and in fact, they "have to be noticed by the researcher and treated as data for the purpose of his or her research" (1993:55), therefore the researcher, being the one who selects, signifies, organises and interprets data, becomes a tool, therefore it is crucial that the researcher reflects on who this person-tool is.

The second premise can be found in *Science in Action*, where Bruno Latour suggests, as his first rule of method, that we should look at science in the making and not ready-made science, arriving either before facts and machines have been black-boxed or following the controversies that reopen them. However, in the case that pertains this work, AR is not being constructed in Mexico. In fact, it arrived to Mexico several years after it was developed. However, if we consider, also following Latour's ideas, that technoscience is (re)made every time it is used, that "the fate of facts and machines is in later user's hands; their qualities are thus a consequence, not a cause, of collective action" (Latour, 1987:259), then, going back to the period in which AR arrived in Mexico, following its development, witnessing its moments of accelerated growth and the process of its establishment will allow us to see the importing and assimilating of this technoscientific knowledge, hence its (re)making, its (re) interpretation and its adaptation to a specific culture. In other words, we would be looking at the process in which a new user (in this case Mexico) uses a particular technology (in this case AR), assigning (maybe new) qualities and uses to it.

The third premise is inspired in postcolonial STS in that this study seeks to see what happens with ideas or concepts when they travel to new locations. Do they remain as an ensemble or could it be that upon disembarkation, the whole is taken apart for inspection? Could it be that concepts which at their point of departure were unquestioned, are now being questioned when arriving to a new port of entry, while others might have left controversies and debates and, for whichever reason upon entering Mexican soil were black-boxed? Is it possible that by examining the facts that are presented as black-boxed within the Mexican context, and comparing them to the ones black-boxed in other contexts, one can see how a particular technoscience has been transformed when imported? Could understanding the process through which AR is being assimilated and transformed in Mexico, shed light on the way it is

being (re)constructed, and could this in turn suggest appropriate local medical, social, and regulatory frames instead of simply importing foreign ones?

Equally important for this work was considering the role played by the media in the construction and transformation of cultural meanings (Bauer, 2005), in science communication -specifically regarding health related issues- and in shaping social and political debate (Franklin, 1997; Basten, 2009; Mercado-Martinez et al., 2001; Marks et al., 2007). Particularly considering that the Mexican press has been criticised for its partial and unfair handling of many social and political issues (Mercado-Martinez et al., 2001: 236). Only a few studies focusing on the way the media presents health related issues have been conducted in Mexico, and the conclusion in all of them is that the information is frequently incomplete, at times contradictory and usually influenced by politics, policy and personal interests (Basten, 2009; Mercado-Martinez et al., 2001; Llaguno-Aguilar, et al. 2008; Peimbert-Reyes, 2007; Veneu et al., 2008; Massarani et al. 2005). The role of the media can be conceptualised as two major arenas. On the one hand, the media as a vehicle for the transmission of information of health related issues and, on the other, the media (obviously including the Internet) as a space in which people look for and get information, share experiences and opinions, and debate ethical, legal and social matters. In both these arenas, service providers, users, academics, politicians and journalists have presented their point of view and their experiences regarding AR. When doing so, they have contributed to socialise and normalise a definition of AR, they have suggested who should be allowed to use and to offer these services, they have presented ethical and social concerns, and debated whether the State should or not regulate them.

In addition to the 'physical' ethnographic settings I also paid attention to online forums, which I also consider to be an ethnographic site (Murthy, 2008). In them, stories are told, interactions between actors take place, as most of the social interactions of the physical world do. Like such, they imply ethical concerns in terms of participant's consent and issues of privacy, however there is still not a uniform opinion among the professionals scholars as to how these issues should be tackled. This is not an easy task since there are many diverse ways of conducting online ethnography, just like there are many ways of doing ethnography in the physical world. In this particular case, I visited register-free access online forums to read the posts. As I will explore in detail in chapter six, members of the forum had a very clear use of it regarding the information they deemed appropriate for posting on the forum, what had to be dealt with through one-to-one chats and what through e-mails. This could be suggesting an evaluation of different degrees within a public-privacy

spectrum. I only used information that was available online, in other words, the information which was most public.

Identifying & Selecting Actors & Settings

The first step I took in order to understand the way AR emerged or arrived, developed and established in Mexico was to map the arena of AR in Mexico, identifying its actors in order to understand the interactions that take place within and among the social worlds (Clarke and Star, 2008) or social groups (Pinch and Bijker, 1984) that constitute this arena; looking at how they create meaning and how they influence each other. Social groups are composed of people and institutions directly related to the technology, in this case AR. The actors within a social world share a mutual concern and commitment to a specific topic or issue, they “generate shared perspectives that then form the basis for collective action” (Clarke and Star, 2008:115). In this sense, five distinct social groups or actors were identified, each one having different roles within the AR arena. The first, labelled ‘the service provider’, was composed of physicians, biologists, nurses, psychologists, clinics, AR services, and sperm banks; for them, in general terms, AR was their work, their field of intellectual interest, their area of expertise. The second, called ‘the users’, was composed of women, men, and couples that used AR as means of forming a family. Between these two actors was a group of actors who took up the role of establishing settings in which the service providers and the users met. These actors were usually former AR users who now organised support groups or patient-oriented conferences, one of them claimed to be “the bridge between the doctors and the patients” (Expo Organiser). The forth group was ‘the legal actor’ composed of the parliament members and legal scholars who, viewing AR from a legal perspective, treated it as either a subject that needs regulation or as a subject of legal debate. The fifth and last group was ‘the media’; I considered it important to pay attention to press coverage, television and radio programmes since it is through them that AR becomes socialised within a broader public. Images and arguments presented in the media, inform the public and may transform their perceptions regarding reproduction in general, and AR in particular (Bauer, 2005). Each social group had many settings in which they acted and interacted, and this interaction took place both between the members of a same social group and with members of other social groups. For example, service providers met and interacted with fellow service providers in clinics and at conferences. Likewise, users met fellow users at clinics, but also gathered in patient-oriented conferences and at online forums. The legal actors interacted with

the service providers during the events organised by the *Cámara de Diputados*¹ (Chamber of Deputies) and the media gave space for all four actors to appear, either as a news piece or as part of a fictional plot line. The uniting elements that brought these sites together were their discourses and actions² (see table 1 for a summary on the actors selected and the data collection methods).

Table 1 Actors & Data Collection Methods		
Actor	Participants	Method of Data Collection
Service Providers	Five private AR Clinics in Mexico City and one in a nearby city. One AR services within public healthcare system One private Sperm bank Gynaecologists specialised in AR Gynaecologists residents in AR speciality AR Biologists AR laboratory technicians Psychologists specialised in AR Clinic's websites	Reflexive interviews Participant observation at clinics Observation at medical meetings, conferences, and information sessions organised by clinics. Search and collection of websites and printed material distributed at different points.
Users	Two former AR users now support group organisers One former AR user now expo organiser Women, men and couples who were using some type of AR Family members of women, men or couples who were using AR	Reflexive and guided interviews Participant observation at clinics Search and collection of books, magazines and online forums published by users.
Legal	18 initiatives put forth by the different political parties to regulate AR in Mexico. Academic articles on the legal issues of AR.	The government's website was searched for the initiatives. Searching in different databases for academic articles

¹ Mexico's government is divided in three powers: Executive (the President), Judiciary (the Supreme Court) and the Legislature, composed of two chambers: the chamber of Deputies (*Cámara de Diputados*) and Senate (*Cámara de Senadores*). Within each chamber there are specialised commissions or committees in charge of presenting initiatives and proposals for their regulation. With the exception of one, all other initiatives regarding AR came from the Health Committee of the Chamber of Deputies.

² The terms used to refer to the informants or subjects denote a political, emotional and theoretical position regarding them and the researcher. The people I talked to were all informants to me, they were not my doctors nor my patients, they were not my employers nor my employees. So, addressing them by the names that they give each other at the clinic (patient – doctor) felt like I was abiding to the medicalisation of infertility and made me question who is the patient? Is it the woman, the man or the couple? Using the terms user and service provider felt like I was stressing the commodification / commercialisation of reproduction. Furthermore, using one of these set of terms seemed like the actor was fixed in one role, when in fact, they moved from one role to another depending on the setting. For example, in the consultation room the doctor sees the patient as a person seeking alleviation, while in an expo the doctor may see the patient as a potential client. Therefore, I decided to follow this movement and call the actors user or patient / service provider or doctor depending on the context.

Media	Main newspapers: <i>El Universal, La Jornada, Reforma</i> Complementary: <i>Excelsior</i> and <i>Milenio</i> . Main magazines: <i>Tu Fertilidad, Fernanda</i> Complementary: A random selection of women's magazines, health oriented and general interest publications. Main television show: <i>La Rosa de Guadalupe</i> Complementary: <i>In Vitro, Dialogos en Confianza</i> Main Radio show: <i>Los Abogados</i> Complementary: <i>Que tal Fernanda</i>	Newspaper articles: searching in their database and using Goggle employing four search terms (infertility, sterility, assisted reproduction, in vitro fertilisation) published between 1999 and 2009.
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It would have been impossible to cover all the clinics (approximately fifty) and interview all the doctors given the amount of time available for data gathering. Therefore, I chose a sample that would help answer the questions set out. Many elements have to be considered when selecting ethnographic sites, to mention a few, the research design, the opportunities that emerge, the insights the study grants, and chance (Hannerz, 2003). Attention should also be paid to the fact that different sites present different opportunities to answer different questions (Nadai and Maeder, 2005). Regarding sociological studies looking at healthcare issues, most attention has been placed on the doctor-patient interaction, particularly at the consultation setting, leaving other social interactions typical of the biomedical social world unattended (Atkinson, 1995). Hence this study also aimed at looking at other kinds of social interactions, such as those between and among patients and physicians at medical and patient-oriented conferences. I selected two clinics for the long period of ethnographic work, one belonging to the private sector and one to the public healthcare scheme, both located in Mexico City. The selection criteria was based on the historical analysis of the emergence of AR in Mexico and the accessibility these clinics presented in terms of allowing research to be conducted in their premises and with their patients (see table 2 for a summary on the ethnographic sites). The eight months spent at these two clinics served, among many other things, as a way of getting acquainted with the field, learning about the biological and technical aspects of AR and understanding the terminology and the world of AR medical professionals and patients. However, in order to answer my initial questions, it was important to cover as many areas of the arena as possible. Therefore, I also conducted interviews and observations at four other clinics, all from the private sector (one of which was outside Mexico City) and one sperm bank. The length of these sessions ranged anywhere between two hours to three days, during which the different members of

the staff explained the functioning of each area and allowed me to observe their work. Alongside these activities, I interviewed other current and former AR users and I attended two medical conferences³, attended the project-presentation event organised by a new clinic as well as its inauguration ceremony, and I attended five patient-oriented events⁴. In these settings, I had the opportunity of seeing how knowledge was being constructed, transmitted and negotiated between peers and between service providers and users, and how they dealt with the political and ethical issues surrounding AR services. I also had the opportunity to learn about how other infertility clinics work, to find out about the history and genealogy of the Mexican AR industry and the relationships and power struggles that arise between professionals.

Table 2 Ethnographic Sites
AR Services
Private Clinic (Mexico City) 2008 > Observation during 4 months 2 weeks
Public Clinic (Mexico City) 2008 > Observation during 4 months 2 weeks
Foreign Clinic (Mexico City) 2007 > Observation during 3 days
Private Clinic (Mexico City) 2007 > Interview with a Psychologist
Private Clinic (Puebla) 2007 > Interview with a Head of Clinic
Private Clinic (Mexico City) 2007 > Interview with a Head of Clinic & Biologist
Sperm Bank (Mexico City) 2007 > Interview with a Biologist & Administrator
Patient Oriented Meetings
Expo Fertilidad (Mexico City) 2007, 2008, 2009
Recruiting Event (Mexico City) 2007, 2008, 2009
Information Event (Mexico City) 2007, 2008, 2009
Professional Meetings
AMMR Annual Meeting (Puerto Vallarta) 2007
COMEGO Annual Meeting (Mexico City) 2008
Medical Session Private Hospital Mexico City 2007
Presentation of Clinic Hospital, Mexico City 2007
Inauguration of Clinic Hospital, Mexico City 2008
On-Line Forums
2 Mexican AR support On-Line Forums 2009

³ One was the XVII Annual Reunion of the Mexican Association for Reproductive Medicine (*Asociación Mexicana de Medicina de la Reproducción*) held in Puerto Vallarta in 2007. The attendees were mainly gynaecologists, biologists, andrologists and psychologists. The other event was organised by the Mexican College of Gynaecology (*Colegio Mexicano de Ginecología y Obstetricia*) which took place in Mexico City in 2008.

⁴ I attended three editions of the exhibit *Expo Fertilidad*, one information session organised by one of the support groups, and two marketing and information sessions organised by a private clinic.

In order to assess the message and image of AR presented by the media, I also paid attention to the printed media and television programmes in which AR appeared in the plot line of fictional or non-fictional productions, or as an element worth of news coverage (see table 3 for a summary of the media analysed). In terms of the national press, nine years of media coverage given to AR in three major newspapers and several magazine articles published between 2007 and 2009 were considered. In conjunction, the three newspapers that were chosen cover the political spectrum as much as possible: one has the largest circulation in the country and actively attempts to follow a non partisan editorial line (*El Universal*), another represents a right of centre perspective (*El Reforma*), and the third one a left of centre (*La Jornada*). I used their online databases and search engine using the terms infertility, fertility, sterility, assisted reproduction and surrogacy, and chose those pieces that dealt with human reproduction. The articles from magazines and other newspapers were collected randomly between 2007 and 2009.

Table 3 Media Sites Analysed	
<i>La Rosa de Guadalupe</i>	Aired primetime on national TV in 2008
<i>Los Abogados</i>	Aired primetime on local radio, in 2008
Magazines	Various magazines with national circulation during 2007, 2008, and 2009
Newspapers	Articles that appeared between 2006 and 2009 in <i>Reforma</i> , <i>La Jornada</i> , <i>El Universal</i>
AR Clinic's Websites	Accessed in several occasions between 2006 and 2009

There have been several moments in which infertility and AR appear on television. Sometimes they do so as subjects of science communication programmes (e.g. *In Vitro*, Channel 11 IPN) or in serious talk shows regarding social and health issues (e.g. *Diálogos en Confianza*, 2003, Channel 13, 11:00 am), as segments within news programmes (e.g. *Hechos*), and as elements of the plot line in drama series and Telenovelas (soap-operas), for example in *La Rosa de Guadalupe* (2007) (Guadalupe's Rose), *Lo que es el amor* (2001, Channel 2 Televisa, 9:00pm) (What love is), *Agua y Aceite* (2002, Channel 13 TV Azteca, 9:00pm) (Water and Oil) and *Tres Mujeres* (Channel 2 Televisa) (Three women). *Telenovelas*, as well as drama series, are important cultural products in Mexico, viewed by millions of people daily, with an important role in the construction, production and perpetuation of cultural meaning and gender identities (Flores Palacios and Sánchez Santana, 2006), and usually (yet not always) produced with no educational intention. Of all the above

mentioned cases, *La Rosa de Guadalupe* was chosen for further analysis. *La Rosa de Guadalupe* is an hour long primetime fictional drama program aired on national TV in 2007. Each episode tells a different story, each story is independent and the only common element is that one of the main characters goes to the shrine of Our Lady of Guadalupe to ask her to intervene when in difficult situations. At a given moment, a white rose appears indicating that the pledge was heard and that she will intervene. The Virgin of Guadalupe is the main religious image in Mexico, she is, as the programme's ending song states: "the mother of our country, the mother of us all". The episode in which infertility and AR were at the centre of the plot line was, according to its producers, the episode with the highest rating and was the only episode of the programme that sparked a negative reaction from the Catholic Church. Although it does not follow the classic style of a *telenovela*, it can still be considered an important cultural product, viewed daily by millions of people.

In the past ten years, the Health Committee of the Chamber of Deputies has presented a total of eighteen initiatives to regulate AR at a national level. As part of their efforts to establish regulatory guidelines, they conducted two events in which AR biomedical specialists as well as legal specialists were invited to participate. Although none of the initiatives has reached a voting stage, analysing their content can shed light on the way legislators see AR, who they consider should be an eligible user, who they consider an adequate service provider, when these procedures should be used, and whether or not the use of AR should be limited. In order to establish the answers to the previous questions, I analysed the talks given at the event and the eighteen proposals, information which is available online from their website.

In all these cases, I specifically focused on the process of naming, socialising and establishing of infertility and AR. Six themes were found to be recurrent in most discourses, so they were selected as elements to guide the overall analysis: (1) definition, incidence and causes of infertility; (2) definition, success rates and side effects of AR procedures; (3) criteria for clinic, doctor and patient eligibility; (4) sources of information; (5) the interaction between gender roles, infertility and AR, and (6) ethical issues. In addition to these themes, I also analysed the discourse strategy employed (use of reference to experts, testimonies, statistics, numbers) and the tone in which articles were written (whether they were presenting great concern, concern, were neutral, or were promising).

Ethnographic Approach

“Collecting data is like catching a butterfly; if you run after it, it flees, but if you sit quietly, the butterfly sits right on your hand” (Zaman, 2008:148)

Based on the premise that people construct and communicate meaning in daily activities and social interactions, and considering the objectives of this study, in addition to the diversity of social groups or actors that were included, a set of mixed qualitative methods with a strong emphasis on multi-sited ethnography (Marcus, 1995) was used for both the gathering and the analysis of the data collected. The argument for this is clearly and poetically depicted in Zaman’s above cited quote; the only way of catching the butterfly is being patient and respecting, as much as possible, the dance of the actors that compose the social worlds and arenas being studied. This is what ethnography allows you to do. Ethnography, being a “style of research” (Brewer in Zaman, 2008:137; Woolgar, 1991) more than a set of ready-made rigid rules (Fine, 2003), allows the researcher to identify the relevant social groups or actors, observe their interactions in their ‘natural’ setting and thus obtain unexpected information, particularly when studying an unknown social group. In this sense, and following Latour and Woolgar’s understanding of the term ‘ethnography’, the aim is to retain “the working principle of uncertainty rather than the notion of exoticism” (1986:279).

Multi-sited ethnography, as explained by Marcus, allows one to “examine the circulation of cultural meanings, objects, and identities in diffuse time-space” (1995:96). One of the strong elements of this type of ethnography is that it grants the researcher mobility; it gives the researcher the possibility, and maybe even the obligation, to move about within the arena, observing many social worlds and many actors, and how these move and change. In this case, I was able to see the laboratories, the consultation rooms, the waiting rooms, the medical meetings, the information sessions, marketing expos, and the legal and media coverage, as well as the interaction between the actors that made and shaped these spaces. Not being part of any specific group but instead moving between them –what, in this study the members of all groups knew about- made it possible for me to take a non-partisan position in the arena. I was not a member of any group so, in their view, I did not benefit or lose from the decisions or actions that took place in each site.

As stated above, multi-sited ethnography implies looking at a diversity of actors and settings, therefore a diversity of tools for data collection are needed. This mixed engagement with the field demands that researchers interact with informants within a wide range of dispersed sites, enabling the researcher to collect data from a variety of

sources that can range from face-to-face, telephone, and email, to data from electronic sites, popular culture, newspapers, official documents and ephemera (Hannerz, 2003). This type of engagement with the field renders different kinds of data (e.g. field notes, interview transcripts, legal documents, video, audio), that when put together, helps sketch out a “complex social ‘portrait’” (Roberts and Franklin, 2004:286). Like others who study AR (Kahn, 2002; Pashigian, 2002; Handwerker, 2002; Inhorn, 2004,2006), I used various techniques for gathering data at various sites: I used direct and participant observation and reflexive interviews (Hammersley and Atkinson, 2007) in clinical settings, meetings, and expos, and I also analysed digital, printed and audiovisual material. By using multi-sited ethnography with a variety of data collecting tools, which is a common methodology within STS studies – and more so those focused on reproductive technologies (Marcus, 1995)- I was able to find the patches that make up the assisted reproduction quilt and follow their stitching in order to see how the different actors are tied up and tied in.

The research dynamic followed this mixed engagement with the field. While I was in the clinics I also collected data through the media, I analysed the regulating initiatives presented by the Chamber of Deputies, attended medical and patient-oriented conferences, and interviewed service providers and users that were external to the clinics where I was doing the direct observation. With this array of discourses (i.e. media discourse, patient discourse, medical discourse, and legal discourse) I was able to see the complex process through which Mexican culture was assimilating AR; that is, I was able to incorporate information that emerged from various sites into all my research activities. This helped me identify the themes that were most relevant to *all* these sites and actors and therefore delve into them deeper in each encounter. However, this research dynamic also resulted in an overwhelming amount of information which made the process of organising it into coherent chapters a very difficult task.

Ethical Issues: Access & Consent

In each site, gaining access and obtaining consent from the actors differed in terms of who and how access was granted, denied or limited as well as of the scope and type of access I was given. The variations mirrored the different structural and systemic characteristics of the sites, some being very straight forward and others very procedural.

In order to obtain access and ‘official’ consent (as the head of the service said) to the public AR service, I had to go through a lengthy bureaucratic pre-established process that fell under jurisdiction of the education department. This department was in charge of all student affairs therefore, since I was a PhD student, I was sent to this

department. The process consisted of exchanging papers: I handed in a dossier with the project, some photographs of myself, and signed documents indicating I had read the rules and regulations of the hospital, and in exchange, they issued me an ID card which gave me access to all areas of the hospital. In addition to this, I had an interview with the head of the department, whom I had met months before at a bioethics seminar. All the paperwork made the process seem formal and at least apparently unbiased.

Access to the private clinics was a different story. After contacting the different heads of clinics and sending them information about the project, I arranged a meeting with them, during which I verbally presented the project and answered their questions. In all these cases, access was negotiated with the clinics' head director and, as in the public clinic, the process did not involve the rest of the clinics' staff (i.e. nurses, doctors, biologists, administrative staff). In fact, once admitted, I realised that the rest of the staff had not been informed about my presence in advance, and nobody introduced me to the rest of the staff when I arrived. This again resembled the way these clinics worked: on the one hand with a strong hierarchical structure and little communication between the biomedical staff, and on the other, as an education institution where people frequently come and go. However, in order to avoid unsettlement due to my presence as an outsider (something other ethnographers have encountered Zaman, 2008:147), it was important that all people at the clinics knew why I was there and gave me their endorsement. Therefore, I presented the project to each staff member individually.

Obtaining consent from the users also echoed the characteristics of the clinics. While the structure of the private clinic made it possible for me to have private talks with the patients, making it easy to individually present the project to each patient and thus obtain their consent, the physical and structural characteristics of the public clinic made it difficult to approach patients individually without disrupting the general flow of activities; hence I approached patients in groups while they were waiting for their appointment. Nevertheless, in both cases I verbally explained the project's objectives and methods and gave patients a written consent form accompanied by a summary of the project (see annex 2 for an example of the consent forms). Since the issues that were discussed during the consultations were highly confidential, and often evoked strong emotions, from the beginning I clearly stated and reminded everyone that I could be asked to leave the room at any time. At none of the institutions did anyone mention the existence of an ethics committee to evaluate and decide over my research project. Nonetheless, the ethics committee of the University of Sussex approved the research proposal several months before starting fieldwork.

I also attended medical and patient-oriented conferences and read Mexican online forums dedicated to infertility and AR. Access to medical conferences was based on paying a fee, which I did, however regarding some of the patient-oriented conferences I did consider it pertinent to ask the organiser for permission to be there since I deemed the setting and the topics dealt with to be more sensitive and personal. In some of these cases, I voluntarily decided not to participate in certain activities held at the patient-led conferences as a way of respecting people's privacy. The online forums were open access for reading yet registration was required if one wanted to post a message. They thus served as public spaces for gathering data.

At an individual level, service providers and users were all very accessible for interviews and agreed on having them recorded; although in two occasions they did comment that they would not expand on a certain topic because what they were being recorded. Even though in general, I faced no problems in obtaining consent to participate in the study, I did encounter one rejection at one clinic in which I had previously done some observations. At that time the director had been the head of that clinic for some time. When I approached them again, one year later in order to do a longer stay, as we had previously agreed, the first doctor had moved on to another clinic and a new head of this clinic had just taken office. He said he was not sure he could grant me access given his recently acquired status.

Participant Observation & the Role of the Researcher

The main characteristic of ethnography is being present in the field, hence the most common way of gathering data is participant observation. Placing the researcher in the field gives him or her the opportunity to observe, listen, smell and sometimes touch the interaction of the actors. It allows the researcher to perceive how things are organised, how people interact, how they speak and move, to see the processes of negotiation, conflict upheaval and resolution, power struggles, knowledge construction and communication, in one word: action. All this information helps the researcher identify the questions that are relevant to the actors and will give him or her the tools to address them appropriately, in a way that makes sense to the research subjects (Kawulich, 2005). There are various subcategories of participant observation depending on the degree of participation the researcher engages in or the type of relationship he/she establishes with the informants. Following Gold's stances (Zaman, 2008:140; Kawulich, 2005), they can go from full participant, participant as observer, observer as participant or complete observer. According to Spradley's categorisation, there is non-participative, passive, moderate, active and complete participative observation (Zaman, 2008:140; Kawulich, 2005). Adler and Adler offer yet another classification with three categories (Kawulich, 2005):

peripheral membership, active membership and full membership. Overall, the type of participant observation will vary depending on the requirements of the study, the researcher's personality, and the situation observed, since some situations allow for more participation than others, as well as the time the researchers have spent in the field.

I was never a silent observer at the clinics. In general, I followed the 'observer as participant' model with moderate participation and an active membership in certain activities. However, the degree and type of participation I engaged in varied from site to site. In the private clinic, my involvement with patients and staff was more active since the clinic's structure made it possible for me to interact more with patients and staff, and in a more private setting. This mirrored the relationship the patients had with the physicians, as will be fully explored in chapter four. Time also played an important role; the longer I had been at the site, the more I knew about the workings of the clinic and the more my participation was sought by all actors, increasing my involvement in certain activities. In the private clinic, for example, I ended up acting as a translator of information and occupying a space that had not been identified beforehand and that made itself 'present' with my presence. This space, located between the members of the staff and between these and the patient, served as a depository of emotions and complaints. I believe that their knowledge of my first degree in clinical psychology and a diploma in bioethics played an important role in how the biomedical staff and many patients saw me. In their view, I was in the disciplinary boundary between medical science and social sciences and I held some degree of expertise in handling health matters. Due to my background training, most service providers at the clinics assumed that I was a good listener, effective at resolving conflicts, and able to translate medical information to the patients. Hence, it became common for them to approach me with emotional and ethical matters and to ask me things like "go talk to her, she is in such a state".

"In a few cases, I crossed the boundary of being just an observer and drew the doctor's attention to a certain unattended case, explained an X-ray to the patient who did not dare to ask the duty doctor about it..." (Zaman, 2008:149)

Like Zaman, I was sometimes faced with the dilemma of whether or not to intervene. This usually happened when either doctors or patients would address me to answer questions for them, give out information they knew I had, or looked for confirmation. So, following Gary Fine's consideration that, "when members of the group begin asking ... questions about how their group operates it is time to leave" (2003:54), and so I left.

At the public clinic, on the other hand, due to the spatial and systemic restrictions of the clinic I was able to interact with patients alone only in very specific occasions. I usually spoke to them as a group, while they were waiting for the doctors in the waiting room. This allowed me to act as an instigator and moderator of conversation, and gave me the opportunity of witnessing negotiation and socialisation processes, and of listening to patients discuss their feelings and reactions, share their experiences and give each other advice, comment on their treatments, their family affairs and their opinions regarding the doctors and the clinic. Patients would sometimes ask me to send messages or fetch things from their partners who were waiting outside the clinic because they were not allowed in the service's premises. The clinic's staff would sometimes use me as a female chaperone when there were only male doctors available to perform procedures for which a female presence was required.

At other sites, for example conferences, my role resembled that of the rest of the attendees. I would sit and listen to the talks, walk between the booths, talk to the booth attendees and observe the interactions between people, but because interaction between attendees was minimal, I did not approach them.

“...I am the sole human instrument and the data-gathering tool of this ethnography” (Zaman, 2008:136).

As Zaman notes in this quote, when conducting ethnographic research, the only tool for gathering information is the researcher. This surely results in certain degree of bias, since the researcher's subjectivity affects what he or she pays attention to, which informants she chooses or has access to (Kawulich, 2005), the way she takes notes, how she conducts interviews or conversations. Therefore, it is of great importance to reflect on who this tool is, particularly if the researcher takes on any degree of participation, in which case, it is equally important to reflect on the role played out, or made to play out, within the field. Although I have already touched upon this point, I would like to add that, due to my age and gender, and the particular field of study, certain issues were easily raised when talking with service providers and users. Among these issues, the most frequent was the discussion regarding the decision between engaging in motherhood or seeking professional development. I was frequently asked if I had children and if I was thinking of having any. This led to two common situations. The first usually took place if the person asking was a service provider. Since my answer was no, they would quickly add that if I did not ‘hurry’ I would ‘miss the train’ and end up there, asking them to help me become a mother, ‘because they all end up here’. When the conversation was with users, the story was very different. When I first started fieldwork, I was worried about this situation, how was I going to tell these women, who were going to extreme measures to become

mothers, that I did not desire such a role; I feared they would not want to talk to me or that I would not be able to empathise with them. However, I was surprised to find out that many of the women actually agreed with my decision. They commented that the economic, ecological and social situation of Mexico, and the world in general, was not exactly the ideal for raising a child, that professional development could also be a way of self-realisation, that becoming a mother was a difficult decision and that it probably was not a plan for all women. During the first embryo transfer I observed, I realised that what sustained these women through out this intense journey was a strong and determined desire to become mothers, a determination that I felt to be of the same sort as the determination that is sustaining me throughout my project.

Data Recording, Note Taking & Ensuring Confidentiality

Due to the number of people present at the clinics, the diversity of the activities that took place and out of respect to the patients, I did not record the sessions I observed within the clinics. Likewise, I never took notes in front of the patients or health professionals. After each consultation, I would retreat to a quiet place and write down as much as possible and with as much detail as possible. Once at home, these notes were transcribed and expanded in detail. After the first month of observing consultations and talking to patients, I did a first analysis of the data and found that there were certain issues that frequently came up in all conversations. These topics seemed to be key issues, reason for which I concluded it was important to make sure that I covered these points with all patients. To do so, I built an interview guideline (see annex 3) that I used after I had already had several sessions with each patient. I used this guideline to conduct reflexive interviews (Hammersley and Atkinson, 2007), which I did not record but during which I took notes in front of the interviewee. Although it might be said that guided interviews impose a certain degree of structure by selecting the general themes and topics, in this case the topics had already emerged in the previous unstructured conversations. Even though I tried to cover all the points in the guideline, I was flexible in the order in which they were talked about as well as in allowing the emergence of new themes (Hammersley and Atkinson, 2007). Using the combination of unstructured conversation with no in-situ note taking and reflexive interviews in which I took notes in front of them, served at least two purposes. First, although most of the issues had already been talked about in the unstructured conversations, by going through them again with the interview guideline in front of them, I was able to perceive if opinions or meanings had changed. Second, having the informants see the researcher openly take notes, helped them build trust in two ways: on the one hand, it reinforced the idea that the data that was gathered would be used for research purposes (Kawulich, 2005) and on the other, the researcher and the interviewee could verify if what the researcher understood was

what the interviewee had said. I frequently shared details of my research with the informants and they offered suggestions that helped 'perfect' the interview guideline I used (Knuuttila, 2002:15). In fact, the guideline changed as I spoke to more people. New topics were added and certain ways of phrasing questions changed. By doing so, I, as the researcher, was somewhat inviting the informant to be a collaborator in the study, which in turn helped the study in many ways (Marshal and Batten in Kawulich, 2005). For instance, in making the research questions relevant to the members of the social world being studied so they could "recognise themselves at least partly in the findings" (Nadai and Maeder, 2005).

I did record the talks at the conferences, both patient-oriented and medical, some of the individual interviews with users and service providers, and some of the shorter observation sessions at clinics. These recordings were later transcribed verbatim and analysed following the same guidelines as the rest of the data. It is pertinent to underline that all notes and recordings were in Spanish and analysed in Spanish, only those which would be quoted in the final text were translated by me.

The names of all the people I spoke to, the names of institutions and clinics that participated as informants have been changed to protect confidentiality. All data (audio, images and text) has been stored in a computer and an external hard drive with a password that only I know. Nobody except me has had access to the raw material. My supervisors and those who have read some of the chapters, have all viewed the data already translated and encoded with the pseudonym. The only time when names were not changed was when they appeared in quotes taken from the media.

In this chapter I detailed the way in which this research was carried out, explaining why I considered STS as the appropriate theoretical framework and the rationale behind choosing a mixed methods approach composed of multisite ethnography at clinics, conferences and online forums, interviews, and an extensive media and legal analysis. First, I provided an overview of the main theoretical ideas behind this work and argued that by following a postcolonial STS perspective I was able to focus on how Western science and technology is assimilated and transformed in non-western settings, and following a constructivist, relativistic and reflexive perspective, I was able to see the way AR was moving into and settling within Mexican culture. Following this, I described the way in which the sources of information and the sites where I did the ethnographic work were selected, the process through which I obtained access and consent, and the way in which data was collected and analysed. I highlighted the advantages of combining unstructured and reflexive interviews, pointed out the few ethical issues that emerged and offered reflexions on the role I

had as a researcher and the way my gender, age, and professional background affected the research process. Having explained the framework within which this study is located, detailing the methodological and analytical tools with which data was collected and interpreted, it is now pertinent to move on to the data chapters in which the results of this research are discussed. In the following chapter I will present the genealogy of Mexican AR, introducing the actors involved in it as well as the broader field in which AR flourished.

Contraception & AR: Two sides of the same coin

Introduction.

“I started out with contraception, and from there approached infertility. Contraception and infertility are both related to hormones, they are the two sides of the same coin...I was invited to work at the Hospital...we did lots of research in endocrinology, hormones and reproduction...created a contraceptive program...It was there that I started treating patients with infertility problems. Back then it was only artificial insemination.” (AR Specialist)

As stated by this AR specialist, contraception and assisted reproduction (AR) can be seen as two sides of the same coin: the coin of fertility-infertility. Two sides but one same essence: control over reproduction. One side seeks to obstruct reproduction while the other seeks to facilitate it, and both sides have been object of political, social and emotional debates. While Mexico has had little to do in the development of AR as such, it did participate in the development of the contraceptive pill, which, as we will see, did play an important role in the development of AR.

The purpose of this chapter is to present the genealogy of AR as the emergence of the two sided coin of contraception-AR focusing on the elements that contributed and prepared the path for AR's emergence and development in Mexico. In the following pages I will describe processes of assimilation and acculturation of a technology which is constantly changing and evolving. The chapter is divided in four sections. The first (Fertilisation & Development) covers the period in which the field of AR emerges, the second (The Birth of an Industry) presents the process of consolidation, and the third (Drawing by Numbers: Painting the Landscape of AR in Mexico & Latin America) sketches out the current panorama of AR in Mexico and Latin America. The chapter closes with a current snapshot of assisted reproduction in Mexico in terms of the health care system and the legal framework related to AR.

Fertilisation & Development

The interest on sterility and infertility as health matters in need of biomedical attention in Mexico dates back to 1949, when the first national biomedical professional association regarding sterility emerged: the *Asociación Mexicana para el Estudio de la Esterilidad* (AMEE) (The Mexican Association for the Study of Sterility). Inspired by a series of articles on the subject published in Mexico between 1905 and 1939, and the discussions held during the first Mexican meeting on Gynaecology and Obstetrics in the late 1940s, a group of Mexican gynaecologists considered that a multidisciplinary group including urologists, radiologists, endocrinologists,

pathologists, lab technicians and veterinarians was needed in order to intensify the biomedical research on the biological, clinical, prophylactic, therapeutic and social aspects of sterility and infertility (Vázquez-Benítez, 2008). Their principal aim was to establish standardised criteria for the interpretation of various test results (e.g. the spermatoscopy, histerosalpingography, endometrium biopsy and hormone measurements) (Vázquez-Benítez, 2008). After a year of monthly meetings, held in both public and private health institutions, the association started to publish a journal called *Estudios sobre la Esterilidad* (Studies on Sterility). Almost since its inception the association held the idea that the couple, as opposed to only the woman, should be the focus of attention, and that sterility and infertility were two different problems. Echoes of these ideas and efforts can still be heard today, and those who pioneered this area of healthcare, as well as the places in which they worked, became crucial in the structuring of AR in Mexico.

After the Revolution (1910-1921), Mexico followed a pro-natalist agenda (Vallarta Vázquez, 2005), seeing itself as a country with vast lands and considerable resources, yet with a limited population to inhabit, work and protect it. Life expectancy was low (38.8 years in the 1940s), so the number of pregnancies and live births did not indicate the number of children that would make it to adulthood¹. Furthermore, within Mexican society, having children was (and still is) important, not least, because the social structure relies on the immediate family for help when it comes to work and support during illness and old age, therefore the more children one had, the more work that could be done and the higher one's survival expectations (Gutmann, 2009:9). In this context, encouraging people to have large families made sense. These pro-natalist attitudes were strong not only among the people, who believed that economic help and priority in job allocation should be given to large families, but among policy makers as well (Mejía Modesto, NA; Zavala de Cosío, 1992; Gutmann, 2009). During that time there were laws (within the 1936 *Ley General de Población* - General Population Law) that prohibited advertising or selling contraceptive methods in public health establishments as well as the practice of abortion (Zavala de Cosío, 1992). However, mortality rates were still quite high, so regardless of the fertility rate, during the first thirty years of the twentieth century, Mexico had limited population growth (Gutiérrez-Sánchez, 2000). At this point, reproduction was still seen as an issue beyond the individual's control.

During the 1940s, Mexico's economic growth allowed the establishment of better education programmes and a better health system, which in turn, lowered mortality rates (Gutiérrez-Sánchez, 2000). Although at first fertility rates remained the same, the reduction in perinatal deaths led people to start thinking about childbearing in a

¹ Perinatal mortality was high and life expectancy was low.

different way: from having many children so at least some would live, to having the number of children desired because -most probably- all would live (de Barbieri, 2000). This shift in attitude might explain the minor reduction in Mexico's fertility rate from 7.3 children per woman in 1958, to 7.2 in 1964 (CONAPO, 1999). Evidence of this shift in attitude is reflected in the results of a survey conducted in Mexico in 1978 among men and women of middle to lower socio-economic level and in rural and urban areas. In it, the respondents distinguished between the large families of the 1970s, with 4 to 8 children, and the large families of their parents' generation when couples had over 10 children (Folch-Lyon, et al. 1981). This indicates a decrease in the number of children even before the family planning campaigns began.

Meanwhile, towards the end of the 1950s, academics and politicians in the US and the UK claimed that the growth of the Asian and Latin American populations would lead to catastrophic scenarios with food shortages that would end in wars (de Barbieri, 2000). This 'demographic explosion' or 'population bomb' (Soto Laveaga, 2007; Caldwell, 2001; Najam, 1996), as it was called, required investment in research towards understanding the biology of human reproduction, in order to improve contraception, and the social and demographic characteristics of the countries with high population growth, in order to develop family planning projects. Developed countries urged underdeveloped ones to adopt demographic programmes and policies (de Barbieri, 2000:50). These efforts first materialised in places like India (1954), Pakistan (1959), China, South Korea, Taiwan and Japan (Segal, 1966). By 1966 several countries in Asia, the Middle East, Africa and Latin America had governmental or para-governmental population growth control programs and services (Segal, 1966). Although, during this time Mexico's official agenda was still pro-natalist and selling contraceptives in public health centres was still illegal², some people were already using either non-biomedical methods (i.e rhythm and withdrawal) or attending the private sector for 'modern' family planning methods (i.e IUD and surgical sterilisation) (Zavala de Cosío, 1992; CONAPO, 1999). This too might explain the slight yet measurable decrease in global fertility rates mentioned above (7.3 children per woman in 1958 to 7.2 in 1964) (CONAPO, 1999).

Furthermore, other emerging and strong discourses of the 1960s and 1970s were adopted by the population control agenda. One of these was the Human Rights movement. The Human Rights discourse placed health as a human right³ (Evans, 2002; Austin, 2001) and promoted gender equity. The population control agenda

² Ironically, in 1951, a team of Mexican scientists led by Luis Ernesto Miramontes Cárdenas, Carl Djerassi and Jorge Rosenkranz, synthesised, in a then Mexican pharmaceutical company called SYNTEX, one of the main molecules necessary for the development of the contraceptive pill (Arredondo Rivera and Juárez-Sánchez, 2009).

³ Establishing health as a fundamental right that individuals can claim, locating it as an entitlement and not as a commodity which can be bought, sold or limited to affordability.

adopted these ideas to emphasise the message that women had the right to control their fertility and that, in order for this right to be fulfilled, accessible information and methods were needed (de Barbieri, 2000).

Within the professional biomedical arena, in the sixties, reproductive biology became institutionalised and recognised as a biomedical speciality. Evidence of this are the creation of the first independent departments dedicated to this area of research and the establishment of fertility services in two of the most important hospitals -*Instituto Nacional de Nutrición Salvador Zubiran* (INNSZ) (National Institute of Nutrition Salvador Zubiran)- which by that time already had 20 years of experience researching hormones and reproduction- and in the *Instituto Mexicano del Seguro Social-Centro Médico Nacional* (IMSS-CMN) (Mexican Institute of Social Security) (Gual-Castro, 2000). INNSZ's department of reproductive biology opened in 1965 under the direction of Dr. Gual-Castro, it had a laboratory that was dedicated to the research of the biomedical aspects of hormones, a specialised service on reproductive endocrinology and sterility, and a family planning clinic -the first one in the public health system (Gual-Castro, 2000). Once more, the two sides of the coin are present here: the same department offered two services, one to overcome sterility and the other to obstruct fertility. Then came the establishment of reproductive biology as an academic field. Towards the end of the 1960s, the Faculty of Medicine at the *Universidad Autónoma Nacional de México* (UNAM) (National Autonomous University of Mexico), in conjunction with the INNSZ and the IMSS-CMN, opened the first program of reproductive biology in Mexico, initially as a specialisation program and then as masters or doctoral degree (Gual-Castro, 2000). Several years later, in 1974, the *Universidad Autónoma Metropolitana* (UAM) (Metropolitan Autonomous University) and the INNSZ created an undergraduate program in reproductive biology, and almost two decades later, in 1991, the *La Salle University*, in conjunction with a private fertility clinic, opened its postgraduate degree within their medical faculty. Simultaneously, doctors at the Gyneco-Obstetrics Hospital No.1 began studying the effects of immunology on infertility (Tatum and Delgado-García, 1968)

The growing concern with overpopulation also permeated the AMEE. Several of its members shifted their attention from infertility and sterility to contraception. Their multiple research projects and the importance of the subject led them to change the name of the association to *Asociación Mexicana para el Estudio de la Fertilidad y Reproducción Humana* (AMEFH) (Mexican Association for the Study of Fertility and Reproduction), in 1966 (Vázquez-Benítez, 2008). The other side of the coin became visible: on the one side, fostering reproduction and on the other, interest in halting it.

During the 1960s and 1970s, while scientists in the developed world were pressured to find ways to treat female infertility, biomedical researchers in the underdeveloped world were pressured to find ways to limit fertility because fertility rates had reached a peak and both national and international concerns regarding population growth was strong and growing ever more so. By that time, some Mexican doctors, mainly within the private sector, academics, and politicians had already embraced a discourse of the economic and social consequences derived from population growth, and were in favour of the idea of controlling it through family planning programs. Nevertheless, non-governmental organisations such as the *Fundación para Estudios de la Población* (affiliated to the International Planned Parenthood Federation) and the *Asociación Pro Salud Maternal* (Association in Favour of Maternal Health), were conducting research on hormonal contraceptives and establishing clinics both in urban and rural areas (Zavala de Cosío, 1992). Although the Catholic Church openly rejected family planning programs, this did not affect the reception and adoption of the programme since, as some studies suggest, religious practices had little effect on the reproductive decision of Catholic urban couples (Zavala de Cosío, 1992). This is something we can also observe when considering AR options, which I will discuss again in further chapters. Although by 1970 the total fertility rate had gone down to 6.8 children per woman, by 1980 Mexico's official stand on reproduction began a process of radical transformation: from favouring large families and natural fertility, as stated in Luis Echeverría's 1970 presidential campaign '*poblar es gobernar*' (to populate is to govern), to promoting the reduction in the size of families and controlling fertility in order to delay and space pregnancies. In sum, the new perspective on population policies that emerged during the 1970s had a very clear objective: to radically slow down population growth (Vallarta Vázquez, 2005).

So, while the first human embryo transfer was being carried out in the UK in 1972 (Edwards, 2001)⁴, in Mexico, the first official family planning campaign was being unrolled. The next year, the law was modified to allow the advertising and sale of contraceptive methods in public clinics (Zavala de Cosío, 1992; CONAPO, 1999). Then, in 1974, after the International conference on Population and Development was held in Bucharest, several important political moves were made to reinforce the new perspective on population growth. First, the new *Ley General de Población* was enacted, obliging the state to offer family planning services in public institutions for free. Then, the Constitution was amended (article 4)⁵ to state that every person has the constitutional right to decide freely, responsibly and with information, about the number and spacing of children they have (CONAPO, 1999). Finally, the *Consejo*

⁴ The first embryo transfer to result in a pregnancy took place in 1973. However, this pregnancy did not result in a live child, "menstruation appeared 9 days after transfer and 21 days after the previous menstruation" (De Kretzer et al. 1993:728)

⁵ Article 4 " *todos los individuos tienen derecho de decidir, de manera libre, responsable e informada, acerca del número y espaciamiento de sus hijos*" Every individual has the right to decide, freely, responsibly and well informed, about the number and spacing of their children.

Nacional de Población (National Population Council) (CONAPO) was created, and has been responsible ever since, among other things, for transforming people's attitudes towards the ideal family size and the use of family planning methods. CONAPO used various methods to send out the message that family planning benefits the individual, the family and the country as a whole (CONAPO, 1999:57). Some of these, like the use of *telenovelas*, proved to be so successful that the method, known as the Sabido Method⁶, was exported to other countries (Soto Laveaga, 2007)⁷. As its logo shows, CONAPO's perspective and messages changed with time reflecting changes in society (see figure 1). Its first logo depicted a family of four - a woman, a man and two children- all standing side by side with the man at the centre, taller and between the mother and the children, indicating that the ideal family size was four: two parents and two children. Then it transformed. Keeping the four member family stereotype, they now use stick human figurines that do not denote gender. The second child is a baby, thus suggesting a wider gap between the two children, and the family is depicted sheltered within a house, highlighting the idea that having a smaller family allows a better lifestyle. Likewise, the verbal messages also changed. The first campaigns used the phrase *Vámonos haciendo menos...* (let's become less...) and at the end of the sentence different values and objectives were added. These could be: "let's become less macho", or "...less people", or "...less corrupt". The next campaign, aired in the 1980s, had the slogan *La familia pequeña vive mejor* (small families live better) and *pocos hijos para darles mucho* (few children to give them more). Both were phrased as statements of fact, they addressed the couple and they emphasised on the benefits of having a smaller family for both the family as a group and children, yet they never specified verbally how small the smaller family had to be in order to obtain the predicted benefits.

Fig 1 CONAPO's Logos

Old

New



⁶ www.populationmedia.org

⁷ For more on family planning campaigns see Gutmann (2009), de Barbieri (2000) and Pick de Wise (N.A.)

By 1978, year in which the first IVF baby was born in the UK, the *Coordinación del Plan Nacional de Planificación Familiar* (National Family Planning Coordinating Office) was created in Mexico, with the purpose of coordinating all family planning programmes and efforts in order to meet the goal of drastically reducing population growth by the end of the century. The entire Mexican healthcare system was involved in the family planning project. They developed what turned out to be highly effective methods such as the *oferta sistemática* (systematic offer) and the establishment of quotas (Vallarta Vázquez, 2005). The systemic offer meant that women were offered contraceptive methods at every single health care consultation they went to, even when it was not related to gynaecological issues. The quotas system consisted of a set number of women that had to be either sterilised or incorporated into the family planning program. Meeting or passing these quotas granted extra income or funds to both the health practitioners and the clinics (Gutmann, 2009). Female surgical sterilisation and the intra uterine device (IUD) were the methods mostly recommended by the public health service due to their practicality, the perception that they did not require much follow up, and because apparently their abandonment rate was much lower than that of hormonal contraceptives. The majority of the sterilisation procedures were done at public health institutions, usually after giving birth, after having a miscarriage or an abortion (Zavala de Cosío, 1992). Furthermore, in rural areas, women were offered to be taken to the nearest health centre, were given a contraceptive method (i.e. IUD or sterilisation) and were taken back to their hometown the same day.

Among the first to adopt family planning methods were women who by the mid 1970s, when the campaigns began, were either in their mid 30s (women born between 1937 and 1941) and wanted to limit the number of children they had, usually after having the fourth child (Gutiérrez-Sánchez, 2000; Zavala de Cosío, 1989), or were starting their marital life (women born between 1942 and 1946) and wanted to delay pregnancy (Gutiérrez-Sánchez, 2000). This is one of the first clear examples of a growing desire to delay pregnancy, something that becomes central within the discourse of infertility and AR.

The next presidential period, led by Miguel de la Madrid (1982-1988), was marked by various important events, like the major earthquake in 1985, reforms in the health system that aimed at covering most of the indigenous areas of the country and, in the area of reproduction, the establishment of the first private AR clinics in Mexico: one in Mexico City and one in Monterrey, NL. This does not mean that prior to these clinics no other health care institution offered infertility treatments. As already stated, two of the major hospitals had programmes offered infertility treatments since the 1960s and, at least since the early 1980s, some doctors were offering low complexity

techniques (e.g. artificial insemination) and some even high complexity ones (i.e. in vitro fertilisation). However, these were the first *clinics* and as such they sketched out the first lines of what would later become the standard of what an AR clinic should be⁸. By 'standard AR clinic' I mean that there are certain requirements that need to be fulfilled in order to label a clinic as such. These requirements have evolved throughout time; at the beginning it meant offering (either in-house or outsourced) a specific array of treatments (i.e. high and low complexity ART), then it was also important to have a name, usually other than that of the leading doctor), a logo, specialised equipment (incubators, potent microscopes, etc), and a specific type of multidisciplinary staff (gynaecologists, nurses, and biologists). By the 2000s, this label also meant putting emphasis on the control of air purity and other environmental elements (e.g. light, temperature and humidity), as well as having a website and a complex marketing system.

The appearance of the first AR services and clinics, their first success with GIFT in 1988, as well as the boom in family planning campaigns, all took place simultaneously. Hence, two messages were being sent at once (although the number of people each one reached was drastically different): on the one hand, the official message of limiting fertility, and on the other, the emergence of a service that encouraged it. Nevertheless, both messages highlighted that biomedical knowledge and technology were able to control reproduction.

In the six years of Carlos Salinas' presidency (1988 to 1994), Mexico's total fertility rate went down from 3.7 to 3.0 children per woman (CONAPO), the relationship with the Vatican was re-established, the North America Free Trade Agreement (NAFTA) was signed, and Mexico was accepted as part of the OECD. The combination of signing NAFTA and globalisation becoming more intensified in general, resulted in a 'tsunami' of foreign influence: consumer products, television programs, ideas of individuality and consumerism, all were having impact on health issues. This influence reached the new set of family planning campaigns put out in the 1990s, hence the message presented slightly changed. The main slogans were now: '*Planifica, es cuestion de querer*' (Plan! it is a matter of wanting), '*Tú decides si te embarazas*' (It is your decision if you get pregnant), '*Hombres y mujeres, diferentes pero iguales*' (Men and women, different but equal), '*Porque tus decisiones son importantes, infórmate*' (Because your decisions are important, get information), '*Infórmate, es tu derecho: Planifícatel, una buena opción*' (Get informed, it is your

⁸ As an example see Victor Ruiz Velasco's article where he makes a distinction between the places that do not have the necessary elements to be considered an AR centre and those that do, and he emphasises on the need to publish success rates if the centre is to be a trustworthy one (Ruiz Velasco et al., 1996).

right: Planificate⁹, this is a good option). In these, family planning was framed as an accessible option and emphasised values of individualism, responsibility, empowerment, human rights, and gender equality by putting emphasis on the fact that family planning was an individual's decision, a matter of will, and a good option (Nazar-Beutelspacher, et al. 2004:148). At this stage, the messages targeted a broad audience including teenagers, young adults, families and elder people, from both rural and urban settings. Not only did they seek to promote family planning values, but also awareness about sexual and reproductive health and about the services offered by the government (e.g. *planificate*). It was also in this period that the first male-oriented family planning campaign was launched: *Vasectomía sin bisturí* (vasectomy without scalpel), although it had little impact (Gutmann, 2009).

Parallel to this, other elements also fuelled the preoccupation with reducing population growth and the desire for family planning: high levels of pollution and population densities, mainly in the big cities (i.e. Mexico City and Guadalajara), repeated economic crisis (1976, 1982, 1994), higher life expectancy, greater gender equality -both de facto and in discourse- and techno-scientific advances. People now felt they could control the number of children they had more accurately, since they had more certainty that the number of children they had would be the same number that would see them to their grave (De Barbieri, 2000).

Globalisation also influenced the community of AR service providers. In 1991 a group of Latin American AR specialists organised and began the Latin American Registry of assisted reproduction. Their goal was to create a consolidated database with the information that Latin American clinics would voluntarily share in a uniform way, with the purpose of giving doctors and patients an instrument to "allow them to legitimate the efficiency of these treatments in a scientific way... create an educational tool that, together with health professionals, would allow couples to evaluate the cost and benefits of ART procedures; ... develop a comprehensive regional database to serve as an external reference for each centre's self-evaluation; and finally, to have a robust database, allowing for epidemiological research to be conducted" (Zegers-Hochschild, 2002:356). Achieving legitimacy was important to the AR biomedical community since frequent questioning and critique had been expressed regarding the existence and offer of treatments and services with low success and high cost in contexts (i.e. under developed countries) in which other treatable life threatening diseases had not yet been dealt with appropriately. As clearly stated by the World Health Organisation document *Progress*: "how can the provisions of these technologies -which are expensive and have a success rate of less than 30% be

⁹ *Planificate* was a telephone helpline for family planning issues. The name is the merging of 'Planifica' which means to plan and 'tel' as in telephone

justified in developing countries with poorly developed health services that are still struggling with infectious and chronic diseases...?" (WHO, 2003:1).

When this registry began, few centres had protocols for data collection, computerised registration or experience with multi-centre trials. Furthermore, there was concern as to who would access this information and what purpose it would serve, particularly since competing clinics would be disclosing success rates and other information that could potentially affect their business. This concern suggests an emerging mercantilistic perspective within a health-service context. Nonetheless, the registry had the necessary acceptance within the professional community to evolve, four years later (in 1996), into a network: the *Red Latino Americana de Reproducción Asistida* (Red-LARA) (Latin American Network of Assisted Reproduction). The network's purpose was to expand their reach in areas concerning continuing education, multi-centre research, establishment of standards, ethical debates, and policymaking. In 1995, 42 clinics met at a Red-LARA conference and established common criteria for dealing with certain ethical and legal issues. From this meeting a document called *The Latin American Consensus on Ethical and Legal Issues Connected with Assisted Reproductive Technologies* was published. This document deals with 5 basic areas: marital status required to obtain reproductive assistance; gamete donation; cryopreservation of concepti; pre-implantation diagnosis; and research on concepti (i.e embryos). However, the views represented in this document do not necessarily reflect the views of all the participating countries, nor of all the participating doctors and clinics; in fact, although the network conducted a study focusing on the attitudes among AR users in Latin America, the study only covered three countries, Chile, Colombia and Brazil (Zegers-Hochschild, 1999), hence it cannot claim to represent all of Latin America. There are some discrepancies between the solutions given to some of the issues touched upon in their document and the way they are actually resolved in Mexico. For example, Red-LARA suggests only married heterosexual couples should be allowed to use AR, and explicitly states that lesbian or single women should not be allowed to use it (Zegers-Hochschild, 1999), however Mexico not only does not follow this line in practice, and in fact is currently in the process of legalising gay marriages and granting them the right to adopt (at a local level), indicating that the perception of what a family should be is currently in the process of changing. The network has also created a standardised consent form with the intention of having all centres certified by this body, or affiliated to it, use it when employing in vitro fertilisation (IVF), gamete donation, GIFT, Inter-cytoplasmic sperm injection (ICSI), and when cryopreserving embryos and zygotes. And, as a way of standardising laboratory procedures in order to conduct multi-centre research, Red-LARA has created a manual for AR laboratory procedures and a manual for embryo cryopreservation.

During the last six years of last century (president Ernesto Zedillo's term), the fertility rate in Mexico decreased to 2.4 children per woman and there was a shift from population control policies and population control programmes to reproductive health programmes. Changing the emphasis from the family planning paradigm to the reproductive health paradigm, meant shifting attention from population control to focusing on the "institutional, cultural and political context in which the decisions pertaining to reproductive and sexual behaviour" (CONAPO, 1999:185) take place. Within this new paradigm, reproductive rights, family planning, maternal and child health, infertility and STI-D, were all united under the same conceptual frame and a new programme called *Programa de Salud Reproductiva* (Reproductive Health Programme) was drawn up with, among others, the purpose of offering information and orientation regarding prevention, diagnosis and handling of infertility. During this period, the number of AR clinics multiplied fivefold: from 3 clinics in 1994 to 17 in 2000. The first legal proposal to regulate AR was presented in 1999 by the National Green Party (PVE). Again, changes in perspective were reflected in the professional community which in 1992 changed its name, this time from AMEFRH (previously the AMEE) to its current name: *Asociación Mexicana de Medicina de la Reproducción* (AMMR) (Mexican Association of Reproductive Medicine)¹⁰.

There is a clear point of influx at this moment in time for the area of AR. Mexico left the 20th century with 17 private clinics scattered throughout eight cities, a professional association dedicated to reproduction, one proposal to legislate the existing clinics, professionalisation programmes at three universities and some media coverage of the matter. All this suggests that by the year 2000 Mexican AR had reached a new phase.

The Birth of an Industry: The Industry of Birth

Together with the turn of the century came a change in power. After 70 years of a single party regime (PRI) a different party won the elections (PAN) in 2000. Within the first years of the new government, three governmental bodies related to AR were created: *CENATRA* (in 2000), *COFEPRIS* (in 2001), and *CNEGySR* (in 2004). *CENATRA* (*Centro Nacional de Transplantes*) (National Transplant Centre) deals with issues related to organ and tissue donation and transplants, although it does not fully deal with the donation of gametes nor embryos¹¹. *COFEPRIS* (*Comisión Federal para la Protección contra Riesgos Sanitarios*) (Federal Commission for the Protection of

¹⁰ It is interesting to highlight the use of certain terms in the names this association has adopted. First it used the term sterility, then fertility and reproduction and now medical reproduction. Likewise, the first two included the word study and the third one does not. The journal they published when the association was first established ceased to exist, however recently they started publishing a new one called *Reproducción*.

¹¹ It keeps track of a few of the ova donations that occur.

Sanitary Risk) is in charge of issuing the licences and permits for health care establishments that deal with surgical and obstetric procedures, and handle organs, tissues and cells; they are the only official regulating body that, to some extent, looks after the establishment of laboratories in which gametes and embryos are kept and manipulated. The *CNEGySR (Centro Nacional de Equidad de Género y Salud Reproductiva)* (National Centre for Gender Equity and Reproductive Health) was created with the purpose of dealing with gender equality and reproductive health issues. Although they claim to offer information and orientation regarding the prevention, diagnosis and handling of infertility, the set of articles on infertility and AR that they offer in their website are all in English, with the exception of one¹².

Specifically, within the reproductive setting, the field of AR in Mexico flourished in the following ten years (2000-2010), not only in a technological sense, but above all, in terms of the impact on the market and societal. During this time, the field of infertility and AR went from being a research topic and a highly specialised procedure offered at a few healthcare services, to becoming a fully established industry, with a standard of what makes up an AR clinic, a marketing system, specific financing options (e.g. *Matrices* offered by a national bank¹³), a professional association (*Asociación Mexicana de Medicina de la Reproducción*), support groups for users (e.g. *Asociación Mexicana de Infertilidad*), a magazine (*Tu Fertilidad*), a yearly expo (*Expo Fertilidad*), some media coverage (within national television and radio programmes), a few malpractice lawsuits¹⁴, ethical and legal debates within the academic field, and some efforts to regulate practice.

The process of technology development and transfer accelerated between 1978, when the first successful IVF took place in the UK, and 1988, when the first successful GIFT took place in Mexico. This technological transfer escalated again after the development of ICSI in 1992; it only took a year to be adopted in Mexico and has now become the most used procedure in Latin America (Red LARA, 1999, 2000, 2001, 2002, 2007). This acceleration may be due to various factors. On the broader scale, globalisation, mass communication, and exchange studentships made way for the arrival of foreign techniques into Mexico faster, and it became possible for potential users to find out about them faster as well. On a more reduced spectrum, the evolution of the techniques themselves during this time also affected the ease with which these techniques could be adopted and successfully used in other locations, as well as where and who was involved in this process. The first success with high complexity AR in Mexico was using GIFT and it took place in 1988. This

¹² www.generoyreproductiva.salud.gob.mx

¹³ *Matrices* (which translates as 'shades') is a financing scheme that helps people pay for elective plastic surgery, dental work, and AR procedures. Elective plastic surgery and AR are two things that private health insurance companies do not cover for.

¹⁴ For more on this see: www.conamed.gob.mx

procedure was developed in 1984 by a team of Latin American AR specialists working in the US who had direct and constant contact with Mexican doctors; this could have influenced its arrival to Mexico.

From its early stages, the AR industry seemed to be highly profitable. In fact, during one conference, the director of a foreign clinic pointed out that before opening a branch in Mexico in 2000, its headquarters conducted a study and identified Mexico as a 'profitable market'. New clinics began opening every year, some as branches of existing national clinics, others as branches of -or affiliated to- foreign clinics (from the USA and from Spain), some as services within or as part of private hospitals, and others as independent centres. These last ones were usually set up by doctors who had either trained or had worked in the older clinics and had reached a stage in their professional development when they felt they needed to become independent. Before long, clinics started to use different marketing techniques to attract potential clients. Some started offering free information sessions in big conference venues with an average of 500 attendees per session, during which they gave out information regarding the basic aspects of reproduction, the main causes for infertility, AR procedures, general statistics regarding use of AR and infertility incidence, and success rates. During these events they also raffled free consultations, gave out discounts for future treatments, presented options for payment and, in some cases, allocated some time for people to share their experiences, usually as testimonies of success. These sessions generally were advertised on the radio, newspapers and on their websites. By 2006, many clinics already had put up websites, most of them with similar sections and information (e.g. some give out basic staff information, others present their success rates, and most inform about infertility and AR procedures). A few offer either on-line consultations or forums where emotional support is given by fellow patients. In addition to the websites and information sessions, some clinics started placing ads in newspapers and on giant street billboards (fig. 2), paying for articles in magazines or placing advertisements in Google and banners in sites having to do with infertility or reproductive health.

Soon, conferences about AR were being organised, the professional ones organised by independent private clinics (for at least 3 years *Reproducción y Genética AGN y Asociados* and *Reproducción Asistida de Mexico* organised separate independent meetings to which foreign doctors were invited), or by the medical associations (i.e. *AMMR* or *COMEGO*), and others by pharmaceutical companies for AR users¹⁵. Furthermore, the biomedical community started publishing articles regarding the urgent need to regulate AR in Mexico, the results of individual centres, and bioethical matters.

15 For example, in 2006, Organon organized a talk called *Viajando Hacia la Fertilidad* at the Hotel Marquis Reforma in Mexico City



Fig. 2 Billboards in motorways and main roads in Mexico City

Likewise, media coverage of the topic also increased. For example, in a newspaper (El Reforma), only six articles about infertility and AR were published in 1999; the next year there were twenty-four. This phenomenon also happened in other newspapers (see table 4 summarising the number of articles that appeared in each newspaper analysed). Women's magazines also dedicated either single pieces (e.g. *Salud y Bienestar*, 2005; *Mari-Claire*, 2006; *BbMundo*, 2006; *Deep*, 2006; *Visión Universitaria*, 2006; *ABC*, 2006; *Nexos*, 2006) or entire issues to infertility and AR (e.g. *Fernanda*, 2006). The topic also received considerable coverage on television and radio. For example, daytime talk shows invited AR specialists and users to discuss infertility and AR (e.g. *Diálogos en Confianza*, channel 11, 2003), soap operas and drama series included AR in their plot line (e.g. *Lo que es el amor*, channel 2, 2001; *Sin Pecado Concebido*, channel 13, 2001; *Agua y Aceite*, channel 13, 2002; *La Rosa de Guadalupe*, channel 2, 2008), science communication

programmes explained the functioning of AR (e.g. *In Vitro*, channel 11, 2007) and radio shows presented everything from the science behind it to the legal issues that emerge from its use (e.g. *Los Abogados*, MVS Radio, 2008).

<p>Table 4</p> <p>Number of articles in each newspaper</p>											
	<1999	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<i>Reforma</i> (229)	2	6	24	21	31	37	32	38	9	18	11
<i>Universal</i> (145)	0	1	11	11	14	15	24	20	13	24	12
<i>Jornada</i> (61)	1		1	2	0	5	6	12	4	13	14
Total (435)	3	7	36	34	45	60	62	70	26	55	37
<p>Note: The information presented here was obtained using the newspaper's search engine and the search terms infertility, sterility, assisted reproduction, and IVF. The search was conducted during July 2009</p>											

In 2004, a group of users, mainly women, organised into a formal support group named *Asociación Mexicana de Infertilidad* (AMI) (Mexican Infertility Association). This association was established as a national, nonprofit, nongovernmental organisation financed via donations (mostly from members), by a group of women who faced infertility and went through AR¹⁶, with the objectives of helping people with fertility problems make informed decisions about treatments and 'other options of how to become a parent' (e.g adoption), and to increase awareness about infertility issues among health care professionals, as well as among the public. They also offered emotional support to those facing infertility or undergoing AR by organising frequent formal and informal gatherings and keeping up a website with a very active forum.

By 2007 the topic had already proven to be profitable in terms of media coverage and there were already over 45 clinics offering services both in Mexico City and throughout the country. This context led a former AR user, who also happened to be a marketing and media expert, to organise *Expo Fertilidad*, with the idea of bringing doctors, their clinics, and potential patients together. Simultaneously, this same person started editing a magazine dedicated exclusively to AR, called *Tu Fertilidad*.

Within the legal area, two important events were organised with the purpose of informing policy makers about the different aspects of AR. The first one took place in 2001 and was called *Medical and Legal Implications of AR*. The second one was held in 2004 in several cities throughout the country and was called *AR in Mexico and its*

¹⁶ The first women to establish AMI were from Monterrey in Nuevo Leon, a state in the north bordering the US. It is the second most important city in the country and has a strong cultural influence from the US.

Expectations. Specialists were invited to talk about the medical, technological, legal and ethical aspects of both AR and genetics. Likewise, a considerable number of articles and book chapters were published within the legal field. However, most of these were either discussing the possible legal issues that can arise from the use of AR, gamete donation and surrogacy, or explaining how AR is regulated in other countries. Over 18 proposals for AR regulation had been presented by 2008, some local and others national.

Financing schemes to pay for these expensive procedures also emerged. The first and most popular one, called *Matices* (shades), was offered by a Mexican bank (IXE). This credit is advertised as being intended for the improvement of one's 'personal image' and includes treatments such as angiology, bariatric and plastic surgery, dermatology (e.g. laser depilation), gynaecology, hair implants, nutrition, odontology, ophthalmology, otorhinolaryngology, dental treatments, and fertility procedures¹⁷.

As this recount depicts, in the first 10 years of the 21st century AR became consolidated as an industry. In the following section I will sketch out the current state of affairs, offering some comparative analysis between Mexico and other Latin American countries.

Drawing by Numbers: Painting the AR Landscape in Mexico & Latin America

As described in the previous two sections, AR in Mexico and in Latin America has developed in a context of little regulation and rapid expansion. AR clinics have emerged and multiplied, a growing number of health care professionals are specialising in the field, and more and more people are becoming users. Hence, more children are being born as a result of these procedures, yet no federal health authority has considered AR a priority in their agenda. Therefore, with the exception of Red-LARA and its yearly registry, there is practically no reliable quantitative information regarding the total number of clinics that operate in each country, the number of cycles they perform yearly, the types of procedures they use, their outcomes, or the type of people they serve. Furthermore, the majority of the clinics are privately owned -according to the Red-LARA over 90% (Zegers-Hochschild, 2002; Red LARA, 2007)- making it even harder to obtain information unless it is voluntarily shared, which is the principle under which Red-LARA operates.

Although according to the Red-LARA's director, only 20 to 30% of the clinics operating in Latin America report their data to Red-LARA, the network claims to have data on over 80% of the procedures done in Latin America (Red LARA, 2007).

¹⁷ See http://www.ixe.com.mx/portal/document/doc_list.jsp?id_document=14274 (accessed September 5th, 2010)

However, regarding Mexico, in 2007 only 27 clinics reported data to the registry. Although there is no official database indicating the total number of clinics operating in Mexico, the magazine *Tu Fertilidad* has a directory of over 50 clinics, a number that is consistent with what I have found in my research. Furthermore, according to the organiser of *Expo Fertilidad*, pharmaceutical companies say there are over 90 clinics and doctors offering AR. One of the possible reasons for the discrepancy between some of these numbers might be the varying definition of what constitutes a clinic. For example, pharmaceutical companies may have a higher number because they are mainly interested in who prescribes their drugs. Therefore, a doctor who is neither a specialist in AR nor working at an AR clinic but who prescribes their drugs, could be included in their databases. Nevertheless, while we must bear in mind that there is no way of knowing what is going on in the clinics that do not report their data to Red-LARA or whether it resembles what happens at those that do, looking at the historical recollection of data held by the Red-LARA's registry can help us draw a picture of what AR looks like in Latin America and in Mexico. In addition to this, it can also shed light on the process of consolidation of both Red-LARA as a professional organisation and of AR as a biomedical field.

When the Red-LARA's registry started in 1990, 19 centres¹⁸ located in eight countries participated reporting a total of 2,460 treatment cycles. In 1999 there were 93 centres in 11 countries and they reported a total of 14,763 cycles. By 2007, a total of 34,102 cycles had been reported, done in 138 centres in 11 countries. At first, Brazil and Argentina were the countries with the highest number of registered clinics and the highest number of reported cycles. By 1999 Mexico became the third country in both the number of clinics affiliated to Red-LARA and the number of cycles they reported and by 2007 Mexico became the second country with most clinics registered to Red LARA and the third in number of cycles. Mexico has grown from six clinics registered in 1996 to 27 in 2007 and from 1,026 reported cycles to 4848. Together with Brazil, they are the only two countries which have significantly increased the number of clinics reporting to Red LARA.

The Red-LARA reports focus on infertility and the technologies from a gynaecological perspective ignoring the andrological aspect. The information they present refers almost exclusively to the female user, looking at her age and a general diagnosis of the infertility, yet omitting whether it is a case of primary infertility (never had a

¹⁸ In order to be a member of this network, clinics have to go through a continuous accreditation process (every three years), which consists of having a biologist and a clinician visit the clinic and evaluate the laboratory facilities (e.g. air purity, culture media, incubators, etc), the clinical and laboratory procedures (e.g. ovulation induction, handling of gamete and embryos, fertilisation, embryo transfer, consent forms follow-ups, etc) and check the records (Zegers-Hochschild, 2002). In addition, they have to upload their records onto a predetermined platform, which then goes through a process of verification, in which they cross reference the information the clinic provides with the information gathered by the visiting evaluators. Interestingly, they highlight that back in 1999, a few clinics were expelled from the network because they had reported inconsistent information.

pregnancy before) or secondary infertility (existing prior pregnancies), as well as other health issues (e.g. diabetes, overweight, thyroid problems). There is no information regarding man's age nor the type and cause of his infertility (azospermia, oligospermia, etc), even when according to their data, male factor infertility represents at least 30% of the cases (Red LARA, 1996, 1999, 2000, 2001, 2002, 2007).

Regarding the techniques, the report looks at the origin of the gametes (e.g. if they were donated), the ovarian stimulation protocol, fertilisation, transferring and implantation techniques (IUI, IVF, ICSI, GIFT, AH), the number of embryos transferred, their stage at transfer (frozen or fresh, and stage of development), and the post-transference hormonal support protocol used; yet, they do not mention the use of male related procedures (e.g. MESA or TESA) nor the type of techniques used to prepare the sperm samples. When reporting the outcomes, they focus on the number of clinical, ectopic and multiple pregnancies, the number of live births, the week when birth occurred (whether they are premature or not), the cases of malformation and the number of abortions. However, they do not pay attention to the number of c-sections or induced labour. Furthermore, there is no registry of followups, neither of the woman nor of the child.

Red-LARA is the only source of information so, in spite of its limitations, it can be used to sketch out an image of AR in Latin America. According to the data held by Red-LARA, the use of GIFT and IVF has decreased while the use of ICSI has increased. In most cycles three embryos were transferred, and the age of the female user has gone up. The last Red-LARA report (Red LARA, 2007) concludes with a call to face the challenge of reducing the number of multiple gestations, resulting from transferring too many embryos in one cycle. They point out that multiple embryo transfers may be happening due to the lower success rates reported when transferring fewer embryos. Nevertheless, they stress the benefits of transferring only one or two selected embryos, something that is repeated in other venues in the field (e.g. medical conferences and articles).

The Health System in Mexico

What follows is a sketch of relevant aspects of the Mexican health system (López-Acuña, 1980; Tamez and Molina, 2000a, 2000b; Vázquez-Osako, 2006; de la Torre, 2006), a conglomerate of three distinct relatively autonomous service schemes: a work related scheme, a public scheme, and the independent privately owned services (Tamez and Molina, 2000a, 2000b) (see table 5 for a summary of the structure of the Mexican Health System). Each one of these serves a different sector of the

population, they have their own set of hospitals, their own staff of physicians, nurses and med students, and their own ways of financing, administrating and structuring their services. Nevertheless, all three systems are regulated, though in different ways, by the *Secretaría de Salud* (Ministry of Health). Some of the work related schemes are paid by the worker, the employer and the state, others just by the worker and the employer. Only those working in a sector affiliated to this scheme can benefit (de la Torre, 2006). The rural workers and the self-employed can only use the public scheme or the independent-private services (Vázquez-Osako, 2006). The public scheme is partially subsidised by the government and the rest is paid by the user at tailored fees. The costs of the independent-private service are charged to the user at market price.

The first healthcare institution affiliated to the work-related scheme emerged in 1943, currently there are various institutions that provide this service: IMSS, ISSSTE, SEDENA and PEMEX. The *Instituto Mexicano del Seguro Social* (IMSS) (Mexican Institute of Social Security) is offered to workers in business of the private sector affiliated to the IMSS. The *Instituto de Seguro Social al Servicio de los Trabajadores del Estado* (ISSSTE) (Social Security Institute for State Workers), is offered to state and federal workers. SEDENA (Ministry of National Defense) provides services to the armed forces, and PEMEX (Petróleos Mexicanos, Mexican Petrol Company) offers services to workers of the state national oil monopoly (de la Torre, 2006).

<p>Table 5</p> <p>Structure of the Mexican Health System</p>				
Healthcare Services & Schemes	Institutions & Hospitals	User Eligibility	Financing	Fees
Public Scheme	This scheme (SSA) has 12 institutes for the research and care of health related issues, and 14 general and specialised hospitals, including 3 psychiatric.	Offered to people without health insurance.	Bilateral: Part comes from the government funds and part is paid by the user of the service.	Fees are charged depending on the users' socioeconomic level and medication is offered at a reduced price.
Independent Private Services	Hospitals: Grupo Medica Sur, Grupo Angeles, ABC, Hospital Español, etc.	Anybody who can pay for it or has private insurance.	The user pays for the service	Fees are established by the doctor and or the hospital and medication is bought at private pharmacies at market price

Work Related Scheme	The institutions are ISSSTE, IMSS, PEMEX, SEDENA and each one has its own set of hospitals throughout the country.	People working at affiliated organisations.	Trilateral: On third the government, one third deduced from the worker's salary, and one third paid by the employer.	The user only pays for some of the medication.
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The IMSS is supposed to be trilaterally financed; paid by the worker, the employer and the state. ISSSTE and PEMEX, on the other hand, are financed through a bilateral scheme, employee and state contributions in the former and labour union members and company contributions in the latter. In all cases, doctors are salaried and organised into labour unions. The general practitioner, who is assigned to the patients by the institution, is the gatekeeper and has the power of referral to secondary and tertiary healthcare facilities. Some of these schemes' hospitals - particularly those within the IMSS- are at the forefront in medical and hospital technology, and are used at full capacity thus, access to them is difficult (Tamez and Molina, 2000a, 2000b).

This scheme offers a mixture of social, economic, cultural, welfare and health benefits: health care coverage (for the employee, their spouse and their direct dependents), maternity insurance (including prenatal care, medical healthcare for delivery, maternity leave, and benefits for the infant such as powder milk and child-care centres), disability insurance, life insurance, retirement pensions, recreational facilities (vacation centres, theatres, etc) and financing for housing (Tamez and Molina, 2000a, 2000b).

The public scheme emerged in 1939 with the idea, at least theoretically, that healthcare is a right of the entire population and it is the State's responsibility to provide the service. This scheme is run directly by the Health Ministry. It covers those uninsured by the work related schemes. The population it serves is a mosaic from all strata of society that include wealthy self-employed professionals, people working in the informal sector, workers of family businesses, individual's who employ insured workers (employers), the rural workers that are not organised into unions, indigenous groups, seasonal workers and the unemployed (Vázquez-Osako, 2006). The scheme has a group of primary, secondary and tertiary hospitals and institutes that work independently. It is funded by the state through general taxation and has a highly centralised organisation. The definition of priorities and the distribution of resources takes place at a central level and depends on the prevailing political environment (Tamez and Molina, 2000a, 2000b). The AR service within this scheme is offered, or not, in tack with these changing priorities. The hospital's staff is paid fixed salaries

regardless of productivity. Users pay for walk-in consultations, hospitalisation and treatment based on their socio-economic level (Tamez and Molina, 2000a, 2000b). Each institution fixes the rates and the way in which they are set. Initial contact is through the general practitioner, who is assigned to the patient by the system and has the power of referral to specialised treatments.

The third option for healthcare is contracting the service with an independent private health care provider working on a for-profit basis. These providers can be general practitioners or specialists working within large privately owned hospitals, small independent clinics or independently. Within this group fall both the biomedical licensed healthcare providers and the unlicensed traditional healers (e.g. *sobadores*, *hueseros*, *hierberos*, *parteras*, etc¹⁹). There is lack of data regarding these services, yet it is estimated that they are mostly used for obstetrics, gynaecology, surgery and psychiatric issues (Tamez and Molina, 2000a, 2000b). Users purchase the service, either directly or via a health insurance policy (which only covers biomedical services). The consumer is either the bourgeoisie and middle class sector of the population, in cases of the biomedical services or, in some situations, lower income uninsured segments of the population, mostly using the traditional healers.

Legal Aspects of AR in Mexico: Current & Prospective

Within the context of federal legislation, AR is currently located between a rock and a hard place. With the current laws, in some situations AR is in a legal void since nothing is said to place these procedures as legal or as illegal, yet in others, the existing laws, depending on how they are interpreted, can be applicable to cases of AR. In these cases, the concepts used within these laws need to be revised to see if they are applicable to the current situation or if they need to be redefined. Taking embryos as an example, the way the law is written does not stipulate whether embryos are legally equal to cells, tissues and organs or if they are considered full grown individuals. Their legal status will determine the laws and regulations applicable to them. Similarly, the current Mexican law protects life from the moment of conception, yet it does not specify if conception is referring to fertilisation, to implantation or both, and if it has to take place in utero or it is also valid term for when it happens in vitro (Dobernig Gago, 1998).

Nonetheless, as mentioned earlier, there are a few national governmental bodies (CENATRA, COFEPRIS and the Ministry of Health) and one law (*Ley General Salud*, LGS - National Health Law) that deal with certain aspects of AR. At a local level,

¹⁹ All these are types of traditional healers that use different techniques. The *sobadores* use what could be understood as a traditional type of massage; *hueseros* could be understood as a type of chiropractic; the *hierberos* use traditional herbal medicine and the *parteras* are midwives.

however, there are two places that have specific regulations concerning some civil aspects related to the use of AR. One is Tabasco's Civil Code and the other is Mexico City's Civil Code. Both emphasise that the use of AR has to take place under consent of all parties involved, that they acquire full paternal and maternal legal rights and responsibilities for the offspring, and that no distinction should be made between those born as a result of AR and those born without the use of AR. In addition, Mexico City's Civil Code also considers the use of technologies such as cloning and genetic manipulation. The code forbids reproductive cloning and the creation of embryos for purposes other than reproduction, but authorises genetic manipulation aimed at avoiding genetic disorders²⁰. Furthermore, Mexico City's government is currently debating a proposal for the regulation of surrogacy. Regarding this same issue, Tabasco's Civil Code states that, in the case of using a surrogate mother, with or without donated ova, maternity will be assigned to the contracting mother²¹.

However, AR professionals and deputies²² believe there is need for a specialised governmental body and legislation to fully and specifically regulate the use of AR, oversee licensing and certification issues, establish norms for consent documentation and legal contracts, demand and collate reports, keep records of gamete and embryo donations, conduct inspections, establish guidelines for use, and give aid when solving ethical dilemmas. Some proposals suggest this specialised governmental body should be constituted as multidisciplinary, including experts in AR and members of the public (González-Martínez, 1999; García Tinajero, 2004; Martínez-Álvarez, 2005). Having this regulating body could promote a process of formalization in terms of gathering and centralising information, creating local statistical data, and establishing clinical standards.

Legal scholars have presented, analysed and debated the different aspects of AR in Mexico, they have analysed the existing laws and their applicability to AR and they have compared them to those in other countries (mainly the UK, the USA, Germany and Spain) (see Rodríguez-López, 2005; Dobernig Gago, 1998; Moctezuma Barragán, 2007; Alvarado Durán, 1996; Arriaga García, 2007; Flores Preciado, 2009; Berna Sesma, 1995). However, they have not considered the few cases that have reached court concerning civil issues related to AR. Moreover, they have not taken into account the few but existing medical, sociological, anthropological, and psychological studies that have looked at the way AR is being used in Mexico (Álvarez-Díaz, 2006; Arranza-Lara et al. 2001a, 2001b, 2001c; Carreño-Meléndez et al. 1996; Carreño-Meléndez et al., 2007; Carreño-Meléndez et al., 2003; Castañeda-

²⁰ Article 293 Chapter 1 Title 6 of Mexico City's Civil Code.

²¹ Articles 92, 327, 165 and 340 of Tabasco's Civil Code.

²² Members of the Chamber of Deputies

Jiménez et al. 2001; Romero-Márquez, 2002). All this information would help them evaluate the current situation and therefore consider appropriate legislation according to Mexico's needs.

As mentioned before, legislators have also shown interest in the topic. The Chamber of Deputies for example, organised two forums to inform its members about the scientific aspects of AR and the legal issues that arise from them. The first forum, called *Implicaciones Médicas y Jurídicas de la Reproducción Asistida en México* (Medical and Legal Implications of AR in Mexico) took place in Mexico City in October 10th 2001. Six different speakers were invited to talk about causes of infertility, embryo development, human genetics, and the biological, technical and legal aspects of AR in humans. Speakers were either academics or practicing biomedical specialists. Although some legislators suggested members of the public should be included in the regulating body that would oversee AR, they did not include any in the forum they organised; not even users were invited, hence the views and opinions of the users and the public were not heard nor considered. In more than one case there was a strong religious and conservative angle on the part of the speaker who presented the topic. For example, one speaker, a physician from a work-related healthcare institution, twice declared that the origin of life started with Adam and Eve, another one, also a physician, spoke of the 'miracle of life'. This same person spoke of homosexuals and homosexual couples as being against moral and legal principles and questioned whether if legalising homosexual marriages, as in countries like Sweden and Holland, was not a step backwards rather than forwards. The second forum, called *La Reproducción Asistida en México y sus Expectativas* (Assisted Reproduction in Mexico and its Expectations) took place during 2004 in four different cities (Cuernavaca, Monterrey, Guanajuato and Mexico City²³) however information regarding the specific speakers and their topics was not available at the time of this study.

The two forums have been the background for the eighteen initiatives presented by the Health Commission of the Chamber of Deputies to regulate AR at a federal level (see annex 4 for a list of all them). After more than ten years since the first one was presented, none of them has ever reached voting stage. According to some representatives, this happens because they spark ideological, moral, medical and clinical debates that have not been resolved; others believe that there are pressure groups that are against AR since they do not consider these procedures to be a therapeutic technique (Prieto-Furken, 2003.04; Rodríguez, 2007). Another reason could be that fighting for or against AR offers little political capital for the political parties.

23 Monterrey, Mexico City and Guadalajara are the three places where AR takes place more frequently.

Although they are still work in progress, analysing their content is useful because it reveals the way the legal framework is moving and reshaping as a consequence of the availability and use of AR in Mexico. In general, these initiatives deal with regulating the offer and use of AR (six proposals), including AR services as part of the family planning schemes (five), controlling cloning (four) and stem cell research (two), and including the term 'embryo' in the existing health laws and regulations (one). They all agree on legislating in favour of the use of AR, particularly when the procedures resemble non-assisted reproduction, that is, when the procedures are done to give a living stable heterosexual couple a baby without the intervention of third parties (e.g gamete donors or surrogates). Discrepancies between proposals begin when any of these elements are changed; if couples are homosexual, if the user is single or widowed, if there is a third party involved, or if there is the desire to select an embryo for other than medical reasons.

These initiatives suggest the modification of three codes: the National Health Law (NHL), the Federal Civil Code (FCC), and the Federal Penal Code (FPC), being the first one where most of the changes are suggested. Within the NHL, the proposals are to add or modify aspects related to health services, family planning, mental health (all in Title 3), research (Title 5), donations and transplants (Title 14); locating AR within three distinct frames: a health frame, a social frame and a scientific frame. Each one of these frames demands different ways of dealing with the issue, and places the responsibility of dealing with them on different social actors: the physician, the researcher and the state. The modifications to the FCC aim at regulating the civil ties between the couple seeking AR and the resulting offspring. The amendments to the FPC refer to sanctions when using AR without the woman's consent.

There were mainly two reasons that motivated the political parties to present these initiatives. The first was that the use of biomedical technologies has generated legal voids that need to be dealt with. The second, was the concern over the possible and potential uses of the techno-scientific developments in the areas of genetics and reproduction. Politicians were concerned that these technologies might be used for purposes other than granting infertile couples or individuals the opportunity to procreate, for example eugenic practices which have the potential of affecting the evolutionary process of humanity, what which causes unease due to the social, ethical, juridical and biomedical implications that they carry (González-Martínez, 1999; López-Brito, 2002; Leon-Lerma, 2003). Initiatives used mainly three different types of arguments to support their motives: scientific, legal and moral. However some proposals also mention the fact that since other countries had already legislated these procedures, Mexico should do the same.

Within the initiatives, AR is defined as a group of technologies and techniques that have the purpose of helping couples who are either facing infertility or have a risk of transmitting severe genetic problems, to form a family with 'children of their own blood'. They are seen as a solution to reproductive problems, as means to achieve a desired goal, to enact reproductive freedom and fulfil reproductive rights, or even as hope, but not as a substitute to coital reproduction. They are described as a set of procedures by which the union of the gametes or/and the implantation of the embryo in the uterus is artificially achieved via direct manipulation in the laboratory. The technologies designated as AR in Mexico include artificial insemination (AI), in vitro fertilisation (IVF), embryo transfer (ET), and gamete intra-fallopian transfer (GIFT); some initiatives also mention the use of donors or surrogate mothers. With the exception of one proposal (Martínez-Álvarez, 2005), all others only consider the procedures which aid in a process that otherwise would take place in the woman's body, ignoring those related to the male's body, as could be sperm production, maturation or ejaculation, for which techniques do exist (e.g. TESA) and which, if offered, are advertised in the clinic's websites, brochures and advertisements.

Although most initiatives consider it important to obtain a certified consent letter signed by the user (i.e the woman, and if relevant, the partner) only a few specify the type of information these consent documents should contain. Only two initiatives specify that users should be informed about the possible risks, as well as the biological, juridical, ethical and economical issues that arise from using AR, particularly when dealing with older women (González-Martínez, 1999; Díaz-Salazar, 2005). The one presented by the conservative party stresses that adoption should be presented as an option to consider prior to using AR (López-Brito, 2002). Likewise, only two proposals suggest that the physician should be informed of the couple's reproductive history (i.e the existence of frozen gametes or embryos at another clinic) and reproductive future plans (i.e what they plan to do with un-transferred embryos) before starting treatments (García-Tinajero, 2004; Martínez-Álvarez, 2005).

Some proposals (six out of eighteen) state that only married or established couples should be allowed to use AR. They argue that under the Mexican legal system the development of an individual should be within a family because this is considered fundamental for the social, economical and cultural stability in and of Mexico. Furthermore, they say that Mexico has ratified certain international agreements that make bringing a child into a single parent household illegal.

The centres that offer AR and the banks that receive, keep and distribute human gametes are considered health service establishments, and so most proposals

suggest they should be monitored and regulated. Hence, in order to authorise a clinic to operate, it would have to have a qualified biomedical staff and the necessary equipment. Some initiatives state that psychological counselling must be offered before starting treatment as well as during the procedure (González-Martínez, 1999; López-Brito, 2002; García-Tinajero 2004), others suggest that this should be compulsory if entering an embryo donation programme, both the donor and as the recipient. A few initiatives mention clinics need to have an interdisciplinary ethics committee, including physicians working at the institution (but foreign to the case being treated), lawyers, bio-ethicists, psychologists, and representatives of the users (López-Brito, 2002; García-Tinajero 2004; Martínez-Álvarez, 2005; Díaz-Salazar, 2005).

There is very little consensus in the initiatives regarding what to do with embryos that are left at the clinics and banks unclaimed by their owners. There are different views on how long they should be kept, and on what should be done to them once this time is up. Some initiatives contemplate embryo donation (García-Tinajero 2004; Martínez-Álvarez, 2005; Díaz-Salazar, 2005; Esteva-Salinas, 2007) and stipulate that donors must be infertile couples with a surplus of embryos that will no longer be used by them. These donations must be altruistic, anonymous and with a written informed consent; and those interested in using donated embryos must be evaluated by the ethics committee.

Concerning surrogacy, some initiatives worry that its acceptance can lead to the abuse of poor women and therefore suggest prohibiting it (García-Tinajero 2004), others see it as an option for those who have unsuccessfully tried other AR options. In these cases, some advocate in favour of using relatives for surrogacy or gamete donation (González-Martínez, 1999), with the argument that this way they preserve the genetic/blood link, while others strongly argue against this because they claim that it can lead to more problems in the future, for example blackmail. Furthermore, some place a limit of 2 to 5 cycles as the maximum number of cycles in which the surrogate can try to get pregnant, and some state it can be done for free or with a fee payment (González-Martínez, 1999; Castro-Trenti & Saro-Boardman, 2008).

Currently, there are no laws to protect the sperm donor's anonymity or to absolve him from his duties as father (Rodríguez-Díaz, 2004.04). One proposal suggests giving limited legal paternity to the sperm donor if the resulting child is left orphan and there are no other family members of the non-biological or 'social' father or genetic mother and the child is younger than 18 or incapable of looking after his or herself. However, the child cannot bear the donor's surname nor is subject to inherit the donor's patrimony (Rodríguez-Díaz, 2004). The problem is that, in order for this to be

possible, there needs to be a disclosure of who the sperm donor is, for what a donor registration is necessary. Another issue with paternity rises with post-mortem insemination and embryo transfer. Of the eight initiatives that mention them, all accept them when the owner of the gametes or the embryo states in a legal consent form, that these are his or her wishes (González-Martínez, 1999; López-Brito, 2002; Rodríguez-Díaz, 2004; García-Tinajero 2004; Martínez-Álvarez, 2005; Esteva-Salinas, 2007; Castro-Trenti & Saro-Boardman, 2008).

Finally, all proposals prohibit reproductive cloning, however some wish to legalise cloning for research purposes on the argument that they will help fight the shortage of organ donation and promote scientific knowledge that will benefit human health.

The lack of a specific legal frame for AR has not stopped people from using or offering these procedures, but it does place them in an unprotected situation. For example, presently there are no laws protecting sperm donors because the laws on organ, tissue or cell donation are not entirely applicable to gamete donation due to the consequences of it, i.e. a new life. If given the case, with the necessary proof (i.e. the donor's registry at the sperm bank) it might be legally possible to unveil who the donor was and give him all the legal rights and responsibilities of being the biological father (Flores Preciado, 2009). Likewise, in the case of surrogacy, the birthing mother can claim rights over the newborn regardless of the genetic origin or any contract she might have signed with the contracting couple.

As these initiatives demonstrate, there are several aspects of AR that *could*, theoretically, be subject to regulation; for example, aspects related to the service, the clinic, the service provider, the procedures, research, the users and the industry. These can be regulated from a medical, civil, moral and penal perspective. However, of all these aspects, regulating those related to the procedures seems to be the most difficult because these procedures, or at least some of their elements, are still changing and therefore, if regulated with detail, they might soon be out of date. Probably, the aspects that most urgently require regulation are those related to the qualifications needed by the clinic and service provider, to supervision and recollection of information regarding the activity of these clinics (e.g. number of cycles performed, success rates, laboratory procedures), and to the civil aspects that would stipulate and regulate contracts, rights and responsibilities between parties (e.g. consent forms, embryo and gamete disposal, kinship ties). In spite of the inadequate legal frame regulating AR in Mexico, biomedical professionals in this area rely on other non-governmental bodies to guide and validate their activity. The main bodies are Red-LARA, ESHRE, ASRM, COMEGO and AMMR.

These diverse initiatives reveal a few things worth highlighting. The first is that, from a legal perspective, reproduction, even in the case of AR, is still mainly a female issue (González-Martínez, 1999; López-Brito, 2002; Martínez-Álvarez, 2005). Although in some cases the man is included as an actor in the process, his role is limited to being the one who is the cause of infertility or a provider of sperm; rarely is his the body in which AR procedures take place, nor is he considered as a possible user on his own (i.e single father). This biased perspective can be seen in many situations. For example, when classifying the different types of services and procedures that are considered AR (and thus subject to these regulations) they only mention those that take place within the female body – AI, IVF, GIFT. This is repeated when talking about risks; the authors of these proposals only mention the risks that are imminent for the woman user and the future child. Again we see this when specifying that it is the woman who has to be in good psychological health before starting treatment, while no reference is made about the male's psychological state. We see this yet again, when stating that the woman can decide to suspend the treatment, if this does not imply risk for her or the possible product, but it is never said that the man can ask for treatment suspension. Only one proposal specifies that AR can be used for male factor cases as well as for female factor cases (Díaz-Salazar, 2005), however the procedures that they consider are again all take place in the female body.

The second thing worth noting is that they aim at maintaining the traditional family composition, yet they do realise that single motherhood is a common phenomenon and therefore they do not entirely reject it. Third, AR is commonly associated with genetic manipulation and cloning, a situation that is also present in the media. Dealing with these biotechnologies as a single package can be one of the reasons why these initiatives have not reached the debating stage within the Chamber of Deputies. Although at a certain level the three are related, when it comes to regulating their use it might be better to deal with them separately since the technological, practical and moral issues that each imply can be very different and by treating them undifferentiated could lead to an undesired legislation. Fourth, the fact that all these initiatives are so different in terms of what they seek to regulate (more than how), and the many misconceptions and mistakes they present, suggests that there is a limited understanding regarding what AR is and what it implies. This could also be due to the relatively recent arrival of AR in Mexico.

In general, there is a very limited ethical discussion regarding the use of AR and the future problems this will entail, for example, for the child to be born. Within the proposals mentioned above, attention is given to the issue regarding the right the child has of being born in a family with both a mother and a father. However, no space is given to assessing whether this family has the means to provide for the

child, whether they are committed to raising it and whether the family offers a stable environment for the child. These ethical and social debates have resulted, in some countries (such as the UK), in debates about whether healthcare professionals should have an obligation towards the wellbeing of the child they are helping to create. Although currently the UK has reopened this debate due to the controversial power given to healthcare providers in terms of deciding who is and who is not eligible for AR (Ehrich et al., 2006), the fact that this issue has been given consideration indicates a broader perspective on the topic, maybe resulting from a longer trajectory with the use of AR. However, it might also suggest a different way of viewing the public-private spectrum in which Mexico considers reproduction an area of private concern. The healthcare practitioners that I interviewed or observed for this study rarely reflected on this point. Usually they were concerned with the sexual orientation of the user or if the user was single, yet not offering them the service was never contemplated. This highlights the issue that, while AR has moved private issues into the public sphere, the exact issues that are moved from one arena to the other are not the same in each culture.

Discussion

This chapter offers a historical overview of how AR emerged in Mexico, covering the period from 1970 to 2006, the year in which the fieldwork for this research began. The objective was to present the sociopolitical, biomedical, and legal elements that allowed AR to make its way through and into Mexican society. The main purpose of retelling the historical development of knowledge, institutions, regulations and service providers is to present the social world in which AR exists. I also looked at the family planning schemes of the 20th century, the proposals for regulating the AR services, the conformation and development of clinics, and the institutions that have emerged as a result of AR.

Mexico's process of nation building has taken place within a global context of wars, rights' movements (human, women, animals, disabled, etc.), and scientific and technological discoveries and inventions. The contemporary Western world has become more aware of the generalised and increasing risks we are subject to and has developed a growing consciousness of the responsibility for our actions and their present and future consequences. Likewise, the world has witnessed and participated in the rise and consolidation of consumerism, capitalism and globalisation. It has been during these events, which in turn have influenced the establishment of the political, economic, social, and health systems in Mexico, that AR services have emerged and flourished in the country.

In the last hundred years, Mexico has heard three discourses regarding reproduction: one favouring natural population growth, another promoting family planning, and a third concerning infertility and AR. As mentioned by some specialists, contraception and AR are two sides of the same coin: the coin that represents control of reproduction. Although in certain ways family planning and AR seem to express contradictory discourses, they in fact echo one another quite strongly. They both have benefited from the inclusion of the human rights discourse within health related issues. Deciding whether to have children or not is now considered a voluntary decision made by the individual, while the state is considered responsible for providing the means necessary to fulfil the individual's decision. This implies that when not wanting to have children the state must make contraceptives available, or in the contrary, when wanting to have children and faced with infertility, the state must make AR available. Likewise, both family planning and AR services have used the media and sophisticated marketing strategies to promote their agenda (quite successfully one may add). Both have also sought legitimisation of their technological methods and objectives (use of contraceptives to reduce family size, and use of AR to increase family size) by presenting the advantages they promote (smaller families live better, a couple with children is happier). In both cases there are elements that touch upon reproductive health, yet it took a long time before they acknowledged the greater health context in which they are located (i.e. STD and STI). Finally, both extensively ignored the male role within reproduction, and neither of them has been object of critical analysis.

The idea of control of reproduction echoes other contemporary discourses about health, education, politics and gender issues, in which individuals are granted control –and in turn responsibility- of these aspects in their lives. These discourses are centred on the idea that, if one becomes informed about the options and processes, then one can make informed responsible choices concerning which path and life style to take. These discourses also promote the idea that by following the socially established rules, one can achieve what one wants. When it comes to reproduction, things are definitely not so simple. In general, people are given the possibility of deciding and controlling when not to have children, but they are never expecting to lose this control when they decide to have them. Furthermore, they soon realise that following the socially established rules or following the doctor's order, getting information about their condition, choosing their doctor responsibly, none of it guarantees they will achieve pregnancy and have a healthy child. The result of this is that people facing infertility and going through AR tend to feel frustrated because what they get is not what they were offered or what was promoted. If to this already complicated scenario we add the fact that most clinics advertise high success rates, the degree of frustration these people go through is understandable.

I would like to close this chapter with a set of ideas put forth by Zegers-Hochschild: “Latin America has been efficient in transferring reproductive technology from the countries in which it was developed and at the same time developing its own capabilities to implement most of the new technologies using local professionals...the overall pregnancy rates achieved with ART in the 10,000 cycles reported in the Latin American Registry are similar to those of the European and the North American registries” (Zegers-Hochschild, 1999:25). Understanding this process of adapting not only the technologies but also the AR services to the Mexican situations is what the next chapter will cover.

Who is the Doctor?

Gynaecologist, Biologist, Andrologist & the Clinic

Introduction

In the previous chapter I offered a general view of how AR arrived and took root in Mexico focusing on the different elements that played an important part in the construction of AR in Mexico. Now, I will go into greater detail of the history of AR as a biomedical profession and service within Mexico. Drawing on information obtained through interviews with biomedical professionals, by attending biomedical conferences, as well as through biomedical journals and printed media, this chapter aims at: understanding how the number of clinics grew from two in 1986 to over 50 in 2010, describing the different kinds of clinics that were established and why they took the shape they did, identifying the new professions that emerged as consequence of AR, and looking at the way AR professionals conceptualise infertility and AR.

The (in)Fertility Clinic's Family Tree

"The founders of the reproductive services in Mexico were Dr. Gutierrez Najar, in Mexico, and Dr. Samuel Ayup in Monterrey...A few years later, Dr. Krachmer and Dr. Kably started to offer reproductive services at the National Institute of Perinatology. Dr. Krachmer was the administrator and coordinator of the program and Dr. Kably overlooked the medical part. They both trained many people." (Interview with Dr. SC)

Back in the 1980's, while the country was in the middle of the family planning campaigns, a small group of doctors started to help people who could not have children. These doctors were the first to offer high complexity AR, the first to open AR clinics and the first to train physicians in the art and science of AR. As the doctor in the quote indicates, most Mexican (in)fertility clinics emerged from these first three clinics (one public and two private), hence they all share a small number of doctors as common ancestors. These first groups of doctors would sometimes send some of their team members to clinics in the USA and the UK to learn about the use of the different apparatus, but they mostly brought specialists from abroad, mainly USA, to train their entire teams at the clinics and hospitals in Mexico. There, senior and junior doctors, residents and biologists were all learning and acquiring experience at the same time.

"In order to start the reproductive unit at the Institute, the Institute's director, Dr. Krachmer, invited specialists to train his team. These specialists were Dr. José Balmaceda and Dr. Ricardo Ash, the creators of GIFT. At that moment they were working at a fertility clinic in California... and were later implicated

in the 1995 embryo transfer scandal...In addition to them, Dr. Benjamin Sandler was also invited to participate in the training sessions.” (Interview with Dr. PDC)

As mentioned above, the three doctors that came to train Mexican doctors and biologists were Dr. Ricardo Ash¹, Dr. José Balmaceda and Dr. Benjamin Sandler. Because they were from Latin America, they could communicate with the Mexican team in Spanish, understand some of the cultural elements that shape the patient-physician relationship and, in general, were able to consider the particular ways of the Mexican healthcare system. However, having been trained and worked in the USA made it possible for them to acquire the knowledge of cutting edge technology. The unique combination of holding knowledge of Latin America and of the emerging biomedical technologies, resulted in that they became the importers and translators of knowledge, facilitating the entrance and way of AR into Mexico, making it accessible to local gynaecologists and biologists. In spite of Dr. Ash and Dr. Balmaceda’s controversial backgrounds (i.e. the 1995 embryo transfer scandal), doctors and biologists that worked with them spoke highly of the technical and clinical ways these doctors understood and practiced AR. Nevertheless, some doctors considered that their unethical behaviour affected the acceptance of GIFT², a technique which was somewhat successful and that most religious groups accepted as a viable technique.

Dr. Sandler, who directed a clinic in New York, also became an important figure within the Mexican AR context, particularly with patients. He frequently appeared in the Mexican media and in patient oriented conferences. During several interviews with AR users, they suggested that he had acquired the reputation of being very successful because, apparently he only takes cases he can successfully resolve. They claimed that since his clinic was floated on the stock market, the prices of its shares depended on its success rate, and as a result, “he only takes those [cases] he trusts will have a positive outcome and thus, he can profit from”. To this day, those who have been unsuccessful in their cycles with Mexican doctors and have the means to afford the treatment abroad, aim at going to see Dr. Sandler. His Mexican clientele reached such numbers that he has recently opened an office in Mexico City in which he offers the first part of the treatment (diagnostic tests, preparation and ovarian stimulation).

¹ In 1995, Dr. Ash and Dr. Balmaceda were accused of allegedly transferring other couple’s embryos and gametes to couples without either couple’s consent. This was later known as the 1995 embryo scandal. For more on this matter see the journalistic piece written by Kellerher and Christensen (1995) which won them The Pulitzer Prize in 1996. Due the legal problems that followed this scandal, Dr. Ash had to leave the US. He moved to Mexico City where he worked at one clinic and apparently opened another one also in Mexico City. However, no reference to this appears in the clinic’s website.

² GIFT, which stands for gamete intrafallopian transfer, is an AR technique developed by Dr. Ash and Dr. Balmaceda. It consists of extracting the gametes from both man and woman, preparing them to be optimal for fertilisation, and transferring them back into the woman’s body prior to fertilisation so that it will take place within the fallopian tube.

By the mid 1990s, a new set of doctors who had studied in Spain came back and started to share their recently acquired knowledge, influencing with this AR's path in Mexico: "two younger doctors who had studied in IVI-Spain came back with new technologies and a new outlook on reproduction. These two doctors... opened a clinic in Leon, Guanajuato ... They offered the services at a lower cost... something the heads of clinics in Mexico City and Monterrey found disturbing" (interview with Dr. SC). Soon after, many more people went to train at IVI-Spain (Instituto Valenciano de Infertilidad located in Valencia, Spain), particularly biologists. Shortly after, the influence of the Spanish clinic's *modus operandi* started to become evident. According to many biologists, the peculiarity of this clinic lies in the way they see the procedures and the place they assign to biologists: "They recognise that the biologist and the lab are central crucial to good reproductive rates. So they invested a heavily in training their biologists and improving their lab procedures...they successfully merged the American and the European AR styles" (Interview with Biologist SC). While this helped them achieve good success rates, it also presented some problems, because, as pointed out by the following biologist, when importing technology it must and does go through a process of adaptation to respond to the needs and possibilities of the new site:

"IVI Spain never recognised that Mexico and Spain are two distinct places with different cultures, requiring different bedside manners. Mexicans like being seen by the same doctor all through their procedure and their pregnancy. They don't like being a number. They wanted the Mexican clinic to work as the Spanish one, but this was not possible" (Interview with Biologist SC).

A few years after IVI-Spain opened their branch clinic in Mexico City, they established a training programme for AR specialists, placing it as another important actor in the conformation of Mexican AR. Thus, up to now, the major influences regarding AR knowledge have come from the USA, brought by Latin American doctors, Spain and three local clinics.

For almost five years (between 1985 and 1990), apparently no new clinic was opened. Eventually, those who were once junior doctors and residents grew and, as children do, they wanted to leave the nest to begin their own private practice. Doing so was not easy. As opposed to low complexity AR (e.g. ovarian stimulation, programmed coitus and artificial insemination) which, following certain protocols, can be offered in standard gynaecological offices, high complexity procedures are and have become more complicated, demanding highly specialised equipment, tailored facilities, specific knowledge and technique and multidisciplinary teamwork. It became physically and technically impossible for one doctor to do all that high complexity AR procedures require, so they had to start hiring people to help them. Hence, the standard gynaecological office with only a doctor and a nurse was no longer enough.

However, the specialised equipment, the extra staff and the cost of training them was not something everyone could afford, particularly when a doctor was starting out and did not have a clientele large enough to cover the costs.

This dilemma led doctors who could not afford their own clinic to adopt any of three options. The first was to refer their patients to clinics with the necessary equipment and hope that when the patient got pregnant, the patient would come back to her original gynaecologist. The second option was that senior doctors would sublet the equipment to their former students. With this, not only was the junior doctor able to conform his or her own clientele and keep on learning from the teacher but the senior doctor had an extra income to pay for the laboratory's maintenance. The third situation had a more business oriented perspective, and was tailored to the established gynaecologists who did not have the AR equipment or staff, yet had a small demand for it. With these variables in mind, some doctors decided to see AR as a service they could offer doctors in lieu of patients, as an outsourcing service for doctors:

“...you must have witnessed the rise in infertility cases during the last years. For this reason, we consider that for you it is important to have access to an assisted reproduction centre that will offer the facilities, advice, and professional high tech equipment to offer your patients the assisted reproduction techniques and reproductive surgery that they need... Gynaecologists are frequently unable to offer couples assisted reproductive procedures or reproductive surgery... So, when a doctor sees a patient in need of high complexity AR techniques, he usually has to refer them to a specialised centre, which usually implies losing the patient...Red Crea offers doctors the possibility to actively participate in every single stage of the diagnosis and treatment of their sterile couples, which implies growth in terms of professional, academic and economic development” (Letter to invite fellow gynaecologists to become members of this network)

“I work for other gynaecologists who do not have the infrastructure to deal with assisted reproduction...The equipment is very expensive, and some of the procedures are not that profitable. The Pap smear and AI are profitable tests, I do many of these, but IVFs and ICSIs are not. I don't have the equipment for ICSI, when needed I send them to Gutiérrez Nájara. Most of the work I do is for other doctors, although I do have some patients of my own” (Interview, Dr. PD)

As the letter excerpt indicates, by subscribing to this business model, doctors could offer their patients the necessary treatment without having to engage in the costs of having an AR service in their offices and without losing their patients. However, within the unregulated context of Mexican AR, this practice could lead to potentially problematic scenarios. What would happen with the frozen embryos of the subletting doctor's patients if the clinic goes bankrupt, or if there is conflict between the owner of the clinic and the subletting doctor? Interestingly, these scenarios have not been contemplated by the legal analysts who write about AR, or by the people drafting the regulatory initiatives.

This model of outsourcing, as well as the model of branch clinics followed by IVI, could have been the inspiration for a few groups of doctors to establish networks of clinics. These networks are comprised of one large well equipped headquarter clinic which centralises the expensive aspects of the protocols, while many smaller satellite clinics offer the less technologically demanding parts of the protocols. Doing so, the network can reach out to more corners of the country, establishing their name and AR in more social circles. Moreover, this model demands more staff than single clinics, hence new work slots are available for the forthcoming generations of AR professionals.

After years of only two private clinics and one public hospital offering AR, Mexico now has over 50 clinics all over the country, in addition to two work related healthcare schemes offering AR. Some of these clinics are independent, others are associated to hospitals or to foreign clinics, and others are members of networks of clinics or act as service providers to other doctors. The growth of the AR industry has resulted in the emergence of two new actors within the biomedical reproduction arena –the AR biologist and the andrologist– as well as in the consolidation of the AR clinic. I will first explore the characteristics of the AR clinic.

From the (in)Fertility Clinic to the AR Clinic

A 2002 newspaper article claimed that: “of the more than 40 fertility centres, only 9 are validated and monitored by RedLara.” (Ruano, 2002). One year later, in another article, a specialist in AR “assured that, in the country, there are only 12 private centres and one public institution that have the scientific and quality requisites to carry out these practices” (Cruz-Martinez, 2003). Five years later, the same journalist in the same newspaper published an interview in which the specialist stated that: “Only 25 clinics are recognised and certified by RedLara” (Cruz-Martinez, 2008). One year later, the headlines claimed that the majority of the AR clinics in the country were untrustworthy (Cruz-Martinez, 2009). As these four newspaper articles depict, not only has the number of fertility clinics increased, but also the number of clinics that are certified or accredited by RedLara. Nevertheless, in the media, doctors express their worries about the number of charlatans who claim to be specialists and offer unprofessional service in their *‘patito’* (of questionable reputation) clinics. These claims raise the question: what is needed to become an AR clinic?

As clinics began to appear, the elements that would later on constitute what an ‘AR clinic’ is began to emerge. Today, there are certain requirements a clinic should meet to be considered a trustworthy clinic by fellow doctors and by patients, specially those

who have been involved in AR for some years. In the previous chapter some of these elements were briefly mentioned, I will give a closer examination below.

“You must check if the specialist studied at a good university, if the place where he did his internship is recognised, if he is member of any of the recognised medical associations (CMGO, AMMR, FME, ESHRE). He must be good at teamwork and must respect counter reference³. He must be logical and progressive in his treatment, whole in his treatment, include the male, and charge reasonable fees. The biologist is also important, he is the one that evaluates and manipulates the gametes and embryos so he must be properly trained. The installations are also important. The laboratories have specific requirements such as special paint on the walls, double filtered air, controlled temperature, controlled lighting, and of course everything must be sterilised.” (Dr. GG at Expofertilidad, 2007)

This doctor, like many others talking at conferences and in the media, highlights the elements that make up an AR clinic. The first thing he urged the audience to do was to ask for the clinicians and the clinics’ credentials, a practice that is very uncommon in Mexican culture. These credentials and certificates can be granted by both national and international regulating bodies. Although some clinics are very meticulous and try to have as many nationally generated certificates as possible (e.g. for blood, gametes, embryo handling), in addition to the ones offered by the international community, they recognise that the few governmental bodies that overlook aspects related to AR (e.g. the Ministry of Health and COFEPRIS) lack of properly trained staff in order to conduct full checkups of the clinics. This is why some clinicians are in favour of regulating AR and having a specialised body to overlook the clinics’ activities. The other certificate doctors suggest patients should look for is the one offered by RedLara⁴. As validating documents for the doctors, the biomedical community recognises ASRM and ESHRE as the most respected professional associations and some also turn to AMMR, which is the national professional association. However, none of these organisations certify clinics. Interestingly, the media gives more attention to the international groups (ASRM, ESHRE and to a lesser extent RedLara) than to the national group (AMMR).

The doctor in the quote also mentioned that a proper AR clinic must have the necessary ‘equipment’. This means not only having the necessary elements to make up an IVF laboratory, but also, as stated by other doctors, having things like “non-lead paint on the walls and a special type of air conditioning” (Dr. NA at patient oriented conference 1). Due to the requirements of the treatments, some doctors believe these procedures should only be offered within the context of a hospital, since it is there that they have access to a series of “technical support...such as an electric power plant, intensive care unit, and all the measures of security and health protection for

³ Once the patient is pregnant he should refer her back to her original gynecologist

⁴ RedLara’s certificate does not have any official validity.

patients” (a doctor in an interview with Cruz-Martinez, 2003). It is equally important that the clinic has all the “cutting edge technology to serve patients, and it includes the genetic and hormone labs, refrigerators, electronic cell counters, and one room adapted for obtaining the sperm sample”, said a doctor in an interview (Valenzuela, 2004).

“The clinic has a team of 200 professionals, among them there are marketing people, gynaecologists, obstetricians, specialists in genetics, biology, andrology, psychology, surgery, and anaesthetists. They all have a role and we all work as a team” (Dr. NA at patient oriented conference 2)

As indicated by the doctor’s quote, in addition to gynaecologists, biologists and a few andrologists, AR clinics are staffed with professionals of other disciplines that are not always mentioned in the clinic’s websites. These other disciplines are usually nurses, anaesthetists, nutritionist, psychologists and even lawyers. Each of these have built a niche within the AR clinic that has yet to be fully recognised. Nurses, for example, have taken charge of teaching patients how to inject themselves and how to apply the gels. They tend to be the ones who listen to most of the patient’s questions and complaints, and who end up knowing more of the broader picture of the patient’s life. Psychologists evaluate patients and donors to see their eligibility to participate in specific AR protocols, and guide and accompany patients throughout their cycle. However, many patients complain when being sent to the psychologist because they feel they do not need therapy. In fact, upon closer observation, it is the nurse who could be offering some of the help that is currently assigned to the psychologist. Lawyers are hired by large and active clinics to elaborate the contracts for cases of surrogacy, gamete or embryo donation, and for gamete or embryo cryopreservation. In all these fields, the option of becoming an AR and infertility specialist is slowly becoming possible, and in the future maybe even essential.

Clinics, as opposed to medical consultation offices, have names. The appellatives used mostly frequently when naming clinics are ‘reproduction’, ‘fertility’, ‘infertility’, and ‘sterility’; other clinics compose their name from words such as ‘mother’, ‘conception’, ‘life’ or ‘genesis’. By naming the clinics the biomedical community is contributing to define the field of AR, for example, by stressing the female role when using the term mother in the name (e.g. Inmater), by granting a priority place to conception (e.g. Concibe), or by coupling reproduction with genetics (e.g. Genética y Reproducción or INGENES). Furthermore, by giving clinics a name, a process of individuation is facilitated, and the clinic becomes independent from the physician; they are separated and they can exist without each other. In fact, in more than one case there have been doctors who leave the clinics they use to direct, but these continue to exist with other physicians at place, and the former directors establish new ones. On the other hand, it is common for patients to speak of clinics and

doctors indistinctly. A patient can say she goes to Clinic X for treatment, without specifying who her doctor is (because probably she sees many), while another can respond saying she goes to see Dr. X, without acknowledging he is part of a particular clinic. One of the 'founding fathers' commented on this point saying that "due to the structure the new clinics are taking, the patient is no longer 'the doctor's patient', they are becoming 'the clinic's patients'". Doctors have found an advantage in this, in that since the protocols demand constant supervision and commonly require procedures to be conducted during weekends, doctors can establish weekend rosters. Patients, as I will explore in more detail in the next chapter, disliked this impersonal treatment and they reported feeling there was no doctor in charge of their case. However, the particularities of the protocols might require this type of teamwork.

I have mentioned five elements that have structured the Mexican AR industry: the clinics that acted as forefathers, the influences they have received throughout their forming years, the type of clinics that have been established, the individuation process that has taken place between clinics and doctors, and the emerging professionals. I will now focus on one of these emerging professionals, one who has turned out to be a crucial actor in the conformation of the AR clinic yet has remained somewhat obscure to the user: the AR biologist.

The AR Biologist: The Obscure Member

Staff at most AR laboratories were biologists or chemists trained in AR either by fellow biologists at Mexican fertility clinics, or at the different IVI centres in Spain. Their particular knowhow, their style and experience, was what made one biologist better than the other, and in turn, what made one clinic better than the other. Hence, biologists were very jealous of their techniques, they felt they could not "share information with fellow biologists because if they do, they feel they are jeopardising the success and status of the clinic they are working for. So, usually they only give half-information or tampered information" (interview with Biologist G).

The doctors, patients and biologists themselves, referred to them as biologists, embryologists or laboratory staff. When mentioned in the clinics' websites, (which is not always the case) they were frequently placed at the bottom of the team's list, between nutritionists or psychologists and the nurses (who were always at the end and even less frequently mentioned). This suggests the place they occupy in the clinics directors' view. Although gynaecologists speak of them as 'our biologists' they show little interest in what they do and think. This was evident for example, at the annual AMMR meeting. Few physicians, if any, attended the courses and talks on

topics related to what happens inside the laboratory. One gynaecologist commented on this point at the beginning of his talk, he said:

“Sometimes one sees the talks on biology and we avoid them, we go to other subjects like induction to ovulation and other things, but I believe it is important to start paying attention to these topics a bit, we all benefit from them” (Dr. AGM, at AMMR Annual Conference, 2007).

Biologists were usually kept inside the laboratory, out of sight of patients and they commonly reported feeling they were seen as “simply employees” (Interview with Biologist G). They complained that people (i.e. patients and gynaecologists) did not realise that everybody’s work was “important to achieve pregnancy” (Interview with Biologist G). Although it was the biologist who prepared the gametes, injected the ova with the sperm, and safeguarded the embryo’s development, they felt they were “not taken into account” nor invited to participate in the decisions regarding ovarian stimulation, even when they frequently commented, between them and to the nurses, the differences in the ova quality they found depending on the stimulation protocol. Nevertheless, when things did not turn out as expected, doctors, frequently blamed the laboratory: “if the treatment is successful, then the praise goes to the doctor, but if there are problems then they turn to the laboratory, the biologist, to place the responsibility of the failure.” (Interview with Biologist SB). However, blaming the laboratory was not something only doctors did. When patients came from other clinics and brought with them their frozen gametes or embryos, and the cycle failed, biologists would commonly blame the former clinic’s methods for freezing, in other words, they were blaming the laboratory. So, although biologists were extremely important for the success of a cycle, and therefore of the clinic, they were usually treated as second or third level staff within the clinics. The few places in which this was different (i.e. the clinics with Spanish influence) were pointed out for such behaviour and commented upon between biologists.

The crux of AR clinics is that they offer a solution to infertility/sterility. Therefore, before moving on any further, I will discuss what infertility and sterility are within the Mexican context.

“Infertility, a growing menace”

“Dr. Godoy explained that one can talk about infertility when a couple has had unprotected sexual relations for a year and can not conceive a child” (Cruz-Martínez, 2009).

“The main problems with achieving conception are known as infertility or sterility. One speaks of infertility or sterility when a couple, without using protection, has unsuccessfully tried to conceive for more than a year” (Clinic’s, Website)

“Any situation that alters the union of the germinal cells or that affects the zygote's life will cause sterility problems” (Dr. At the event held in 2001.10.10 organised by the Chamber of Deputies)

Examining all the different definitions currently offered by the biomedical community, it becomes evident that while there is a generally agreed idea of what the terms infertility/sterility stand for, there is still no standard regarding which term to use: whether infertility or sterility. Some use them as synonyms, others state that they are two distinct situations. Whichever the case, infertility/sterility refers to a type of incapability, an incapacity, an impossibility to achieve conception, pregnancy, or to take pregnancy to term. Furthermore, most definitions indicate two intertwined aspects: a spatial location and a temporal frame. Spatially, infertility/sterility is said to be a problem located in a body, usually the woman's body but sometimes also in the male's body, or in between bodies, being these the couple's bodies, the gametes or the zygote and the uterus. Time wise, it has to take place within a particular period in the individual's lifespan (reproductive age) and for a particular length of time (between 6 to 12 months). Usually, infertility's main symptom is not achieving 'spontaneous'⁵ pregnancy within the expected time frame. Upon closer medical examination, in some situations there are signs of hormonal imbalance, scars in fallopian tubes, varicocele, or other functional or anatomical abnormalities that obstruct ovulation, sperm production, insemination, fertilisation or implantation. However, it is never clear if the biomedical community sees infertility as a disease, an illness or a condition.

Diseases were usually understood as “biological or psychophysiological dysfunctions or maladaptations” (Kleinman et al, 1978 in Jutel, 2009) that can be medically diagnosed; yet, as Blaxter (1978) has noted, there has been a shift in the medically accepted model of disease, from understanding it as a state different from health, to an “unacceptable or dysfunctional degree of variation from a statistical norm” (Blaxter, 1978:10). An illness, on the other hand, is a “personal experience of sickness, shaped by culture and influential for health outcomes...they result from undesirable changes in social or personal function. How an individual perceives these problems, explains or labels them and seeks remedy, originates from cultural context, and in turn influences the response to, or decisions to access, medical services” (Jutel, 2009:287). In this sense, infertility represents an undesirable difference in personal function which is perceived by the individual as a problem and, increasingly so, seeks remedy within the biomedical realm due to the availability and promotion of health services which will aid the person to overcome the situation. Infertility also represents an unacceptable variation from the statistical norm in that the prevailing norm is that

⁵ This is how non-assisted pregnancy is called in the biomedical circle.

people can procreate. However, if we consider that diseases are illnesses for which a diagnosis can be made (Jutel, 2009), the issue becomes slightly more complex.

A diagnosis has the double quality of being a label (Blaxter, 1978) to designate a “pre-existing set of categories agreed upon by the medical profession to designate a specific condition it considers pathological” (Jutel, 2009:278), and it is also the process by which this label or category is reached to and assigned. Therefore, a diagnosis works as an noun/adjective and as a verb. When acting as a label, noun or adjective, it helps medicine guide its care by organising illness taking three of its aspects into account: it offers an explanatory framework, it identifies possible treating options and it predicts an array of possible outcomes. In other words, by assigning a diagnosis, the illness becomes a disease. As such, the person suffering it can now access service to treat it, is assigned the status of patient, is entitled to feel ill and is no longer blamed for the deviant status (Jutel, 2009).

In this sense, ‘infertility/sterility’ is a category, a diagnosis. The label of infertility does administer the incapacity to procreate by legitimising the use of AR and placing the person in the category of patient, it does offer treating options (i.e. AR) which open up an array of possible outcomes, however, only sometimes does it offer an aetiology. The term infertility, by itself, does not shed light on the reasons for this incapacity. In this sense, the term has a descriptive more than a defining role. It describes a situation in which a person has not become a parent following frequent unprotected sexual encounters in the time statistically expected for their age and condition, yet it is not indicative of why this happens. It indicates an abnormality in outcome (no pregnancy) but not always an abnormality in function (ovulation, sperm production, fertilisation).

Due to the vagueness of the term, adjacent terms have been placed, for example ‘primary infertility’ and ‘secondary infertility’. ‘Primary infertility’ describes a situation in which pregnancy has never been achieved, while ‘secondary infertility’ is used when pregnancy has been achieved in the past, regardless of the way it was achieved or what was its outcome. It would seem as if the past pregnancy achieved without AR, known within the biomedical community as ‘spontaneous’ pregnancy, and an ‘assisted’ pregnancy, were the same thing in terms of stating the secondariness of the infertility. Furthermore, analysing the cycle charts where doctors keep track of the patient’s cycle in its development in terms of the drug dosages, the size and number of ova, the girth of the endometrium, and the hormonal levels, the way the biomedical community observes, evaluates, identifies, and decides on the protocol to follow becomes more evident. In these charts, it was uncommon to find specific detailed descriptions of the causes for infertility. Regarding their past reproductive history,

usually only the degree of infertility –primary or secondary– and the number of previous AR cycles the person had been subject to at that clinic were stated in the records (previous treatments at other clinics were frequently ignored), and in cases of secondary infertility, no attention was given to the way the previous pregnancies were achieved.

Moreover, most AR specialists refer to infertility as a situation that requires ‘evaluation’, instead of diagnosis: “with a correct and proper evaluation of the patient, one will be able to select the appropriate type of treatment” (Dr. PP at AMMR Annual Conference, 2007). It seems like ‘evaluating the patient’ is describing the situation (e.g. stating if there is low sperm count, obstructed tubes or endometriosis) but not indicating the reason why the situation is given. Although identifying the characteristics of the situation might be enough to achieve the desired goal – pregnancy– it might not be enough to understand the future consequences of achieving the goal –from live birth to what will happen with this child in the future. The importance of diagnosis is knowing *why* a particular person or couple has a particular difficulty in achieving conception, maintaining pregnancy, and/or giving birth to a healthy child. Most AR procedures are aimed at bypassing the problem of fertilisation, conception, implantation but not at diagnosing why this problem exists, nor at avoiding its transmission. For this, one must use preimplantation genetic diagnosis or screening (PGD or PGS), which are still not standard procedure in Mexican clinics. Only a few physicians mentioned the importance of diagnosing the cause of infertility over only bypassing it: “in cases of azoospermia we can use ICSI and achieve fertilisation and even pregnancy, but we might be transmitting the micro deletion of the Y chromosome to the future child” (Dr. RGC at AMMR Annual Conference, 2007). However, very few patients receive information about it and seldom do they think about what might happen to their child in the future, and when they do, it is common that they will trust that in the future, “science will find a way to overcome that too” (Female Patient).

Infertility, as a category, has been included within the International Statistical Classification of Diseases (ICD), the list of generally accepted medical categories or diseases. It is included in two sections, the one dedicated to endocrine, nutritional and metabolic diseases and the one dedicated to diseases of the genitourinary system. In this last one, also male infertility is considered (only azoospermia and oligospermia, not teratospermia nor asthenozoospermia⁶).

⁶ Azoospermia refers to non-measurable levels of sperm in semen, oligospermia refers to low sperm counts in semen, teratozoospermia refers to sperm with abnormal morphology and asthenozoospermia refers to reduced sperm motility.

The vagueness in the way the term infertility is defined and dealt with among the biomedical community can be due to the novelty of viewing infertility within the context of AR; it could be because, in general, understanding the reason why a person is infertile is not always considered necessary in order for an AR procedure to be successful; or it could be because it is not considered a disease in that it is not believed to cause any further harm if not dealt with, and the only thing one need to do is overcome it so the couple can obtain what they desire. In any case, the biomedical community does claim that infertility is on the rise and that it does constitute an issue of public health. When doctors define infertility, after describing the spatial and temporal location of the lack of conception or pregnancy, they commonly talk about the frequency with which this happens and about the causes for its increase.

Infertility & AR in Numbers: The Problem of Statistics

Talking about statistics of incidence...

Dr: "the statistics say 15% worldwide, but lately *this number seems to have increased*. Some report up to 18%, and this is due to *the age factor*...It will be very difficult to find Mexican statistics because, like other countries in Latin America, there is no tradition in keeping statistics regarding diseases and processes. We always use statistics, but *our references are European or American*, where they do keep track of numbers....One of the representatives at the Senate said that there were approximately 240,000,000 couples with fertility problems, he said so last year, right?"

S: "and where did he get this data from?"

Dr: "where did he get them from? I think he calculated it from the population numbers from INEGI...the number of women in fertile age, between 18 and 35, the percentage of married women, and from these numbers he calculated a 15% and, this is how you get that statistic"

S: "Would it be useful to have statistics?"

Dr: "...statistics are always important. They are always, always important. But, as I say, we always go by the statistics of other countries that are similar to ours." (emphasis added)

In this conversation excerpt, three important elements can be extracted: the dearth of locally generated statistics regarding the cause and incidence of infertility, the increase in its incidence, and "the age factor" as a main cause for this increase.

According to the doctor in the excerpt (supported by many others in the field) there are no locally generated statistics indicating incidence rates or causes for infertility. Likewise, there is limited information regarding the use of AR and the success rates of Mexican clinics. This might be due to the lack of a nationwide epidemiological study looking at these issues (Vite Vargas, et al. 2005), since few researchers have voluntarily gathered and reported their limited data. The few who have published their data focus on infertility incidence (e.g. Ramírez et al. N.A; Ruiz-Velasco et al., 1996; Vite Vargas et al. 2005; Salgado Jacobo et al., 2003; Preciado Ruiz, et al. 2005; Hernández Ayup et al. 2006; Carreño-Meléndez & Sánchez-Bravo, 2007), a few on causes for infertility (e.g. Guerra-Infante et al, 2003; Romero Tovar, 2009), and most

focus on the outcome of their AR programs (e.g. Hernández Valencia et al., 2007; Barroso et al. 2001; Ruiz Anguas et al. 2005; Kably Ambe et al, 2004; Kably Ambe et al, 2003; Kably Ambe et al, 2002; Kably et al., 2001; Kably Ambe et al.,1999). Furthermore, there has been no meta-analysis that gathers all the scattered information generated by these single-centre studies into a comprehensive and unified whole. Therefore, the conclusions one can draw from these studies is limited. This could be the reason why, in most cases, biomedical specialists and journalists quote either the incidence rate stated by the World Health Organisation, or the ones stated by countries such as Spain or the USA. According to the doctor in the interview, doctors “go by the statistics of other countries that are similar to ours”. This would mean that Spain and the USA are similar to Mexico, yet how can one know if they are similar in terms of infertility rates and causes, if there are no comparative studies to prove this? It would seem as if, although no epidemiological studies have been conducted in Mexico, and doctors are aware that the general statistics they quote are imported from other contexts, nobody has contested these ‘facts’ (they seem to have been ‘black-boxed’); in general, the biomedical community appears to be quite comfortable quoting foreign data.

Dr. ASRP: “In Mexico everyone mentions that, at both national and worldwide levels, between 10 and 15 % of the population has infertility problems.”

S: “There are statistics”

Dr. ASRP: “*Yes, this is well studied.* Simply, due to the fact that the monthly fertility rate shows that between 85 and 95% of the couples reach pregnancy in one year, which is verified, then the remaining 10-15% present infertility.” (emphasis added)

But the ultimate question would be: why is this information important? Why do people (i.e. doctors, patients, the public) need to know infertility’s incidence rate, its causes, or the success rate of AR services? Is it to find possible ways of avoiding infertility? Is it to legitimise the use of AR? Is it to help those who face infertility feel ‘less alone in the world’? Or is it so service providers can promote their services? Probably, all the reasons above are true to a certain degree, depending on the actor who is offering the information, the actor who asks for it, and the medium in which it is presented. One article published in a local peer-reviewed journal on gynaecology is an interesting example. The content and timing of its publication suggest that the information was used as a means to legitimise their AR service (Ochoa Rueda, et al. 2004). The authors begin the article underlining that they consider it important to report the results of this public AR service, which had not been done before, so they published the first report. Then, the article ends stating that the results of their AR service were “compatible with those reported by other centres. This suggests that proper and adequate perinatal and obstetric attention is being given to the patients” (Ochoa Rueda, et al. 2004:627). There are certain elements that suggest this article might have had the purpose of legitimising this AR service. First of all, the

clinic in question was part of a public hospital, hence the service there offered was partially covered out of tax money. Second, a year previous to the publication of this article, the press presented a controversy regarding the quality and legality of the AR service offered at ISSSTE, a work related healthcare institution (see Cruz, 2003a, 2003b; Rodriguez, 2003). Third, the year the paper was published, the Chamber of Deputies held the second forum regarding AR, and three initiatives to regulate AR were presented in the Chamber of Deputies, Health Committee; all these events were covered by the national press. In addition to this, INMEGEN (National Institute of Genomic Medicine) was inaugurated and June was called the World Month of Infertility; both events also covered by the media. So, around the period when this article was published another AR service in a public institution was being scrutinised, there were debates regarding regulating the use of AR and the institutions that offer these services, and the creation of the National Institute of Genomic Medicine was being celebrated. As mentioned earlier, genetics, cloning and AR were frequently associated in various discourses, many of which had the purpose of discrediting the use of any type of biotechnology. All these incidents might have led the authors to feel they needed to justify the existence of the AR service at public hospitals by publishing their results, which, as stated above, they claimed were as successful as those in other centres.

Other articles in the press might have the purpose of promoting the services of particular clinics. In these articles, infertility is commonly presented as a condition with high incidence that is in fact increasing. Frequency and increase of incidence are arguments that serve to justify infertility as a public health issue and thus the allocation of resources to deal with it:

“The quantity of sperm produced by an adult man has gone down 50% from the previous generation, said Dr. Barroso” (Notimex, 2002).

“Infertility is a public health problem that affects around 20% of Mexican couples” (Cruz-Martínez, 2003)

“Infertility is a public health problem affecting three million couples” (Notimex, 2006).

Even when the rise in the use of AR could be due to either the increase in number of people facing infertility or the increase in awareness about the topic, the fact is that the result of messages stressing the point that there are more people facing infertility and using AR, constantly repeating ‘you are not alone’, ‘it happens in both the developed and the underdeveloped countries’, produces a normalising effect. Infertility becomes slightly more normal than it was, and using AR to overcome it becomes a more common option.

As I will present in more detail in further sections, infertility and AR have slowly moved from being taboo, rarely mentioned casually in conversation, to being an element in plot lines within drama series and *telenovelas* or as topics in radio and television talk shows. In all these settings, as well as in consultation and other places where the biomedical actors speak, the most common explanations to why infertility has risen is what many doctors call: ‘the age factor’.

“The Age Factor”: The Major Cause for Infertility

S: “What causes infertility?”

Dr. ASRP: “Many reasons, but the real question is why has it become more frequent. One of the problems is that people like you, how old are you? Do you have any children? In the past, people who were 20 already had children and now they are 33 and they are studying masters, PhDs, postdocs, and do not want to have children. They want to have children when they are 35 and their fertility has gone down. Age is a very important factor...Age makes you have many sexual partners, infections, endometriosis, your tubes get obstructed. The age factor contributed to all these things. I am telling you! Age! It also contributes to endocrine factors: lack of ovulation, endometriosis...” (Interview with Dr. DASRP)

“The peak of fertility is at 24, by 35 it is very low because ova grow old, thus the decrease in fertility – it is the natural way of avoiding genetic problems. Men have a different story because they produce sperm every 24 hrs.” (Arizmendi, 2005)

Although in the media and in the different events where biomedical AR experts speak, many causes for infertility were referred to, like biological issues, environmental issues, lifestyle choices and even psychological issues, the one most frequently mentioned was women postponing pregnancy. The general argument went as follows: due to socioeconomic and cultural changes in modern urban society, women have changed their life course, they now strive for professional development and economic and emotional stability before even starting to think about pregnancy. Hence, they postpone pregnancy well after prime age for reproduction, letting their peak reproductive age pass them by. Doctors said there are many problems with delaying pregnancy. First, as indicated in the second quote, the reproductive organs and ‘ova grow old’ (i.e. their corporal reproductive object); second, delaying pregnancy was associated with women having more sexual partners, thus being more exposed to sexuality transmitted diseases and infections, as well as longer exposure to contraceptives. However, let us analyse this argument in more detail.

The first thing to underline in these quotes is that ‘the age factor’ appears to be attributed only to women. The ‘the age factor’ discourse presents women as the only ones that go through the process of ageing, the only ones responsible for postponing pregnancy, the only ones subject to sexually transmitted diseases that lead to infertility. In other words, ‘the age factor’ discourse reinforces the long standing idea that (in) fertility is a female issue. Equally interesting is to note that it seems like

education is to blame for postponing pregnancy. Women are seeking an education instead of seeking a child.

It is also worth highlighting the direct relationship established between postponing pregnancy and multiple sexual partners and the use of contraceptives. Although in most cases the authors and 'experts' argue that pregnancy has been postponed because women are seeking professional development and economic stability prior to getting pregnant, they also state that by postponing pregnancy they will have more sexual partners. With this argument, it seems like there is an assumption that if a woman has not sought pregnancy it is because she has not found a stable partner and therefore has several sexual partners. Furthermore, the emphasis is on the multiple sexual partners and not on the sexually transmitted diseases and infections due to unprotected sexual intercourse. Finally, the postponing of pregnancy is presented as a unilateral decision on behalf of the women without considering that the man may also strive for economic stability before seeking offspring, as was indicated by many of those who I interviewed.

This age barrier is set between 30 and 35. This supports Asakura's observation: "There is a particular issue with age. There seems to be certain ages in which women are obliged to take decisions regarding having children or not. The first is around 30, when the social pressure becomes strong. The second around 35, when the first pregnancy is considered high risk, and the last is at 40, when pregnancy entails a serious health risk for both the future child and the mother" (Asakura 2005:70; see also Arranz Lara, et al., 2001).

In summary, infertility due to 'the age factor' is understood in Mexico as a female issue caused by women's pursuit of personal interests related to education, work and pleasure, resulting in the decay of the female reproductive body. Within this argument, women are seen, studied and presented as corporeal reproductive objects, as bodies affected by time and a particular type of use that have led it to infertility. They are presented as having used their body in a sexual and non-reproductive manner that has left scars in their uteruses and fallopian tubes due to the prolonged use of IUDs and the exposure to STD. Yet, a few decades earlier this same corporeal reproductive object was urged to halt reproduction, to control reproduction, to wait until she had the means to look after her offspring. Furthermore, women are increasingly urged to develop professionally. However, this social aspect of their role is seen as the cause of their decreased infertility.

Nonetheless, considering the age of women who are attending AR services and taking into account the time they have been trying to conceive, the picture is not so

clear. As I will describe in more detail in the next chapter, many women at the clinics might have been over 35, but they commonly had been trying to get pregnant for over 5 years. Moreover, not all AR users have the same fertility history and in 'the age factor' discourse there is no attempt to differentiate between primary and secondary infertility. The psychologist from one clinic, for example, stated that most of the people that attended her clinic were between "30 and 35, older couples are seen less frequently, and when the case, it is because they are either in their second marriage, or want to conceive again after the loss of a child...in both cases it is common to find infertility cases due to tubal obstruction given to tubal ligation" (Interview with Psychologist)

While the predominant stated cause for infertility is 'the age factor', a new factor is emerging: the male factor.

"The Male Factor": The New Cause for Infertility

In the context of reproduction, both men and women are split in two parts: a corporeal reproductive object composed of organs, tissue, functions and gametes, and a social reproductive subject with certain established roles. The male corporeal reproductive object is mainly the sperm, although in a few cases the reproductive organs are included, and the female corporeal reproductive object, as a consequence of AR, has been separated into various bits and pieces such as ovaries, follicles, uterus, endometrium and hormones. During diagnosis and AR, each one of these elements is separately analysed, observed, tested and manipulated by different disciplines. Women are examined by gynaecologists, however, it has not been decided yet who should study men; some say the urologist others say the andrologist. The emergence of andrology might favour the recognition of 'the male factor'.

"Contrary to what is thought, it is not the woman...who is mainly responsible for not achieving pregnancy...the origin of the problem falls equally on female causes and on male causes" (Gómez Mena, 2004)

"The myth that held males as innocent in cases of infertility is disappearing, unfortunately not all want to recognise it" (Bustos, *Tu Fertilidad*, 2008:34)

"New evidence states that men's age is also important when conceiving healthy children" (Editor, 2008:2)

"...we had a good number of ova and they fertilised and all... it was not your fault... there is also a male factor" (DR to patient after she received her negative pregnancy test)

As depicted in these quotes, the discourse regarding the roles in reproduction seems to be slightly shifting. The balance is slowly tilting towards a more egalitarian representation of reproductive roles, at least in the biological aspect of infertility. The

balance is still in movement and there are areas where it is visible. For example, when AR specialists talk about causes, the great majority state that infertility is due to male factors in 30 to 40% of the cases, to female factors in 30 to 40% of the cases, to mixed causes in 15 to 33% of the cases, and that there are some cases where the causes for infertility are unknown (5% to 20%). Stated like this, it seems that male and female biomedical roles in reproduction are somewhat equal; yet, this equal percentage of infertility's aetiology is mostly present in the voice of biomedical experts. However, when it comes to detailing the reasons for infertility, when treatments are being explained, and considering who receives attention at the consultation and who the targets of the clinics' marketing campaigns are, it becomes evident that the issue is still considered primarily a female issue. The factors that receive most attention as well as most of the treatments available, are clearly those which concern women: the prolonged use of contraceptives, the exposure to sexually transmitted diseases, and above all, postponing pregnancy. Furthermore, in other examples like those showed in drama programmes, the possibility of male factor infertility is not touched upon yet; in these cases the woman is still presented as the one responsible for reproducing, and if she fails at this task, she is viewed as a failing woman all together (e.g. La Rosa de Guadalupe, 2007). However, a few constant references to male factor infertility are present in many settings dealing with AR (e.g. the press, the patient-oriented conferences, the radio, and the emergence of andrology). As we can see, the 'male factor' has started to be acknowledged within the biomedical field and in the press, yet it has not reached popular culture (i.e. drama series). Although these references are still light whispers, as long as they do not silence, they may someday become an audible voice.

In addition to the previous, most commonly stated causes for infertility, in some cases, the media and some nonbiomedical AR specialists talked about other causes as well. For example, the rise in divorces and remarriages leads to more people with permanent sterilisation who wish to conceive with their new partner. Bad eating habits combined with lower food quality lead to more obesity, what result in metabolic problems. Plus, environmental factors such as pollution, use of alcohol, tobacco, marihuana and cocaine, and the use of saunas or tight clothes have affected the production of good quality gametes in males. Hence, both biomedical and socio-cultural aetiologies for infertility are presented in the media.

Stressing 'the age factor' as the main cause for infertility locates the problem of infertility more within the realm of a social issue -because delaying pregnancy responds to social factors- than within the health realm, since being 'old' is not a disease or illness. The danger with this statement is that if the reason for female infertility is actually related to tubal obstruction and ovulation problems (Vite Vargas et

al., 2005), then finding out why fallopian tubes are obstructed and why there are alterations in the ovulation cycle could be important. There are several reasons for tubal obstruction, for example, scars due to surgery and scars due to sexually transmitted diseases or infections (STD/I); likewise, there are many reasons for ovarian problems, for example, diabetes or polycystic ovary syndrome. In these cases, infertility is pointing at a larger health issue that should be addressed by means other than AR, ways that would in fact consider a wider spectrum of society since these issues (STD/I, diabetes and polycystic ovary syndrome) could be affecting a much larger population than those simply seeking pregnancy. For example, cases of infertility related to STD/I should be raising awareness about the fact that more sexual education is needed. Cases of infertility due to issues related to diabetes or polycystic ovary syndrome should be raising awareness about the growing problem metabolic disorders and obesity have become, this last one in fact a major health issue in Mexico. In other words, there should be a closer examination regarding the causes of infertility since this could be a red light for other health issues that could be affecting a wider spectrum of the population.

As mentioned above, the emergence of ‘the male factor’ as a cause for infertility has resulted in the emergence of andrology as a field of biomedical study. However, it is still fighting for recognition within the community of biomedical professionals. The process of emergence and its fight for consolidation is quite evident within the arena of AR in Mexico, hence I will explore it in greater detail in the following section.

The Andrologist: The Emerging Doctor

“I see male factor infertility because I am an andrologist...they refer to me the cases when gynaecologists only want to see women...when they have done everything to the woman...and they realise that it is a male factor infertility, then they say ‘Go see a urologist’ because they don’t even know that andrologists exist” (Interview, Dr. ASRP)

Medically speaking, AR is an area mostly occupied by gynaecologists. Very few endocrinologists and urologists are interested in AR: they are a minority. Recently, however, more attention has been given to the role of men in cases of infertility, possibly as a consequence of the development of ICSI in 1992. For example, there are constant reminders in the media as well as in the patient oriented conferences, that in 40% of the cases, infertility is caused due to male factors. Clinics frequently claim they study the couple as a whole, and some even say they first check the man, since it is easier and often, where the problem is located. This shift required medical professionals to look at men as reproductive beings, leading to the appearance of

andrology as an area of biomedical enquiry⁷. While in other places andrology has now become an established biomedical speciality (with peer-reviewed journals and professional associations⁸), in Mexico andrology is still in an emerging stage. Within the curriculum of Medicine, it is not yet considered a speciality or even a subspecialty. However, it appears as a subject within two subspecialties: urology and biology of human reproduction, which is offered only to gynaecologists and endocrinologists (UNAM, 2009a; UNAM, 2009b). In the case of urology, andrology is part of the second year subjects, and it touches on aspects related to male contraception, the male climacteric syndrome and infertility. All the topics related to AR are contained in the section called assisted reproduction, in which mostly male related aspects of AR are dealt with (e.g. obtaining, handling and preparing sperm samples, artificial insemination, and ICSI) (UNAM, 2009b). The way the subjects are laid out in this speciality fragments the entire understanding of male reproduction; not only does it place AR and contraception as two distinct subjects but it also separates AR from infertility. In the case of biology of human reproduction, andrology is not even a topic within courses, the term only appears in the titles of journals recommended within the basic literature (e.g. *International Journal of Andrology*, *Journal of Andrology* and *Archives of Andrology*) (UNAM, 2009a). Within the realm of professional practice, however, the term appears more frequently. For example, during the 2007 annual meeting of the AMMR, in some presentations the term was used when referring to who is in charge of studying the male in cases of infertility, and there was a full thread called 'La tendencia de la andrología actual' (Tendencies in contemporary andrology) (AMMR Annual Conference, 2007). Regarding the clinical service of AR, some infertility centres specify when a member of staff is an andrologist. Sometimes it might be that it is a biologist who is in charge of dealing with the sperm samples, while others mention that they have an 'Andrology Department'. Some of the few existing andrologists in Mexico were trained in Spain (specifically at IVI).

This heterogeneous perspective on andrology is also present in the opinions of AR specialists. While some gynaecologists think it should stay within the realms of urology, since it deals with male genitalia and has nothing to do with the female body, which is what gynaecology studies, others, like the one in the following quote, underline that andrology needs to become more than just a topic within the curricula of urology, maybe even independent from urology all together. However, up to now, the members of the curricula development department of the Faculty Medicine at the Universidad Nacional Autonoma de Mexico (UNAM) still do not see it as a speciality or even a subspecialty.

⁷ Although there are indications that the term andrology was used in 1887 to refer to the medical discipline which looks at the male as a reproductive being, much like gynaecology sees women (Schirren, 2005), it had not been given much attention to until AR, mainly ICSI, were developed.

⁸ For example: the German journal *Andrologia* was founded in 1969, the American Society of Andrology was founded in 1975, and in 2001 the Italian journal *Medicina nei Secoli* dedicated two entire issues to Andrology.

“The problem is that the urologist studies the genitalia as a urinary apparatus and not as a reproductive apparatus...Urologists are now being taught some andrology and they do their rotations at the andrology service, but [urologists] see a varicocele or a tumour and they only think of a biopsy, but this does not solve the problem...This is when one thinks, let's do the biopsy, and we freeze the sample and later on use it for ICSI. But the urologist has many deficiencies in the field. What should be done is to make it a subspecialty in any speciality: urology, gynaecology, endocrinology, internist, biologist...or simply let it be a speciality in itself, an andrologist” (Dr. ASRP)

Those who plead that it should stay within the realms of urology might be looking only at the shared anatomical parts while ignoring the different processes and functions each focuses on (one on the urinary and the other the reproductive). Could this unsettled negotiation be, partly, due to its undefined state? Yet, it is not only the lack of a clear definition that andrology has to face, it also has to fight for a place within the biomedical field of infertility and AR against those specialties that are well established and fighting their own battles. Just as non-AR gynaecologists fear losing the patient to the AR specialist, the AR specialist also fears losing patients to the andrologist, particularly if he or she is also trained in gynaecology and AR:

“There are many doctors that do not want to understand that, if they do not know how to handle the male problem, they must refer it to someone who does... maybe because they fear they will lose the patient...I am both gynaecologist and andrologist, so they fear that if they send me their patient, the patient will realise I can see both, plus I also attend fertility issues. Here in [this city] I am the only andrologist. I think that in Mexico there is still no speciality in Andrology, there is a subspecialty, which is what we all have studied. In Mexico City, there must be no more than 10, for a city of over 20 million there are only 10! And in the entire country we must be a total of 40” (Interview with Dr. ASRP)

The current state of affairs regarding andrology places it as a service that is offered in clinics yet not a discipline offered at universities. It is a field of biomedicine known by those involved in infertility and AR, but it is not always recognised as an important area to explore. This suggests andrology is an emerging field that is still in the process of definition. At present, it is not possible to state if it will grow into a full speciality or if it will remain as simply a topic within the much broader area of urology.

Up to this point I have explored the conformation of the AR clinic and the AR service provider. Now I move onto exploring what AR means. In Mexico, AR (TRA) stands for Assisted Reproductive Treatments or Procedures. They are rarely referred to as artificial technologies or techniques and are usually presented as high tech solutions for infertility that encompass multiple disciplines, machines and procedures, making them highly complex, yet viable and successful. Under the umbrella concept of AR, there are various procedures that are included: artificial insemination (AI), in vitro fertilisation (IVF), intracytoplasmic sperm injection (ICSI), and gamete intrafallopian transfer (GIFT), plus the combination of these with gamete or embryo donation and

surrogacy. In some cases (like some of the legal debates and media coverage) reproductive cloning is also included. Most of the time, in documents and interviews with professionals dedicated to AR, it is said that it has been 30 years since the first AR procedure was successful, but this is only true for IVF since AI existed long before. This type of reference indicates that it was the emergence of IVF which brought the term and concept of AR to the forefront of public attention. In the following section I will look at the way AR specialists, mainly those in the biomedical arena, present these procedures to their patients and to the public in general. I will draw on information taken from settings in which the AR specialists speak about these procedures, as in patient oriented conferences and the media.

Assisted Reproduction: A *Paranatural* Procedure

“Science *defeats* Infertility” (Cerón, 2007) (emphasis added)

“In reality, assisted reproduction implies trying to *imitate* nature” (Dr. AGN at the Chamber of Deputies, 10.10.2001)⁹ (emphasis added)

“They *substitute* the biological processes that originally take place in the organism (like the maturation of sex cells and fecundation) and that now can take place outside the body in lab conditions that *faithfully reproduce* the organic environment” (Flores, 2007) (emphasis added)

“Dr. Godoy explains that the new era of IVF was born with the implementation of genetic engineering and the use of PGD. The possibility of developing a healthy embryo, of *improving* its quality and with a higher prognosis for pregnancy, gives place to embrace the possibility of solutions for more infertility cases” (Azcaray Andino, 2002) (emphasis added)

“Everything that nature can no longer do, we do...We make women ovulate by giving them the *same* hormones their bodies *naturally* produce, but these are artificial... they are *harmless* and I promise you, the injections do not hurt... We cut the line of genetic diseases being passed down... we do all that nature *cannot*....we chose the *best* embryo” (DR. NA at a patient oriented talk)

Apparently, according to some doctors, AR ‘defeats’ infertility, ‘imitates’ nature, ‘substitutes’ some biological processes and ‘improves’ others, it is able to ‘faithfully reproduce’ the organic environment, and it is ‘harmless’. In this sense, AR is presented as similar to the natural process, therefore one must not worry about negative consequences, and at the same time, as capable of going beyond nature, since by selecting the best and eliminating the undesirable, it is helping to improve it by doing what it ‘cannot’ (Chávez-Courtois, 2004). This suggests AR has paranatural qualities, it goes ‘beside’ nature yet also reaches ‘beyond’ it. In this sense, nature, and more specifically ‘spontaneous’ pregnancy, is depicted as being in need of improvement and perfection (Franklin et al., 2000). This idea is strengthened when the potential success rates of the latest technical innovations are compared with

⁹ Técnicas de Reproducción Asistida, Logros y Expectativas. Foro: *Implicaciones Médicas y Jurídicas de la Reproducción Asistida*, Chamber of Deputies

pregnancy rates resulting from unassisted coitus; under this parameter “even healthy fertile women can fall short of the standard” (Albury, 1999:45).

The idea that nature is imperfect and needs improvement is reinforced again by the idea that more is better. One doctor said: “as human beings we are *not very good* when it comes to procreation, every try holds only a 23% chance, it is never 100%, because it is a selective process, and this is something established by nature” (DR.NA at a patient oriented talk) (emphasis added). The justification when saying that ‘we are *not very good* when it comes to procreation’ comes from the quantitative realm, it is because, spontaneously, pregnancy is not reached 100% of the times. But, what role do physicians give to the second part of the argument, that spontaneous pregnancies involve a ‘selective process’? Being selective might be favouring quality over quantity as indicated by the doctor in the following quote extracted from his talk at a medical conference. This doctor indicates that the reason to stimulate was to obtain more ova and by having more ova, the probability of pregnancy is believed to be higher:

“Louise Brown’s case was a spontaneous cycle, in it the normal mechanisms for follicular and ova selection do not allow all follicles to mature, hence spontaneous cycles will be monofollicular and mono-ovular. Theoretically, this would be the ideal mechanism, where the optimum ova would be selected, the one with the best possibilities to develop as opposed to the rest which possibly would not have the adequate information. So, why then did we start stimulating? Because the possibilities for pregnancy, in a unstimulated cycle, are less than in stimulated cycles. Not due to the quality of the ova, since *the quality of the ova in cycles without stimulation is better, but because you get more ova*. That is the reason: better percentages of pregnancy” (Dr.SHM at AMMR Annual Conference, 2007) (emphasis added)

As mentioned above, describing spontaneous reproduction as not so effective, alongside the success rates attributed to AR, strengthens to the point. In general, the media presents AR procedures as quite successful, from 30% success rate all the way up to 96%.

“...with the exception of the cases in which the woman has a small uterus, there is no reason why all the people here could not go home with a baby, everything has a solution. Almost all couples can achieve pregnancy...96%, or even more of the couples that attend INGENES, solve their infertility problem... there are only two things needed for success: 1) a good embryo, 2) a good endometrio.” (Dr. NA at patient oriented conference 1)

“96% of the cases that enter the program achieve pregnancy. Not all in the first try, it is not magic, but if they persist and follow the programme, I assure you that you will have your baby” (Dr. NA at patient oriented conference 2)

Specialists highlight that AR techniques are technoscientific procedures that require specialised equipment and sophisticated analytical systems that are still in evolution and are constantly developing, yet they are no longer experimental. This idea that AR

is constantly developing, places technoscience in an organic position, one in which it evolves similarly to biological evolution as understood by some: tending to become perfect. More so, since they are no longer in an experimental phase, they are now in a perfecting phase.

In a similar manner as patients, AR specialists talk about the different AR procedures as a continuum that goes from low to high complexity. The sequence begins with hormonal therapy, then come AI, GIFT, IVF and ICSI; then the use of donated gametes, surrogacy and, as the last option, there is adoption, which is rarely mentioned. It is said that a four-cycle trial should be allowed before moving on to the next level of complexity. This spectrum of complexity refers to both the technical complexity as well as the genetic and biological relationship to the offspring; the further down the line in complexity one goes, the more technology and the less genetic/biological link there is between the contracting people and the offspring. Yet, as stated in one newspaper article “Almost always, couples and doctors try to use sperm and ova that come from the husband and wife so that the baby is 100% theirs, and only when it is impossible to do so do they seek an external donor” (Vega Valerio, 2002)

[IVF is a] “treatment of high complexity with high success rates. It consists in stimulating the ovaries to produce mature ova which are then extracted from the mother and fertilised. After this, the resulting embryo is transferred to the mother for its normal development” (Clinic Ingenes website, 2010)

Conception by artificial insemination seeks fecundation by introducing capacitated and prepared semen into the uterus. This is done using a special catheter that injects the semen close to the fallopian tubes with the objective that the ‘selected’ sperms travel a shorter route and with this achieve conception. (Clinic Concibe website, 2010)

Doctors tend to depict AR procedures in a simplified way which emphasises success. The first quote presented above is an example of how most descriptions of IVF fail to mention several aspects that are crucial from an economic, emotional, health and practical perspective. The description of IVF quoted above fails to explain the process of ovarian stimulation, which in itself implies thousands of pesos in hormones, daily injections, frequent visits to the doctor to have blood samples taken and vaginal ultrasound examinations, and the possibility of having to cancel the cycle (i.e. stop the procedure) due to either hyperstimulation or low response to the hormones (i.e. too many ova or too few). This description of IVF also fails to mention that regardless of the number of ova retrieved, there is always the possibility of not achieving fertilisation or, if they do manage to obtain embryos, these might not implant or develop. The description of AI in the second quote also fails to mention many of its steps and elements. For example, it does not mention the fact that in the great majority of the cases there is also ovarian stimulation, that conception not always

takes place, that there are risks of multiple pregnancies, nor the pains and discomforts of the actual insemination process.

Furthermore, the explanations presented in the media depict the moments and steps in the process as if they were isolated thresholds that need to be passed through but which have little or no effect on the following steps. As if each stage were only a prerequisite for the next, the particularities of each stage are not related with the outcome of the following one (e.g. the type and degree of stimulation in relation to the quality of the ova and thus of the embryo). This contributes to the way users see and live the experience of going through AR: they view the stages as independent and feel that if they have gone from stage one –ovulation- to stage two –aspiration- then they are getting closer to success.

When presented in the press, it is common to observe concerns and misinformation tangled together. Although it is not the most common practice, some articles in the media do mention the possible side effects or negative consequences of AR, like ovarian hyperstimulation syndrome, multiple pregnancies and complications during the ova retrieval procedures (e.g. Cerón, 2007; Alcántara, 2008), but they are only listed without mentioning their frequency, severity or their secondary effects.

Furthermore, these are not usually pointed out by the AR specialist, neither in the media nor at the patient oriented talks. In addition to the meagre mention regarding side effects typical of AR, there are other articles which, in a tone implying concern, commonly present human reproductive cloning together with IVF, AI and gamete donation. The problem with this is that by dealing with all biotechnologies as if they were equal, no distinction is made in terms of their degree of development, their spectrum of application and the ethical and practical issues they entail. All these differences, which are many and worth considering, become minimised.

Importing & Transforming Technoscientific Knowledge

“Comparatively, the schemes that we use in our countries in Latin America are more aggressive than the ones used in Europe or the USA. There is a reason for it, abroad it is possible to repeat the procedure, because they are subsidised, and they can be carried out more successfully. Here, that is just not possible...The best scheme is the one with which we have the more experience” (Dr. A at AMMR Annual Conference, 2007)

Dr. MTMC asked Dr. SL to specify which are the tests that must be done in both women and men in order to evaluate the couple. After his answer, she summarised and noted that “not all clinics have the same access to lab tests, so it is important to know which are the options available (both technically and practically) in order to take a decision.” (at AMMR Annual Conference, 2007)

“If we stimulate more aggressively, we will end up with more pregnancies, but also with more multiple pregnancies. This, in Europe, is considered iatrogenic...maybe in the future it might be the same in our countries. In the USA they are reaching consensus in this sense, therefore, even if we don't want to,

they will oblige us to do so...There is competence, and if I have pregnancies, patients will come to me, that is logical, and it doesn't matter if it is with one or two babies. But this has a risk...we are one or two steps behind compared to Europe. Over there it is considered a matter of responsibility...It will be the same here in Mexico...we are not yet in the same stage as Europe where they transfer only one embryo" (Dr.SH at AMMR Annual Conference, 2007)

These three extracts taken from conferences given by Mexican AR specialists at the annual AMMR meeting in 2007, depict that Mexico imports knowledge (in this case AR protocols), much more than it generates it. This import process takes place by sending specialists abroad for training, by bringing foreign experts to Mexico, by participating at international conferences and by reading international journals, mainly *Infertility and Sterility* and *Human Reproduction*. This knowledge is taken from the USA and Europe, which are seen as references and leaders in the field, while Latin America is viewed as an equal. However, importing knowledge requires one to go through the process of learning to understand it and use it and it also demands adjusting it to local settings. In this case, ovarian stimulation protocols, and in general, the entire way AR services operate, must be adjusted to the economic, social, cultural, political and systemic structure and possibilities in Mexico. Economically, clinicians need to consider their and their patients' possibilities when thinking about which services they can offer and which drugs they can prescribe, finding the optimal and most efficient service structures and protocols in order to maximise success while reducing costs. Since most services are offered by private clinics, they must consider the market competition they are part of, and when the service is located within a public institution, they must consider the resources the institution allocates for AR. Lowering success rates as a consequence of the learning curve of trying out new protocols is something they cannot afford. However, since the ASRM and the ESHRE are two of the professional associations that certify AR specialists as such, if these associations establish certain guidelines and protocols, Mexican doctors might have to adjust to them if they want to remain part of these groups.

As presented in previous sections, the particular economic limitations of the Mexican AR scenario have led AR specialists to establish clinics following any of the five different schemes offering AR services, it has encouraged them to engage in marketing strategies, a practice that was new in Mexico regarding biomedical services.

Discussion

The arrival and development of AR in Mexico gave place to the emergence of two new areas within biomedicine, the gynaecologist specialised in reproductive biology and the andrologist, and one within biology- the embryologist. These emerged as

consequence of the complexities and high demands of these areas of knowledge as well as what the protocols and procedures entail. With time, it also gave place to a new type of medical office, the AR clinic. This new type of clinical setting is constructed of a diverse array of high technology machinery, physical requirements, and specialised staff. AR clinics have evolved into complex sites which have become independent from the doctors that work within them. They now hold a name and a logo of their own, they are represented online through websites that usually show pictures of their insides, they use marketing strategies to promote their services, they participate in expos and offer talks to patients (as I will explore in more detail in the following two chapters).

Likewise, the process of importing AR implied importing the condition it is treating: infertility. Although, the transition of infertility from it being a condition to it being a disease might not have taken place within the Mexican context, following the elements described by Brown (1995), one could assume there was an element of lay transformation that took place in Mexico, in that the Mexican lay public became aware that their condition was 'not normal', and that in other places it had become subject of medical attention. Furthermore, as noted by Crombie (1963), one element for the transition from condition to disease is the existence of an effective therapy, of a specialist who can offer it and a place where one can have access to it.

Infertility might not be a term that fulfills all the roles of a diagnosis in itself, however it covers some that are very important. It has legitimised the existence of a growing industry composed of, among other things, clinics, pharmaceutical products, financing schemes and both biomedical and non-biomedical remedies, as well as the vast amounts of money both individuals and public healthcare institutions allocate for dealing with it. Being labeled as 'infertile' within the context of AR has helped people establish their condition as a body illness and not a mental state and it has allowed them to foster hope that they might be able to become parents some day.

Infertility seems to be framed (Aronowitz, 2001, 2008) as a disease that occurs because women now work and seek professional success, therefore they end up postponing pregnancy. This argument is what I encompass under the label 'the age factor'. Likewise, developing countries in general, and poor and indigenous women in particular are seen as having high fertility rates because these women's reproductive lives begin in their early years (due to lack of knowledge of how to control fertility), thus there should be no reason for infertility. By arguing that infertility is due, at least in 40% of the cases, to the age factor, any other type of possible cause, such as environmental or infectious factors are pushed and left in the periphery and only a behavioral aspect is taken into consideration. Furthermore, by framing infertility as

resulting from ‘the age factor’ within a context in which the female role is still believed to be primarily reproductive, there seems to be an undertone of disapproval; something that might negatively affect the battles for gender equity still being fought in Mexico.

Although as far back as the 1940s, the importance of considering both men and women when looking at fertility/infertility was already being discussed, the AR discourse has further contributed to the opening of a space for the male role in reproduction. One cannot say that their role has fully been established yet, but some evidence of this new space as can be seen both within the medical discourse and the media. However, the way AR services are being currently offered are not always taking advantage of this since, as I will explore in more depth in the following chapters, men are not invited to participate in events such as inseminations or embryo transfers.

In this chapter I offered an analysis of the way the AR clinic, its service provider and the infertility it aims at bypassing has been constructed in Mexico from the perspective of the service provider, highlighting the different elements that came into play in this process. In the following chapter I will explore who the user of these services is, looking at the motivations that justify their engagement with such procedures, the way they conceptualise infertility and AR, their journey through doctors, clinics and diagnosis and the factors that help them decide when to stop ‘trying’.

Pilgrimage Through the Unknown World of AR

Introduction

Félix, who is 39, and María, who is 37, have been together for 21 years and married for 15. When they got married they decided to wait before having a family. They wanted to have a good financial position and travel before engaging in parenthood. It has been 10 years since they started trying. They have visited several gynaecologists, most of whom have never given them a diagnosis, while others have said that she cannot conceive due to her endometriosis. She has gone through 4 laparoscopies and they have tried three cycles of PC and one of IVF. But nothing has worked. In the last clinic they visited, they were told that their case was due to 'female factor' due to 'non-ovulation' and so they were about to begin a cycle of IVF using donated ova when I met them. She told me that she has been very stressed with all this, that she feels envious of women in her family who have got pregnant with no problem: "My sisters-in-law got pregnant out of wedlock and eloped with their now husbands. We, on the other hand, did everything as we should and look what good it has brought us!", to which he added "My mother-in-law said she wished we had got pregnant out of wedlock as well". He was also very stressed. His father was in a deep depression and nobody helped him out with him, so he had to deal with his father's depression alone, and was worried María might also fall into depression. He actually believes it would be good to see a psychologist. She always wanted two children but now, with all this, she is praying and asking God just for one. They don't care if it is a girl or a boy (Clinic 2).

Mark and Mindy are in their late 30's, they have a successful professional career and have been trying to get pregnant for over three years. The first AR clinic they attended was recommended by their gynaecologist. There, they were told that he had low sperm count, but that the required amount of sperm could be taken by means of a biopsy. He had the biopsy and they went through two cycles of IVF. No success. They moved on to another clinic. There, they went through tests again. This time they were told that the low sperm count was due to the lack of vas deferens (or deferens canals), so he was sent for a genetic test for cystic fibrosis. When the test came back positive, they were sent to see genetic counsellor. With her help, they decided that they would keep on trying to get pregnant. "By the time my son turns 25 science will have advanced so much that there will be an easier solution for him", he argues. They tried another cycle of IVF. No success. At this same clinic, they were checked again. This time, they were told that the problem was that they were incompatible. He said "That she and my sperm are not genetically speaking, they don't click. So they said our option was to use my sperm, which does work, and a donated ova, because it was hers that did not work. I don't know if she did not understand when they told her this, but at the beginning she was fine with it. We even joked about how I would choose the donor so she looked like my mom. But two days later, she changed her mind! When I asked her why she said that she was not sure she could do it. 'I feel it wouldn't be my child' she said, and said she wanted to see other options". So they went to a third clinic. The third doctor told them that he would like to try to help them have a "child of their own". "Recently they also told us we could use donated sperm and her ova, but she is not sure about that either. So, we don't know what to do. But I mean, "What personal interests do doctors have when offering these options? Money, I doubt it, if you see their offices you can see they don't need money. Professional jealousy, I don't think so. I really think we had a close relationship with the second doctor and they were probably offering us something that they trusted could work." (Mark) So I told her that if she wanted to try the third clinic we would have to ask for our documents at the second one and never go back there again." (Interview with Mark)

These stories are far from unique. They contain all the major elements common to the stories of those who have faced infertility. Most stories begin with the couple deciding to wait before becoming parents in order to achieve some degree of economic and emotional stability; a decision that had, until recently, been praised by society and in the media as responsible and desirable. Then, once they decide they are prepared and they try and try unsuccessfully, they start thinking that something is not quite right. 'Why haven't I got pregnant?' they ask themselves. Some look for help and embark on this long and intricate journey going through doctors, clinics, diagnoses and treatments with the hope that they will achieve the goal of having the child they so desire. During this journey, people have to reorganise personal and family routines and budgets, juggle social, emotional and physical conflicts, experience feelings of loneliness, jealousy, confusion and anger; the cumulus of all these situations and emotions leads them to considerable states of depression (Cousineau and Domar, 2007; Carreño-Meléndez and Sánchez-Bravo, 2007; Arranz-Lara et al. 2001a, 2001b). Along the way, they build a body of knowledge and meaning regarding infertility and AR. They acquire the lexicon and become familiar with the drugs and dosages, they build a history of AR procedures they have used and a list of doctors and healers they have visited in their quest for their child. Nonetheless, this journey confronts its travellers with decisions they might have never thought of and for which there are few cultural references, since they are the first to travel these paths. For example, when they set off, little do they know about where to look for help, which AR options to accept (e.g. adoption, gamete donation, surrogacy), what to do with untransferred embryos, who to tell, and when to stop. These practical, ethical and moral issues cause them conflict and psychological angst (Nijkam Savage 1992; Cousineau and Domar; 2007). Many pray to God for help and guidance, others look for support in family, friends or strangers, and yet others simply lived it through. Some make it to the end, while others perish on the way. All the stories I encountered depicted a long journey full of uncertainty, stress, and many complex crossroads to chose from¹.

It has been little more than twenty years since the first AR clinic opened in Mexico, hence people who have engaged in AR during this period can be considered among the first travellers of these uncharted grounds. They have left their footprints, they have marked a path, and have created landmarks for future travellers to benefit from. In this chapter I travel through the world of infertility and AR following the path the people I interviewed set out, exploring the different elements that make up this

¹ Many of the findings here reported echo what Castañeda-Jiménez and Bustos-López (2001) found in their study. The fact that their findings and the ones here presented echo one another is quite interesting if we consider that their study was carried out in a public institution, while the present study was carried out in both public and private institutions. Each of these institutions deals with a very different segment of the population in terms of culture, education and economic status. Hence, since results were similar, this can suggest that similar things happen in these different population segments, when facing infertility and undergoing AR.

journey: what motivates them to engage in this journey, confronting infertility and AR, looking for a diagnosis, finding the right doctor, collecting information, deciding over which AR procedure to use, establishing relationships along the way, embodying the different processes that conform the AR routines, and knowing when to stop. Most of these elements take place simultaneously while others are cyclical, however, due to the constraints of lineal writing, I have divided the chapter in two parts. The first part looks at the journey through doctors, diagnosis, treatment and clinics, focusing on what takes place within the clinic: the admission process and patient organisation, the patient-physician relationship and how and when patients decide to stop the journey if they ever do. In the second part I explore the motivations behind this journey: the desire for a child, the process of confronting infertility and of deciding on which AR procedure to use, and the way people juggle the instability of all things and situations once in the process of AR. However, before taking off, I will present the travellers describing their demographic and medical profiles. The material presented here emerges from the stories told by the people I observed and interviewed at the clinics and at the various public events I attended, as well as from the media. Although I had access to patients' medical files and sat through the patient review sessions, the information here presented was not taken from these sources.

The Traveller: Demographic & Medical Profile

The population of patients I observed (50 cases) and interviewed (43 cases) at the AR services varied in terms of socioeconomic level, educational background, place of origin and daily activities. Although this diversity reflects the composition of Mexico's population, due to the limited size of the sample of people I spoke to, it is not possible for me to say for sure if it reflects the characteristics of the total population of people with infertility, or of the population that uses AR. Nonetheless, the characteristics of this sample coincide in terms of age, marital status and time of evolution of infertility with the samples presented in the few single-centre studies that have been conducted in Mexico (see Carreño-Meléndez et al. 2003; Castañeda-Jiménez and Bustos-López, 2001); and it also coincides with the population of infertile patients treated by the psychologists I interviewed

The people I met at the clinics came from many different places. Some from Mexico City or its surroundings (e.g. Toluca, Cuernavaca, Xochimilco, Chalco, Ecatepec, Tlanepantla, and Texcoco); and others from places further away (e.g. Pachuca, Puebla, Zacatlán, Tepozotlán, Tampico, Veracruz, and Oaxaca (see figure 3). Traveling between these places and the clinics could take up to 5 or 6 hrs one way only, so for some patients, coming to the clinic meant leaving home for several days

and having to make arrangements for their personal and/or professional responsibilities. This was problematic for most women since the majority worked or had worked before they began treatment. Due to the time demands of the procedures, many had to quit their jobs, which meant an extra economic burden for the couple or individual.

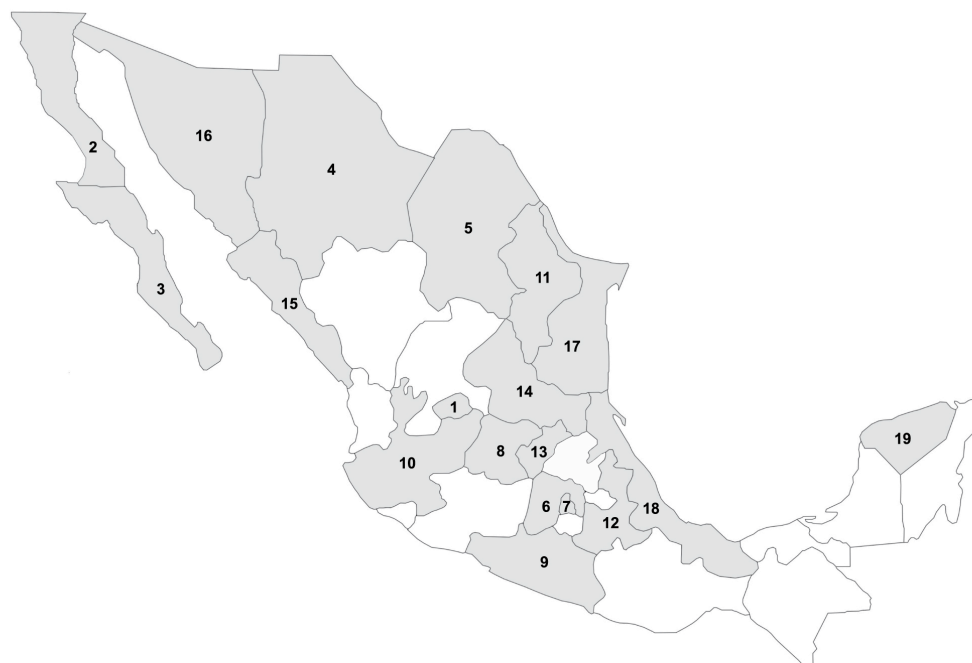


Fig.3 Clinics in Mexico	
States in grey indicate where AR clinics have opened.	
Total Population: 103,263,288 (INEGI, 2005)	
1. Aguascalientes	11. Nuevo Leon (Monterrey)
2. Baja California Norte (Tijuana, Ensenada)	12. Puebla (Puebla)
3. Baja California Sur (La Paz)	13. Querétaro (Querétaro)
4. Chihuahua (Cd. Juarez, Chihuahua)	14. San Luis Potosí (San Luis Potosí)
5. Coahuila (Saltillo, Torreon)	15. Sinaloa (Culiacán)
6. Estado Mexico	16. Sonora (Cd. Obregón, Hermosillo)
7. Distrito Federal	17. Tamaulipas (Tamoico, Matamoros)
8. Guanajuato (Leon)	18. Veracruz
9. Guerrero (Acapulco)	19. Yucatán (Merida)
10. Jalisco (Guadalajara, Mazatlán)	

Their educational background was also very diverse. Some had graduate and postgraduate degrees and had steady well paid professional jobs (e.g dentists, lawyer, and public relations managers at big corporations), others owned their businesses or found themselves in well paying non-professional jobs within the

informal sector, and others had not completed basic education and had low paid jobs like maid, janitor or other unqualified occupations.

The majority of women were between 30 and 37 and had been trying to get pregnant for over five years, and many for over ten (see table 6 for a summary on how long women have been trying to conceive). During this time, they had visited more than one doctor, seen traditional healers, and many had already been through some type of AR (see Castañeda-Jiménez and Bustos-López, 2001). They usually made a clear distinction between the time they tried to conceive without help, from the time they spent with professional help, and also made a difference between seeking biomedical help with an AR specialist and doing so with a traditional healer. Thirty-four of the forty-three couples with whom I spoke, had gone through at least one cycle of some sort of AR, from ovarian stimulation and programmed coitus (up to ten cycles in one case), to artificial insemination (up to ten cycles in one case), IVF or ICSI (up to twelve cycles in one case). Some had already used gamete donation, embryo donation, and surrogacy; and a few had looked into adoption. All this in addition to the various doctors they had seen but with whom they never engaged in what they considered treatment (e.g. for some patients treatment included exploratory and reconstructive surgeries such as laparoscopies, hysteroscopies, and tube restoration, for others they did not).

With the exception of two single women and one who was in the process of divorce, the rest of the women were married or in a stable relationship, and some in their second marriage. Some women already had children, either with their current partner or from previous relationships. In these cases they were seeking another child either because they wanted to give their child a sibling or because they wanted to give their current partner a child 'of his own'. The majority of the people I interviewed ideally desired an average of three children, however, many considered settling with just two, and many would have wanted to have twins during the cycle when the interviews were conducted.

The great variety of backgrounds and residence of the AR users suggests that infertility is present in many strata of society and that AR is being used, although not with the same frequency, throughout Mexican society. This could suggest that infertility and AR are being introduced in several segments of society simultaneously, although not necessarily in the same way nor to the same degree.

Table 6 How long have they been trying	
Years trying to conceive	Number of couples
Less than 1	1
1	2
2	1
3	6
4	3
5	4
6	3
7	6
8	4
9	0
10	0
More than 10	7
Sample of 37 patients I interviewed	

The Journey Through Doctors, Diagnosis, Treatment & Clinics

As mentioned above, the journey usually began with people suspecting that something was not quite right. Then, after having spent some time wondering what could be wrong, they started seeking help. They usually first visited a gynaecologist, a general practitioner or some other type of healthcare professional (e.g. traditional healers) (see also Castañeda-Jiménez and Bustos-López, 2001). Often it took time before people arrived to see their first AR specialist. They found out about specialised AR clinics and doctors in various ways. Some specialists were recommended by friends or family members who had gone through the same process, by other doctors, or they were sent there by the healthcare scheme they belonged to; others found out about the different clinics and doctors through the media (e.g. television shows and radio programmes, billboards ads, the yellow pages, articles in the newspaper and magazines), or through patient oriented events such as information events organised by support groups and the different recruiting events organised by the clinics. Some patients would come and go, from one clinic to the next and then back to where they had started.

In general, those seeking help from an AR specialist arrive at the specialist's office with no physical pain and no apparent health issues but with an unfulfilled desire to achieve something that others can achieve without the aid of medical intervention: a pregnancy that will result in a healthy child. They expected an explanation for their infertility, but above all, they expected the doctor to help them conceive a child. In this

sense, the patient assigned the doctor the responsibility of diagnosing the problem, fixing or bypassing it, and giving them the desired child, and the doctor usually accepted this responsibility (Becker and Nachtigall, 1991):

“Come on Doc, you can do it. I have been told, by very important people, that you are the best and that when you strike you always hit the bull’s eye... You can do anything if you have faith in God, right?” (Male Patient, Clinic 1)

Every time patients arrived to a new doctor it meant they had to retell their entire health and reproductive history and frequently they were subjected again to the set of diagnostic tests (from blood samples and ultra sounds to exploratory surgical operations). This usually happened because doctors did not trust what the previous doctors had done, they did not consider the previous diagnostic test results nor the outcomes of previous treatments as elements for their own diagnosis. This meant patients had to live through the diagnostic experience again, pay for the tests again, and wait until all this information helped the doctor decide what protocol to try and hence be able to start a new cycle. Sometimes, visiting a new doctor and undergoing a new diagnostic procedure resulted in a new diagnosis. Each diagnostic procedure was time consuming, and implied emotional and economic costs. Patients who complained about having to go through the process again, were usually patients who had already received a diagnosis at that same clinic but had not undergone any AR procedure yet. Otherwise, women did not really complain about having the tests run again. This could be because being checked and diagnosed again may represent a clean start for patients and thus greater possibility for success. However, this suggestion would require further exploration.

But, not all patients got a diagnosis, and the lack of it represented great uncertainty:

The woman said: “The procedures are very draining, particularly because we don’t understand what is wrong. We don’t understand why I simply can’t keep the embryos, and the doctors say they don’t understand it either. I produce good quality ova. I even donated when we were at the other clinic”. The man added: “The problem is that my wife absorbs the embryos” (Couple, 19 years of AR, Clinic 1)

“I would find myself crying on my way home, asking myself why do my three brothers have children and I can’t, and there is no clear diagnosis!” (Male, 7 AI and 3 IVF cycles Clinic 1)

“We have been married for 16 years and have never had children. After many different diagnostic procedures, the doctors have concluded that she has unexplained female infertility” (Male, Clinic 1P)

Diagnosing means employing a set of strategies to recollect the symptoms and identify the signs that will help find an explanation or a reason for the patient’s problems (Blaxter, 1978). In doing so, it helps the doctor guide his or her medical actions in terms of treatment protocols, and it sets out a spectrum of possible

outcomes to expect, for both patient and physician. Furthermore, a clear diagnosis helps patients deal with the situation because, first, a diagnosis usually locates the problem in the body and not in the mind (yet not always is this the case), second, because it distributes responsibility within the couple and the AR professionals, third, because it denotes that the medical community (who can do something about it) have acknowledged and validated the existence of the illness as a condition; Last but not least, a diagnosis legitimise and validates patients' actions (i.e seek medical help, changing routines due to treatment) and patients' feelings,² and for a moment, it places the problem in the realm of the controllable since the treatment supposedly will help overcome or bypass infertility, though after each unsuccessful cycle the problem jumps right back to being an uncontrollable situation. All this said, in general, diagnosing is important to help doctors and patients decide what to do.

Some patients said they did not know what their diagnosis was, others simply did not understand what the diagnosis meant (e.g inexplicable infertility), and yet others said it was not clear why it changed from one clinic to the other. Each new diagnosis usually meant a new treatment. Sometimes this new treatment only meant different dosages of the same drug, but other times it meant moving up or down the scale of complexity, what required having to reevaluate what had already been said thought and debated about. This became particularly complicated if the diagnosis and the rationale for the offered treatment were not clear to the patient. In order for a diagnosis to help patients deal with their conditions it has to make sense to them, it has to be meaningful: "people do not want to exist in a diagnostic limbo and thus see ways of making sense of their situation" (Stockl, 2007:1557). The vagueness of the terms employed in cases of infertility (e.g 'sterility' and 'infertility' sometimes used as synonyms and others not, or 'inexplicable infertility') may affect people's understanding of their situation as well as their capacity to make sense of the diagnosis, particularly in cases in which people had experienced pregnancy in the past, and mostly in cases in which this pregnancy was achieved without the aid of AR. Often they did not understand why the label secondary 'infertility' was attached to them if they had already been pregnant, what for them meant they were not infertile. This stresses the idea that a lack of a diagnosis that makes sense to the patient complicates the journey by making the process more stressful.

As depicted by the case of Mark and Mindy, in each clinic they received a slightly different explanation for their infertility and a different option to bypass it, yet they were apparently never offered an explanation as to why the diagnosis changed, nor

² There seems to be a set of common feelings facing certain ailments. Infertility tends to bring forth feelings of jealousy, envy, anger, and problems with self-esteem. These feelings are commonly referred to in support groups and information sessions. Sharing feelings and experiences helps people realize that they are not the owners of such feelings, as the head of one AR support group phrased it, but that they are shared among those in the same situation, hence they are typical of the situation.

an argument to explain the different AR options they were offered. In an independent interview, Mindy said she never understood why, if it was her husband who had the genetic condition, they suggested ova donation. Meanwhile, Mark complained about Mindy changing her mind about accepting ova donation, even though she was only responding to changes in the medical opinion. If the diagnosis referred to problems with the sperm, sperm donation made sense to her, but if the diagnosis did not change and the solution did (now ova donation) it no longer made sense to her.

“We are stuck there. The days pass and nothing, and I am eager and desperate to know what she wants to do, what we will do. She is stuck, I am not, because I think I can live with it” [*it being gamete donation*]

In some of these cases, people try to find other ways of explaining to themselves what is not being explained to them by ‘the expert’ (Castañeda-Jiménez and Bustos-López, 2001). As Mark explained when asked how he perceived the situation, he said that he was a ‘scientific man’, “but I know there are other things, call them spiritual, or parascientific or whatever” and considered that these ‘other things’ might be the ones responsible for their problems regarding conception.

As mentioned above, one of the consequences of the journeys through clinics, doctors, diagnosis, and treatments is that patients tend to build up a set of practical and theoretical knowledge about AR. They become aware of what to expect, not only in terms of what a clinic should have, but also of what is important in the procedure (e.g. follicular growth), which drugs are used and the ways these are administered. Adding, eliminating or changing the type of drug used or its dosages, or changing the type of procedure, were usually experienced, to greater or lesser extent, as disruptions that were sometimes welcomed and other times doubted or questioned, mostly evaluated in terms of the success or failure of previous treatments:

The doctor explain to them that the procedure was not going as expected and that they would have to cancel it and try something different for the next cycle. Both husband and wife began to ask questions: “why was this procedure so different from the one we had gone through at the other clinic where we did get pregnant?” he asked and continued “With our previous doctor we had only taken *omifin*, and we would call the doctor so he would tell us when to have sex. There were no visits, no blood samples, so it was easier and it worked.” Then she added “I don’t like comparing this clinic with the other one but I don’t understand why the treatment is being so different and complicated”. The doctor told her “you will get pregnant, yours isn’t a difficult case, we just need to find the appropriate dosage because the first time you overstimulated and the second time you under stimulated. He also explained what size the follicles needed to be prior to fertilisation and why she was feeling pain. (Couple LESR, preparing for a cycle of AR Clinic 1)

As mentioned earlier, in general, the diagnosis affects the decision of what treatment to use. However, in the case of AR, this is not so clear. In most cases, the recommended thing was to begin with four cycles of programmed coitus, then four

cycles of AI and then four cycles of IVF and ICSI, unless there is a very clear and specific reason not to do so (e.g age, cancer). Moving from one procedure to the next one is a difficult and confronting step, particularly when these movements are not accompanied by a change in diagnosis or a diagnosis that makes sense to the patient:

“We are in shock, we came in search for the most natural procedure and we ended up with the most complex one. We knew about IVF but I thought it was for those who can’t have children, never for me. I am 28 years old.” At a certain point he did ask the doctor why it had been so easy to conceive his daughter and now it was becoming so difficult. The doctor used the age explanation again: “how long ago did you have Roberta?” he asked. “Two years ago” they answered. “See, two years have past, your ova are two years older. Time flies and you are not getting younger” (Couple, after their third AI cycle was cancelled, Clinic 1)

Due to the nature of the treatments, patients were seen by many staff members, however, the characteristics of the AR service influenced how responsibility was distributed among the staff. While in the private sector, patients usually chose a particular doctor and expected him or her to be responsible for their treatment and to see him or her during most of the consultation sessions; in the public service, patients were aware that they would be assigned a head doctor, and that this doctor was not necessarily the one they would normally see. Furthermore, in both the private and the public sector, the AR service was usually also an education facility, hence residents also saw patients. Although residents were never responsible for the patients, in the public AR service they were the ones who usually attended patients while in the private AR service, they usually only gave instructions, received calls, and checked on patients when in recovery. Nevertheless, in both cases, having more than one doctor following a procedure was difficult, particularly if they did not have the habit of keeping themselves informed about the progress of each case. This lack of attention became evident when doctors or residents asked the patient to recall the medicines and dosages they were taking. Although patients were aware of the great workload doctors had, particularly those within the public sector, they also felt doctors should pay more attention to them, as one woman told me after consultation “they should at least read my file before coming in”. In more than one occasion patients hinted that some of the cancelled or unsuccessful cycles were due to doctors’ negligence. Furthermore, as noted by Mark, the particular type of relationship established between the doctor and the patient influenced their trust in the diagnosis and treatment plan, particularly in cases of great uncertainty:

“What personal interests do doctors have when offering these options? Money, I doubt it, if you see their offices you can see they don’t need money. Professional jealousy, I don’t think so. I really think we had a close relationship with the second doctor and they were probably offering us something that they trusted could work.” (Mark)

This only serves to prove that the patient-physician relationship is affected by many factors and it can have its effects on the treatment. Some of these factors pertain to the healthcare system in which the interaction takes place; for example, the increasing number of people health professionals have to treat and the bureaucratisation of healthcare services, particularly in institutionalised medicine, have left doctors with little time to spend with patients and colleagues (De la Fuente, 1992; Dugdale et al. 1999; Kaba and Sooriakumaran, 2007). Others are related to the evolution of medicine as a body of knowledge; for example, the specialisation of medicine has required more teamwork, what leads to –among other things– an unclear allocation of responsibility and less time for direct contact between doctors and patients, all making inefficiency to increase (Dugdale et al., 1999; Kaba and Sooriakumaran, 2007; Rodning, 1992). Issues like availability and accessibility to medical information has made patients feel ‘empowered’ with information which is not always up-to-date or accurate (De la Fuente, 1992; Iverson et al. 2008) none the less it gives patients the necessary tools to engage themselves in a more active role within the patient-physician relationship (Ramos-Ramos, et al, 2008). Physicians have become worried that their influence on patients’ health decisions may be compromised (Iverson et al. 2008) and, because not everyone is medically literate nor has the necessary media literacy skills, people will be unable to evaluate the information they read online and may end up misdiagnosing and wrongly treating themselves (Gerber and Eiser, 2001). Alongside this, there is growing fear among physicians that they could be sued by the patients and the ever more common practice of seeking second and third opinions (something central to the AR journey), has created higher levels of distrust on both sides, thus has transformed the patient-physician relationship (Kaba and Sooriakumaran, 2007).

Another issue I observed that differed from one service to the other concerned the place and role they assigned or allowed the partner to play. Some services, like the public one, argue that due to space limitations in the clinic and in order to offer more privacy, only the person being treated that day is allowed to access the AR service. So, if it is the man who has to leave his sperm sample, the woman has to wait outside the hospital, on the contrary, if it is the woman who is having an ultrasound, is being inseminated or undergoing ova aspiration or embryo transfer, she is the only one allowed in the service. In the case of the private AR service I attended, the person being treated as well as her or his companion were allowed in the consultation room, which were private rooms, and in many cases men were invited to observe the ultrasounds. However, women were not allowed into the room when the sperm sample was collected, nor men when women were being inseminated, nor during ova aspiration, or embryo transfer. Though AR disrupts the intimacy of the non-assisted reproductive process by including a team of third parties, it could offer an option for

men to become much more involved in the reproductive process by allowing them to participate in the moments when they are normally excluded, which happen to be the most meaningful and symbolic moments of the procedures: insemination and embryo transfer. Many men ask to be allowed in the operating room when these procedures take place, and are still not allowed to do so. It seems as if the ritual and sanctity of these events lie within the medical realm and not the family-formation realm, making them seem like spectacles only for the initiated (the doctors) and excluding male partner from the entire process since they are not initiated. Nevertheless, some men are very participative during consultation, they ask questions, remember dosages and complain about the treatments. In fact, it is men who complain the most about the number of injections and the frequency with which blood samples are taken from their partners. Many women commented on how their partners participated in the process by giving them the injections, looking for information with them, choosing the donor together with them (in case of such), being with them in consultation, and in general, looking after them. In fact, many commented on how helpful their husbands had become with house chores once they were undergoing treatment.

In addition to the already mentioned aspects that compose the treatment routine, there are practical issues, like getting to the clinic, which affect it as well. As mentioned earlier, patients need to go to the clinic on a regular basis during certain phases of the treatment routine. This can be quite an issue if one considers distances in Mexico City, its inefficient and limited public transportation and the costs of parking. For those who use the work related AR service, and that come from out of town, the City's complexity adds to the difficulties that travelling between their hometowns and Mexico City entails. In many cases, patients have to leave their homes for several days and often they are not informed about it until they have arrived to the clinic, making it difficult to plan ahead. Another practical issue is getting medicines. The drugs used for AR are expensive and, because they are highly specialised, they are difficult to find since not all pharmacies carry them or hold large stocks. Sometimes patients have to spend between two and three hours going from pharmacy to pharmacy looking for the medication and sometimes they cannot find it and fear that if they miss taking one, the entire cycle will be jeopardised.

Is there an end to the journey?

Staying on this journey is difficult, yet leaving it is equally so. When patients visit a new doctor, they have high expectations, but after a set of unsuccessful cycles it is common for them to leave in search of a new doctor.

“When you find out that someone got pregnant with one particular doctor, you just want to run to him” (Female, more than 6 years of AR treatments)

“I change doctor every time the treatment fails” (Female, 13 years of AR treatments)

“We change clinics when we have too many cycles or when someone recommends us a new one” (Female, 19 years of AR treatments)

The amount of time people spent with each doctor varied a great deal. As explained in the quotes mentioned above, the reasons given for leaving doctors they had previously visited were frequently related to failed treatments. Unsuccessful treatments dress the clinic and the doctors with negative feelings. It is frequent for patients to not want to go back to the clinic after receiving the call with the negative pregnancy test, and they tend to lose faith in that particular doctor. It is common among AR patients to try out a certain number of cycles with one doctor, and if these are unsuccessful, they will move on to a new doctor. My informants spoke of other factors that also played an important role when deciding to stay or not in a particular clinic or with a particular doctor. In some cases, their economic possibilities determined where they could get treatment, hence sometimes, even if they wanted to change doctors, they could not afford treatment elsewhere. In other cases, the couple's particular requirements also drove them to other clinics, for example, if the clinic they were at did not have the necessary technology, as was the case with several couples who came from smaller cities (this was one of the reasons for internal reproductive tourism). There were a few cases of couples who were of Japanese origin who needed gamete donation, the doctor in their clinic suggested (and facilitated) they went to a clinic in the USA, because there they would be able to find Asian gametes for donation. Sometimes patients left the clinic because the doctors were not willing to engage in a particular situation or refused to offer a particular treatment. One example of this was a couple who had gametes stored abroad but their doctor did not want to get involved in bringing the sperm sample to Mexico, so they had to look for another doctor that would help them in this practical matter. In another situation, a couple wanted to try surrogacy but, due to the legal implications this entails in Mexico, their doctor refused to offer that option so they changed to a clinic that would offer it.

Some patients established a plan of action beforehand in case the treatment failed; they knew which doctor they would see next, how many cycles they would try with him, and where they would go if this also failed, where they would adopt or what they would do if they decided to stop AR treatments. This seemed to give them a sense of better control of their reproductive lives. However, due to the limited duration of this study it was not possible to assess if indeed they followed this plan and if they in fact gained more control of their reproductive lives. This could be an interesting thing to

look at, particularly for those interested in developing support programs and psychological counselling.

AR confronts people with the need to decide how far and for how long they want to keep on trying. Not achieving success, and more so when they do not clearly understand why, leaves them with the nagging question of 'what if the next cycle was the good one?' Deciding to keep on or to stop is a difficult decision that sometimes places patients in a situation in which they have to negotiate between the opinions of doctors, their partners, their families and their own opinions:

Last night, on the phone, the doctor told her the pregnancy test came back negative. She was alone since her husband had gone back to their town to work. The next day she went to the hospital and her treating doctor told her she should try again with the frozen embryos. Without asking her how she felt and assuming she and her husband wanted and could attempt at another cycle, he told her: "don't lose hope, there are still three embryos left and they are in good shape. Once the small cyst disappears we can try again, the second attempt is easier. We would like it to happen in the first attempt, but the second ones are usually better. The frozen embryos can survive for many years, so take your time and don't worry, they don't deform or anything...Don't lose hope. Come on the second day of your cycle to see how you are and to see how the cyst is because everything has to be perfect before we start." After listening, she asked what had gone wrong in the previous cycle, if the cause was that she has not had one shot during the cycle [because she could not find the medicine], if it was the cyst, or what had gone wrong. The Dr. told her it was nothing of the sort, that she should not worry that the one time she did not have the injection was not her fault and that none of it had anything to do with the result "we had a good number of ova and they fertilised and all... it was not your fault... there is also a male factor...Tell your husband to keep on taking the vitamins... we won't be needing him in this second try because we already have the embryos". But neither she nor her husband were sure of what to do. The husband believed they should stop because "she suffers a lot with the treatments" and suggested they adopt. She, on the other hand, was confused because the treating doctor told her that the second attempt [embryo transfer] was easier and that it usually worked. However, she wasn't even sure they would get the approval from the company to pay for another cycle. With much confusion she said: "We had agreed that if it did not work we would stop and think of another solution". (Female, 16 years trying to conceive)

This vignette depicts how the interrelation of various elements come into play in the negotiation process regarding what to do when faced with having to decide on a new cycle. The woman in the vignette is facing a dilemma: to try again or to stop. Various actors appear in the decision making process. On the one hand, there is the treating doctor who has his views about why the previous cycle was unsuccessful and his expectations for the next cycle; on the other hand, there is his husband who has his views about the emotional and physical toll of the treatments; and finally, her own expectations, physical experiences and desires of becoming a mother. In the process of negotiation many elements come into play, some clash while others support each other. Things like the diagnosis, the previous treatment, the future treatment, and

economic factors are perceived and dealt with differently depending on who the subject is: the doctor, the male, or the female patient.

“It is important to put a limit to the number of cycles one goes through. We have set a limit of two more cycles, one here and one in N.Y. If they fail we will adopt in Russia”

Some began the journey without ever thinking about when to stop or why to stop, others left the decision in the doctors' hands “When the doctors say”, or in the clinic's hands “The clinic only allows four cycles, so that would be the limit”. Others used money as the parameter saying that as long as there is money to pay, they would keep on, while others considered health related issues as reasons to stop. A few, mostly those using AI, considered not taking the next step (i.e IVF or gamete donation). At the end, what became clear was that the reason to stop was like a mirage, with each new cycle this almost hypothetical image in the horizon moved, sometimes it got closer and sometimes it moved further away.

Confronting Infertility

What motivates people to engage in AR? What keeps them travelling this long and complicated journey? Basically, it is the desire to have children. However, there is not just one single reason why people want to procreate. Reviewing the literature on AR in other locations, there seem to be many reasons why people want to have children. There are, for example, sociocultural elements such as linking generations (the living with the dead), establishing a special bond between the couple and giving meaning to marriage (Pashigian, 2002; Handwerker, 2002; Jenkins, 2002), economic and practical reasons such as providing care in old age, help with work and family income (Daar and Merali, 2002), sociopolitical reasons such as pronatalist ideas (Kahan, 2002; Carmeli and Birenbaum-Carmeli, 2000; Van Balen and Inhorn, 2002), and gender identity issues (Paxson, 2003, 2006). However, it is never purely one or the other; there is a multilayered and complex intertwined fabric of reasons.

[1] “I want to know what it feels like to be a mother and for him to be a father... Who is going to take care of me when I grow old, I fear ending up alone... A child gives you strength and reason to live and fight... There is social pressure too, if you don't have children you are not a woman... I consider those women who decide not to have children due to the country's situation responsible” (34 year old woman, 10 years trying, Clinic 2)

[2] “I don't know... I would like to have the privilege of being a mother. I want to know how it feels when they call you mother... For my husband who is very tender and likes children a lot... His family puts a lot of pressure on us” (33 year old woman, 6 years trying, Clinic 2)

[3] “It is time to experience maternity. I want to bring life and give love. In the past, I was afraid and very comfortable in my successful independent life but I realised that it was not reason enough not to experience maternity” (41 year old single woman, in her first cycle, Clinic 1)

[4] (He) "There are things one simply does not think about, because if you do, you wouldn't do them. You wouldn't get married or have children if you thought much about it" (She) "It's my life plan... there is a lot of social pressure as well, first they ask you when you will get married, then when the children will come, and when you have one, when will the next one come" (Couple. She is 35 years old and he is 37 15 years trying, Clinic 1)

[5] "I am not even sure I want children, I can't stand a misbehaved child, although they say that when it is your own then you love them, but I am not sure. But if I don't have one, then he might leave me. Plus, the pressure from the in-laws is really too much." (30 year old woman, Clinic 1)

[6] "I actually never wanted kids, I wanted to study like my sister...But my husband has always wanted children. It took him ten years to convince me, plus there is social pressure. My parents want grandchildren, it is hard dealing with social pressure. They want someone to inherit, and well, descendants are important, you know, reproducing is important" (41 year old woman, Clinic 1)

As these quotes illustrate, in the case of Mexico there was a mixture of reasons for wanting children, from giving meaning and strength to the marital relationship, fulfilling a maternal instinct, realising the established female role, satisfying their spouses desires of being fathers, to giving their existing child a sibling, as a response to social pressure, as a way of dealing with practical issues related to work and old age, and as a way of leaving a legacy and transcendence. Some, however, were clear and honest about not having thoroughly thought about why they wanted to have children. At the end, most reasons were related to social pressure, gender roles and practical issues. But what happens if the "natural obligation" (Pedroza Luna, 2008: 28) women have to reproduce is not fulfilled? Or if men discover they are not able to 'give their wives a child'?

How people react when confronted with infertility will depend on various factors: their self-esteem and how much the desired child will determine the meaning and value of their identity, the degree and type of social pressure they endure, their concept of infertility and their points of view regarding AR, their diagnosis, the number of doctors they have seen, and how long they have been trying to conceive (cf. Arranz-Lara et al. 2001a, 2001b). I will begin by exploring the impact of infertility on Mexican gender roles. For this I will draw on the plot line of a drama show called *La Rosa de Guadalupe* (Televisa, 2007) (Guadalupe's Rose).

Scene 1 At Roberta and Santiago's civil wedding

Roberta's Mother: "You deserve to be happy... you already got married in a church and now you are legally married, I wish you happiness"

Roberta: "I am very, very happy, I will now have my own family!"

Santiago's Father: "Now that you are the wife of my only child, I hope that soon you will give me many grandsons"

Roberta: "This is our greatest desire as well, we want to have children soon."

Scene 2. Three years after the wedding. At Roberta's family home. Roberta is worried because she has not been able to get pregnant

Roberta's Mother: "My family is my reason for living"

...

Roberta: "I haven't been able to give Santiago a child... I'm afraid that something is wrong."

Scene 3. Roberta and her mother after having visited the Doctor and being told that it will be very difficult for Roberta to conceive

Mother: "We won't stop fighting until you are happy"

Roberta: "I can't be happy. The only way of being happy is being a mother and I will not be a mother, I will never be able to give Santiago a child"

Mother: "Don't say that, don't feel defeated before putting up a fight. It won't be easy but I will be next to you all the way... I would give anything to avoid your suffering... anything"

In these lines, the elements that make up the Mexican female identity are clearly depicted: the role of wife and the role of mother, which conjoined become the role of housewife. Only through marriage is it that women can access these defining roles (Asakura, 2005). Marriage contextualises and marks the beginning of three new areas in women's life: her sexual life, her conjugal life and her reproductive life, and all are in turn supported by values of virginity, maternal love, and sexuality with the purpose of reproduction (Sanchez Bringas, 2005). These roles define women in terms of the other: their husband and their child, which united become her family. Without a child, how can she prove she is a good wife, a good mother, hence a good woman?

Scene 3. Roberta and her mother after having visited the Doctor and being told that it will be very difficult for Roberta to conceive

Roberta: "What is the use, if I can't function as a woman, I am useless, I am an empty woman, empty"

Since the purpose of marriage is procreation, some women feel they lose their value as women, their purpose in life, and fear they might lose their husband (see quote 6) if they cannot become mothers (cf. Carreño Meléndez et al. 2003 found in their study). Without a child, some women feel they 'can't be happy', according to them, the only way of being happy is being a mother because their family is their 'reason for living'. Furthermore, sexuality and reproduction are united and geared towards forming a family, so when facing infertility both these areas are conflicted "thus when facing infertility we are also facing a problem in our sexual beings...losing one's image as a sexual and reproductive being is a grieving experience" (Aguiar, 2008:116) because one is losing a part of one's self-image or self-concept (cf. Chávez-Courtois, 2004; Carreño Meléndez et al. 2003).

However, men and women live this loss in different ways. For men, paternity means producing offspring and at the most, economically financing their existence (Asakura, 2005). As in the female, in the male gender identity the sexual and reproductive roles are also united. Sexual performance is associated with masculinity, virility and power. The only way a man shows his masculinity, virility and power is through the product of his sexual performance, in other words, through the number of children he can

produce. If a man cannot have children there is the belief that it is because he has a sexual dysfunction. This concept makes it difficult for men to accept being medically checked when male related infertility is suspected. One of the few studies that looks at the attitude of Mexican Men towards infertility and AR stated that most of the male partners of women seeking AR treatment at that particular public institution were submissive, passive and had not a strong desire to become fathers, but that they tolerated and collaborated with their wives during treatment (Arranz-Lara, et al. 2001a).

Interestingly enough, in some cases, such as in the *La Rosa de Guadalupe*, they never mention the fact that it could be the man who had reproductive problems. In several scenes where Roberta is shown visiting doctors, Santiago is not even present, doctors never mention the need to run tests on him, and none of the other characters ever suggests this possibility. This reinforces the idea that reproduction (and its problems and the problems that may come along with it) is exclusively a female issue. Nevertheless, in other media productions as well as in many patient oriented conferences, the incidence of male infertility is stated as being anywhere from almost equal to slightly above that of female infertility.

Scene 4. Roberta and Santiago alone in their bedroom.

Roberta: "The Doctor told me it would be very difficult for me to become a mother... please forgive me, forgive me for letting you down as a woman. I wish I could make your dream of having a child come true, but I can't, I can't"
 Santiago: "Don't torture yourself, we will find a solution, we will find a way so you can get pregnant"
 Roberta: "I have to be a mother, I desire so being a mother. I want to be a mother, please, I want to be a mother!"

The wife's responsibility towards her husband goes beyond serving and taking care of him, she must also 'give him a child'. Her responsibility as a mother is to sacrifice everything for her children; the more a mother sacrifices, the stronger her maternal love is said to be, and the better mother/woman she is believed to be. Sacrifice is at the crux of these two relationships. Women must sacrifice everything for their husbands, and above all, for their children. Sometimes, they think they should sacrifice themselves, push their husbands away or convince them to leave them so they can fulfil their desire of having children with another 'healthy' woman (see *Marie Claire* Sep. 2006 and *Tu Fertilidad* 2008). Likewise, they also think they should sacrifice everything for their children, even for the imaginary desired child, and think everyone around them should know about it (again similar to what Arranz-Lara et al. 2001a found in their study).

"If I can't conceive I will leave my husband, I don't have the right to take away his dream. I know he is desperate to have children, I know he would love to have one of his own. I have tried to make him divorce me, I have behaved badly and been mean and all, but he will not leave me. He said that we are in

this together and that we will try. But I see how he gets when he sees a baby and I feel terrible..." (28 year old woman who has a child from a previous relationship but her current partner does not have any of his own)

Many women commented that they felt that other women looked down upon those who do not have children:

"...Women without children are looked down upon, specially by other women. It is as if the value women have is centred only in relation to their children. They use their children as trophies and as shields. They use them as excuses, explanations and reasons for their situation and for what they do" (40 year old woman, 7 years trying, Clinic 1)

An unfulfilled mothering role affects women not only with their partners and other women that surround them, but also with their families, particularly with their in-laws. The idea that the in-laws will intercede and try to convince their son to leave his wife because she is incapable of bearing children is common in many social circles (see quote 5) (Boonmongkon, 2002), and it is frequently reinforced in the media.

Scene 6. Santiago and his father at the office.

Santiago's father: "How is Roberta? What is going on? You've been married for six years and you still haven't given me a grandson... Remember you are my sole heir; everything I have done is for you and your children. You will be my only heirs... if you want to get my fortune you have to give me a grandson, now"

Scene 7. Roberta and Santiago at home, fighting

S: "Why talk about it if we know we are condemned to be childless"

R: "You will never stop blaming me that I am an empty woman"

S: "My father pressures me, if I don't give him a grandson he won't give me his inheritance"

Scene 19. Roberta and her father-in-law

Santiago's father: "You know I am a business man and I don't like to beat around the bushes. I am here to ask you to divorce my son... I know you can't have children, and a woman like that is no good in my family. During generations we have made a great fortune, and it must continue this way. That is why I need a heir... love has nothing to do with this. The important thing here is procreation, to reproduce oneself through the children"

Roberta: "There are other options, like adoption"

Santiago's father: "Never, I will not allow a fortune of this size to end up in the hands of a stranger. My heir has to be blood of my blood... the only solution is that you get a divorce... I will guarantee that you will be well off financially"

She kicks him out of her house.

Not only is the value of women as such granted by their capability to have children and if they cannot produce offspring, they become "empty and dry women" and therefore, they are not entitled to happiness or to self-realisation –since having children is what gives meaning and purpose to her existence, and as depicted in the excerpt, in some families they are not welcomed. Families commonly play an important role by putting pressure on couples to have children and by being supportive or not of other ways of forming families (i.e gamete donation or adoption). Particularly in contexts in which family ties are bound with blood.

Infertility & AR Conceptions

As mentioned earlier, the way people view infertility and AR will also influence the way they confront it and the decisions they will take as to what to do about it.

“I view it as destiny...Like God's punishment, or maybe He has something better in store for me” (28 year old woman, 3 years trying, Clinic 2)

“I have this problem because I waited too long to try to conceive, but this is the right age for me psychologically, monetarily and morally” (37 year old woman, more than three years trying, Clinic 2)

“I see it as something unknown but not as a disease” (36 year old woman, 12 years trying, Clinic 2)

“I would describe infertility as bad luck” (32 year old woman 8 years trying, Clinic 2)

“It is something ugly, it is an obstacle, it is an illness, but I don't feel ill” (32 year old woman, 4 years trying, Clinic 2)

“Something that is not working, insufficient, I am unable to produce. I can answer in technical terms: someone incapable to procreate. But we are not infertile; the problem has to do with age. In fact, I was not infertile. I am clinging to the idea that since I have got pregnant in the past I will be able to do so again” (44 year old woman, 13 years trying, Clinic 1)

These quotes paint an interesting image of the way people who are face infertility see it. The first thing worth noting is that, a strong emphasis depicting infertility as a disease is not evident. People diagnosed or labelled as infertile or sterile feel no bodily pain other than the one caused by the procedures, and some believe that because they have got pregnant in the past, they do not see themselves as being sterile, hence they will get pregnant again in the future. Nevertheless, although some do consider that it can be an illness, the majority agree that there is also something else, some call it destiny, bad luck, God's will, or simply 'not the right time'.

Scene 37. An image of the Virgin of Guadalupe and the rose.

Voice over: “We women are privileged because we have the gift of being mothers. There are occasions where this is not easy to achieve, but medical science has found many roads to help women become a mother. Love and medicine give us women the light of lost hope”

In the past, childlessness was usually seen as something irreversible, as reflected in the different ways it was named and conceptualised. ‘Barrenness’ for example, was a word used to refer to involuntary childlessness that implied “a divine curse of biblical proportions” while sterility was a term that indicated that it was an “absolutely irreversible condition” (Sandelowski and de Lacey, 2002:35). Hence, people facing undesired childlessness were given two options: either remaining childless or trying adoption. As indicated by the voice over in the programme, with the emergence of AR procedures, childlessness became a bodily situation, now referred to as infertility, that

could be handled, treated or bypassed by high tech biomedicine: “love and medicine gives us women the light of lost hope”.

Although some people still do not like being labelled as ‘infertile’ because for them the term still implies being condemned to never having children (Turner and Nachtigall, 2010), within other sectors of society, mainly the biomedical one, the term has acquired a new meaning. Sandelowski and de Lacey (2002) indicate this shift in meaning by drawing a distinction between infertility and post-1978 infertility. Their suggested change in term reflects the change in the possibilities to deal with it. Post-1978 infertility “connotes a medically and socially liminal state in which affected persons hover between reproductive incapacity and capacity: that is ‘not yet pregnant’” (Sandelowski and de Lacey, 2002:35). Infertility, or post-1978 infertility turned into an ‘in between’ state created by technology. Regardless of the way they conceptualise infertility, with the advent of AR they are faced with the need to decide if they will do something to bypass it or not. Soon, people facing infertility and their doctors began to assume that almost any type of biophysical obstacle to reproduction could be at least bypassed, if not removed or cured, using the varied and complex array of techniques (Sandelowski and de Lacey, 2002:35). With the availability of AR, people’s perception of childlessness began to change from being an irreversible condition to it being a situation that could potentially be redeemed using one of the many options offered. As a result, people facing infertility today have a new option: AR. This new option *obliges* them to *have* to decide whether they remain childless, adopt or engage in AR in order to have ‘a child of their own’. They *have* to decide which of all the AR options they want to accept, how they are going to socialise the decision, who they are going to tell, and when and why they are going to stop, what in itself becomes a problem because the feeling persists that they *must* try the ‘new technique’ or see this other doctor, turning this journey into a way of life (Franklin, 1997; Le Breton, 1999:75; Sandelowski and de Lacey, 2002). What is more, as the following quotes illustrate, it is common for women to feel that, if they do not engage in AR, this means they were not trying hard enough³:

“I still had a chance so I didn’t really consider it [adoption] at that moment...Yesterday, I did see them [the adoption papers], I had a quick look at them and saw that I needed an infertility certificate –which I will ask the doctor for on Friday- plus a bunch of other things.” (39 year old woman, IVF user, after receiving a negative pregnancy test, 8 years trying, Clinic 2)

“I have one objective: having a baby. So I will do all that is in my power to achieve it, I don’t want to regret later and reproach myself that I did not do all that I could have.” (Woman, 6 years trying, Clinic 2)

³ It is important to underline that all the women who participated in this study had already decided on engaging with AR. It would be interesting to learn about the reasons that women who do not engage in AR have when making their decision to decline the use of AR

"I might be willing to try once more, so I am sure I did everything possible, but not more than that" (28 year old woman waiting for the pregnancy test results, suspecting it will be negative and thinking about what to do next, Clinic 2)

"It can't be said that I didn't try...I have always thought that the worst thing one can do is not try at all, and I have tried for eight years...I just realised that two days ago, on my birthday, it has been eight years since I first got here, and nothing has happened, no IVF no AI only studies and more studies...money and more money." (Woman, eight years trying, Clinic 2)

For those undergoing AR, these procedures are not only the path towards the desired child, they are the painful sacrifice they endure hoping for a child. They encompass great disruption of their daily activities, re-signification of sexual intercourse, reassignment of home chores, invasion of their private lives, private acts and private body parts, the exclusion of men from the reproductive process, a set of technoscientific apparatus and actions that they either have to learn to understand or go through in ignorance; they are what doctors do, they are experiences that will make them better or will destroy them and their relationships, they are complex words, terms, measurements and percentages that tend to make little sense to the majority, they are science that needs God's blessing for its success.

People reevaluated and decided which option to use when they were confronted with unsuccessful treatments and new options were offered to them. They arranged the different AR options in a spectrum in which they used the 'natural' reproductive method, which entails coitus, pregnancy and giving birth, and also establishes a biogenetic relationship between parent and child, as the primary reference point (cf Turner and Nachtigall, 2010). However, not everyone had the same arrangement within this order. Although lower complexity techniques (e.g. hormone therapy or AI) were commonly more easily accepted, when it came to high complexity techniques, particularly when related to gamete or embryo donations or surrogacy, the order of acceptance was not so homogenous. And so, I think a more in depth qualitative and quantitative study looking at the degree of acceptance of gamete donation, embryo donation, surrogacy and adoption would be useful when policy making, because it would provide some information about Mexicans' attitudes towards genetic, biological, and social ties.

Through the ethnographic work at the clinics and the content of the on-line forums and the media, it became evident that as patients experienced repeated unsuccessful cycles, visited different doctors and received different diagnosis, the acceptance of higher complexity techniques changed. What used to be inconceivable at a certain point could turn into the only option: "At this stage I would not accept ova-donation, adoption nor surrogacy. I am still fertile, my ova are OK and I want to keep on trying...maybe if all the procedures fail I might think about it differently" (34 year old woman, 1 year trying, Clinic 1). A male AR user clearly explained this point: "Those

[surrogacy and adoption] are stages 9 and 10, and currently I am in stage 1 [HAI]" (37 year old man, 3 years trying, Clinic 1). He considered that because each procedure was different, each one implied different things, and they needed to be evaluated on their due time, not before. This idea is also present in the following quote: "I have not thought about it [surrogacy] yet because I trust that I will be able to achieve it. I think it must be much more difficult than ova donation, this has already been difficult for me" (44 year old woman, 13 years trying, Clinic 1). Other AR users shared the awareness that their opinions could change as procedures failed. One woman, for example, when asked about other AR options said: "right now I would not do any of these, for the time being I say no" (36 year old woman, 12 years trying, Clinic 2).

As patients moved along their spectrum of AR technologies, new issues had to be considered. Individuals and couples had to evaluate the importance and maybe even give new meaning to certain matters: genetic and biological links with the child, resemblance issues, feelings of belonging, of going through pregnancy and giving birth. On this matter one couple said:

"We would use gamete donation if it were the last option, and embryo donation only if they came from someone in our family, so there can be a blood tie" (Couple, she is 29 and he is 31, 7 years trying, Clinic 1)

"I would use gamete donation if it came from our family, if the sperm were from my husband's twin brother, so they have the same genes. I would use a surrogate but I am not sure if I would use donated embryos, maybe if it were the last option I would. If the treatment does not work, I would adopt" (31 year old woman, 3 years trying, Clinic 1)

People commonly tended to value genetic connection highly, yet not all genetic connections were regarded equally. The woman in the second quote placed her husband's connection above hers, and she valued this connection more than the process of being pregnant and giving birth; hence she would accept surrogacy but not embryo donation. Another couple I spoke to, however, decided to use donated embryos instead of using either donated sperm or donated ova; this way both would be in equal circumstances in terms of genetic link with the baby.

"Frequently not even the grandmothers notice it, in more than one occasion they have come up to me and told me how much the baby looks like their son or daughter when they were babies" (Doctor at patient-oriented conference).

As presented in the above quote, it is common for doctors to present the conflict of resemblance when using donated gametes as being minimal. Another example of this is the following post from an electronic forum regarding the meaning of motherhood and its relationship with the way they become mothers. In this post, the process of negotiating which procedure to accept and how this changes with time and

accumulated unsuccessful cycles is clearly depicted. Re-signification of the term mother is also evident here; from it being a biogenetic and social relationship, it moves to being only a social one, yet it stresses that it can be just as strong.

“Everyone at AMI knows my situation and all the treatments that I have gone through...at the beginning I said NO TO ADOPTION...after six years of trying every treatment: IVF, sperm donations, embryo donation, herbal teas from the Juarez Market...we have considered renting a womb in the USA...you can't imagine what I would give to have a baby in my arms, to carry it, to kiss it. It doesn't matter if it is born out of me, if it has the sperm and ova of another couple, if the sperm is from a donor...come as it may, but I want to have a BABY IN MY ARMS and not necessarily in my womb...I think that MOTHER IS WHO RAISES YOU, WHO EDUCATES YOU, WHO LOVES YOU...and not necessarily who carries you in her womb...surrogate mothers are women who simply are the oven in which the cake is baked and you pay them to have them grow your baby in their womb...so by whichever method, the objective we all have is TO HAVE A BABY IN OUR ARMS TO KISS, TAKE CARE OF AND TO HAVE HIM UTTER THE WORD MOM. WHICHEVER PATH YOUR BABY TAKES TO ARRIVE IS NOT BETTER NOR WORST...OVA DONATION, SPERM DONATION, EMBRYO DONATION, INSEMINATION, IN VITRO, ADOPTION, SURROGATE...ETC...and yes, it will not have your eyes, but it will have your gaze” [Forum post, emphasis in the original]

These quotes also reveal how, for some people, remaining childless is unacceptable; *“if it were the last option I would use donation or surrogacy”*, because no genetic link and no biological link is better than no child at all (see also Turner and Nachtigall, 2010). However, adoption also requires great consideration. According to some of the women I interviewed, part of the process of deciding for adoption implied having to consider the reactions of their partners, their families, and their social circle. For example, some of the women who were comfortable with adopting, were discouraged from doing so because their husband's families openly stated that they would not see the adopted child as part of their family. This idea was also depicted in the TV programme (see scene 19). These women then had to consider what that would imply for the future life of their child. In other cases, it was the partner's fears of not knowing where the child ‘came from’. As one woman put it: “I would like to adopt but my husband does not want to because he says that one can never know where the child came from or if it is healthy or ill” (30 year old woman, 5 years trying, Clinic 2). This ‘came from’ referred to the child's past in the sense of its genetic baggage, pregnancy, birth, and its first days, which were considered important elements in the child's mental and physical health and development. Yet in other cases, couples referred to negative experiences other people they knew had gone through with adopted children. These ranged from direct problems with the child to problems with the biological family trying to take the adopted child away. These fears could be fed by the particular way adoption is offered.

In Mexico, there are two legal ways of adopting: through simple adoption and through full adoption (Pérez-Contreras, 2004). In simple adoption, the adopted child does not

cut ties with his extended biological family, he or she keeps his or her original surname and can add it to the surname of his or her adoptive parents and the child can ask the biological extended family for support and help (i.e. food). The ties with the adoptive family only reach as far as the parents and siblings, leaving the extended family out of the relationship. The adoption is not permanent, this means that, in certain circumstances, the child can be taken away and the adoption revoked. Under the full adoption scheme the adopted child cuts all ties with the biological family, drops the last name, has no contact with this family and is given the adoptive family's surname, establishes legal family ties with the entire family, nuclear and extended, and the adoption is permanent, hence it can never be revoked. In the past 10 years the status of simple adoption was eliminated in Mexico City, but not so in the rest of the country. This situation, in addition to the long bureaucratic processes adoption entails, the fears of the child not being accepted by the family and the concerns as to how the child 'will turn out', may influence the low acceptance rate of adoption in Mexico.

As the coverage of AR in the media increased, presenting AR as a viable option, adoption was pushed even further away from the realm of acceptance. According to the media, "IVF has revolutionised the way we perceive sterility...[it] is no longer a social taboo nor a divine curse, it can be treated scientifically" (AFP, 2008), AR has made "infertility problems seem to be something of the past" (Clara, 2007) for which adoption is no longer the only solution. "ART represents hope for thousands of couples who are having problems getting pregnant" (Sarmina, 2008) almost regardless of the reason why they cannot conceive. "90% of the cases have a solution with ART" (Tu Fertilidad, 2008), be it due to male, female or combined infertility, due to genetic issues, or genetic diseases that want to be avoided. "As long as a woman has a uterus, she can achieve pregnancy, even if she is in menopause, and with the technique we offer, 80% of the couples reach pregnancy in only 40 days" (Rivera, 2008). We also help "those women who, due to their own decision or due to something out of their control, pass the 35-40 year barrier," (ADN, 2007), as well as those single women that are "defying stereotypes" (Pérez-Stadelmann, 2006) and need gamete donation or surrogacy.

The issue with adoption resembles some of the issues with using AR. Those who decide to embark on this journey eventually end up having to find ways of juggling many different elements, among them: religion and their families.

Juggling AR

“At first, my husband was not in favour of this. He believed that if God wanted us to have children he would give us one, if he didn’t then we would not have one. But I believe that one must look out for oneself and God will help, as they say: ‘help yourself and God will help you’. He used to say it was not natural, that it was artificial, fake. But then I spoke to a female doctor friend of ours and she told me how to explain all this to him, which I did, and then he was a bit more comfortable with the issue. However, if we do end up having a child with IVF, he doesn’t want anybody to know. ‘You just tell them we are coming for treatment but not for *this* one in particular. I think he has a problem with it because he believes that people will think he is impotent or something...I believe it is simply another way of having children” (Female patient, emphasis in the original)

“Her mother doesn’t believe in AR she says that one should have “only the children that god sends you”. (Male patient)

As depicted in these quotes, juggling AR also means having to rearrange ones ideas and beliefs regarding science and religion, and having to rearrange the boundaries between private and public life.

The majority of the people I interviewed were either Catholic or Protestant, although some underlined that they thought of themselves as non practicing. How do they deal with the disapproval the institution of the Christian faith has against the use of AR? The people that come to a clinic have already decided (consciously or unconsciously) that they will use AR, although it is important to note that in many cases users are not fully informed of the way AR works hence of the moral conundrums these procedures may imply. Those who do, however, have found ways to rearrange their relationship with their religious beliefs so the use of these services can fit into their religious discourse. For example, one couple explained to me that they went to see their priest and that he told them not to worry, that he had consulted the Vatican about their case and the Vatican responded that it was okay for them as long as it was done out of love.

Users believe God can interfere in the procedure, and so they pray He will help them. They say that ‘the last word is given by God’, and that ‘if God wants’ then the procedure will be successful. Nevertheless, some people do see their faith questioned when failure is constant, but when they come back for a new cycle, they say they have reaffirmed faith and that God will help them. Frequently, people said that:

“We must trust and have faith in God...Faith is what you must have in front of adversity... I believe in God and I know that it is God’s wishes that count”. (31 year old man, 7 years trying, Clinic 1)

“To conceive there are three factors needed: the male, the female and the divine, the doctors are the medium” (35 year old woman, 8 years trying, Clinic 2)

Others trusted that what happened to them was sent by God because He knew they could handle these difficult tasks:

“I trust God with his knowledge and I know that if He is proceeding this way there is a reason for it. He did not bless us with one child, which was what I had in the previous pregnancy, but with three....I know that God will give us the wisdom to handle this situation. If he blessed us with three children it is because he believes we can handle them.” (Woman, 6 years trying, Clinic 1)

Doctors, nurses and biologists also had to confront their actions with their own ideas about God, particularly since in this case, their actions go far beyond life saving practices or palliative care. It was common that, after having inseminated or transferred embryos, doctors told their patients that “now it is up to God to finish up the job” (Female Doctor). Furthermore, doctors also found ways of helping the different religions to be more conformable with the use of AR. For example, the director of one of the clinics mentioned that since there was a Jewish population seeking services at his clinic, he decided to organise talks with Rabbis to explain AR to them, and told them they were always welcomed to come and supervise the procedure.

Although God and nature frequently appeared on the same side of the discourse, science was depicted as being capable of going beyond nature, but not beyond God (as mentioned in the previous chapter). At the end, whether science's manipulations worked or not was up to God's will. It is interesting to note that, in the press there was little mention of the relationship between Church and AR. In fact, one of the newspapers I analysed never mentioned the opposition of the Church's against using AR. The few cases in which the Church appeared in conjunction with AR in the media were discussions about abortion not related to AR.

In addition to dealing with the religious issues, people had to deal with the social issue of disclosure (Becker et al. 2005): How to socialise the use of AR? Who to tell and how to handle the reactions of different members in the family and the social circle?

Scene 30. Roberta and her sister discussing

Roberta's sister: “You can't be so selfish as to put my mom's life on the line just so you can have children”

Roberta agrees to call the plan off, she will no longer allow her mother to be her surrogate

In the TV programme Roberta and her mother had to deal with the family's initial negative reaction towards the mother's offer to be Roberta's surrogate. Commonly, people using AR find themselves debating about who to tell and what to tell them

regarding their treatments. Among the people I spoke to, there were no unified answers. Some people told their family, friends or co-workers for practical reasons, others for support. Some withheld the information with the argument of privacy or fear of criticism. Others told only parts of the story to certain members within their social circle. In general, the decision about who to tell depended on the nature of the procedure they were using, the areas and degrees in which using AR disrupted their daily activities, since they needed people's support and understanding in order to juggle responsibilities and treatment. It also depended on the relationship patients had with their family and friends, on the characteristics of their families, on how they expected them to react, and finally, on what point of their journey they were at.

There was more consensus when it came to telling their child about the use of AR. Contrary to what has been found in other countries (Becker et al. 2005), AR users in Mexico often said that when the time came, they would tell their child how it was conceived. Some argued that it was better if they told them, than if they found out later on in their lives, 'because one always finds out about these things'. Others wanted to tell them so they would know that, regardless of their genetic origin, they were their children: "When the time comes I will give them my diary so they can know that they are our children, regardless of the fact that they were conceived using donated embryos" (Female 8 years trying, pregnant after embryo donation, Clinic 1). Yet others stressed the fact that they wanted their children to realise how much they had gone through to conceive them, that they wanted a child so badly that they had to sacrifice a lot for him or her to be born. This last argument echoes the idea that women have to make sacrifices for their children and their husbands, since, by engaging in AR they are already becoming loving mothers. However, it would be interesting to conduct a follow up study to see if 'the right time' ever comes, if they do in fact tell their children how they were conceived and how much of the story is actually told (do they disclose on that they used AR or do they also specify the use of gamete or embryo donation and surrogacy).

When AR users talk about their experiences with their family and friends and when they tell their children about their conception and birth, they are participating in the process of normalising AR. By talking about it, the taboo and stigma that used to surround infertility slowly dissipates. As repeatedly stated throughout, AR's establishing process has been very dynamic in the past ten years. When this study began, talking about AR in public was still only a whisper, rising in volume and frequency, but still a whisper. As years went by, this whisper turned into a sound and clear voice. This was evident in the media, which depicted AR as having been used by many people, placing it as a viable and accepted solution to infertility:

“...a daily practice among certain sectors of the population” (Sandoval, 2001).

“Last year, IECH did 324 cycles of AR and served more than 1000 couples with fertility problems...AGN did between 400 and 500 cycles and has served more than 1200 couples” (Ruano, 2002).

“More than one million babies have been born from AR worldwide...infertility will duplicate in the next decade because people are postponing pregnancy, and this will lead to an increase in STD” (Ojanguren, 2006).

The whisper also came from individuals somewhat related to AR, who openly talked about their experiences and concerns regarding AR, in public spaces. For example, during one undergraduate class in which biotechnologies were being discussed, one student raised his hand and told the class that his mother had in fact hired a surrogate in order to have a child with her new husband. What was surprising was that not a single student turned around with surprise nor did anybody raise eyebrow. When this point was explored, the general comment was ‘well, it isn’t that rare anymore’. Another example took place one night at a pub: three young men were exchanging their views and opinions about being, as they called themselves, ‘turkey baster’⁴ children of lesbian couples. However, in spite of having more people than before sharing their experiences and opinions, and the increased media coverage sending out the message that AR is commonly used, people still embark on this pilgrimage with very little information. Nevertheless, they are pioneers and some are laying the ground for future travellers, so that they have a smoother journey. In the next chapter I explore these efforts in detail. First I will look at the particular kind of information and support AR users need, then I will present the history of support groups and the different activities carried out by them as well as those carried out by clinics in order to offer information to current and prospective AR users, and I close the chapter with an overall discussion.

Discussion

A pilgrimage implies travelling a considerable amount of time and distance, sometimes with a set goal others without such a clear destination. In this chapter, I present the pilgrimage AR users take on in search of a doctor, a clinic and a procedure that will help them achieve the so desired child. I explored the way infertility, AR and the service providers are seen by patients, how they make sense of their situation (as infertile and in need of AR) and which actions they take accordingly. The people encountered in this study resemble Chaucer’s pilgrims, they were men, women and couples who came from very different backgrounds, locations, and socioeconomic levels; yet they all shared a common goal: becoming parents. Having children, or as some informants put it ‘becoming a family’, was central to their life

⁴ This is the colloquial expression used to indicate home artificial insemination

project. For some it was central to their identity, or it was a life long dream, for others it was a requirement for their inclusion in certain social circles (e.g. family, marriage) and made them worthy of certain things (e.g. inheritance). Upon closer examination, I discovered that these pilgrims had more things in common than only the desire for a child. They were among the first to set off on this journey, most of them shared a long list of doctors, clinics and procedures they had tried, and failed cycles they had faced; it became evident that they had been travelling for quite some time. Along their journey, they built a body of knowledge and meaning regarding infertility and AR, and found ways to deal with and give solution to all sorts of aspects and issues of life that become disrupted due to the use of AR (economic, emotional, religious, social, practical, etc.).

Viewed in a general way, there are at least three important questions AR users have to think about: what procedure to accept, how long to try for, and who to tell. The answer to these questions is in turn influenced by the reason for desiring a child and the link they feel to be the most important to preserve (social, genetic, gestational), their understanding of infertility and AR, and the amount of time they have spent in their journey through AR. Above all, what was constant in all the cases I observed was that the answer to these questions is not unanimous among patients nor are they static, answers change as time goes by. Patients' views and opinions can radically change when faced with new situations or when past options die out.

The process by which people decided upon which AR procedure to use is complex and not fully studied here, yet some things did become evident. The first thing was the role that diagnosis played. Although in general there was very little clarity in terms of the label patients acquired (since it frequently changed from clinic to clinic) and patients would sometimes accommodate the diagnosis to fit their desires or needs, as did some clinicians as well, the fact is that at the end of the day patients wanted a diagnosis to find out if and how they were going to become parents. The same thing happened with the AR procedures, usually they did not understand the technique that they were going to have to undergo, but this was not as important as knowing that they would become parents. As one lady told me "I don't really understand [the procedure] but they told me that they would make me get pregnant here, that is what matters".

Among patients, infertility has not fully taken the status of disease but it is seen as a life disrupting problem for which AR is the solution. Patients tend to see doctors as the possessors of the knowledge that will grant them their desired child, as professionals capable of materialising their desires to become parents through the enactment of the complicated and somewhat incomprehensible AR procedures. The

different AR procedures are categorised in terms of their similarity to non-assisted reproduction, from less complex to more complex, from those which maintain the entire biological link to those which dismember it, in which case users must sacrifice some part of the biological link (either the genetic aspect or the gestational one). When people decide to use complex AR techniques in which either the gestational or the genetic link with their future offspring will be broken, they tend to find ways of compensating the lost link by stressing that remaining.

What also became evident was that the socialisation process had very practical angles to it. If people needed help with practical matters (work, house chores, or other responsibilities) it was common for them to share, at least part of their infertility-AR experiences with family, friends or co-workers, in order to explain and justify their lack of attention to their responsibilities. Another reason for socialising the experience was their search of emotional support.

The decision to stop trying to conceive was one of the most difficult for them to take, particularly because of the way AR is framed, as a constantly evolving technology with constant discoveries that could mean that the next cycle will be the successful one. Therefore it was common to hear people place the responsibility of deciding when to stop on a third party: the institution, the doctor or their economy.

The availability and use of these procedures has had two interesting possible effects that I would like to point out. The first is that AR might be pushing adoption further away from the spectrum of possible ways of becoming parents. As in other areas of life, social solutions to problems are slowly being supplanted by biotechnological solutions; in other words: adoption is being supplanted by AR. The second is that AR, by taking the reproductive process to various elements (gamete production, fertilisation) and creating new processes (different ways of artificially fertilising gametes, embryo transfer) which no longer take place within the female body, has opened the possibility of including men in the reproductive arena, not only as the sperm provider but as an active member. Until now service providers have not invited or accepted men into the procedures (inseminations and embryo transfers), yet if they did this could modify gender roles in relation to reproduction. In general be more participative (invite the man into the labour room and have him cut the umbilical cord)

The treatment routine, as well as the interaction between patients, their doctors and the treatment, takes place also outside the consultation context. For example, patients are expected to call the clinic, hours after their blood tests, in order to see if there are any adjustments to their drug dosages and they are expected to follow a schedule of drug intake. They (and or their partners) are taught to prepare the drugs,

calibrate the pens, and to apply the injections. Likewise, there are other moments of AR that take place away from the presence of the patient and the doctor, these are the moments that take place at the laboratories, in which gametes and embryos are being manipulated. Therefore, only looking at what happens in the public spaces (i.e. clinics, conferences and support group activities), or at what happens in the laboratories, is actually only looking at part of the journey. This point should be taken into account both when deriving conclusions as well as for future research.

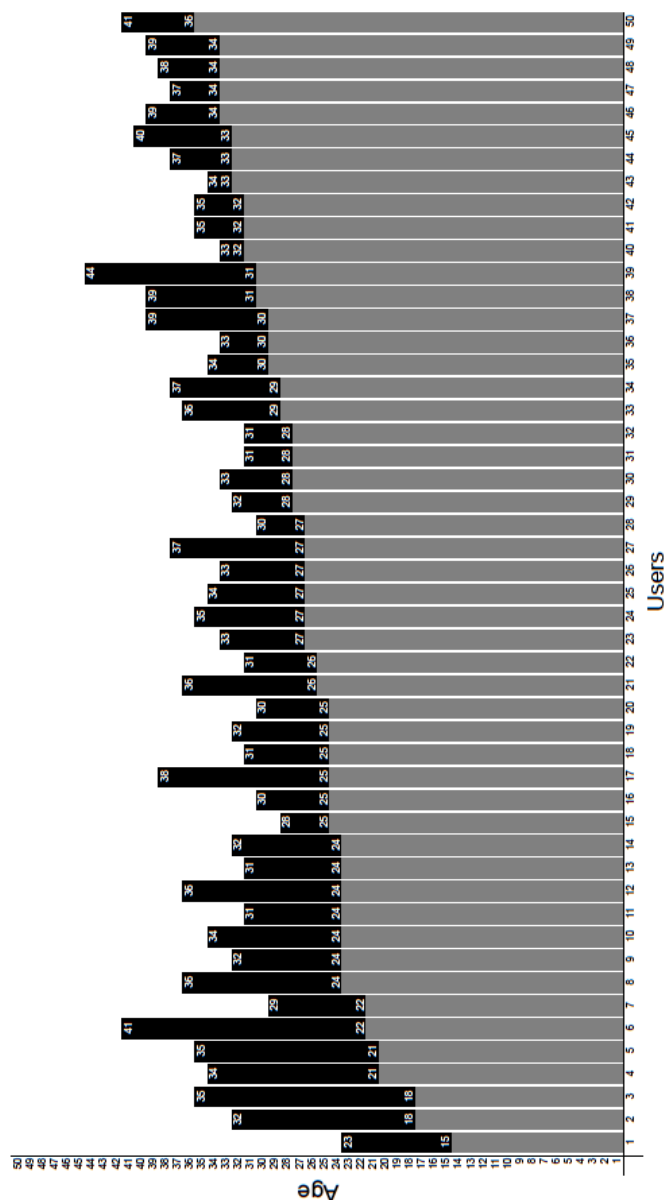
As mentioned in the previous chapter, 'the age factor' was depicted as one of the main causes for female infertility, which in itself represents at least 40% of the cases. However, a closer look at the data presented in the few studies available sheds a slightly different image. In table 7, I have graphed the age at which women reported to have started to try to get pregnant (the lower number) and the age at which they were when they participated in the study (the higher number). For this graph I incorporated the information presented in the articles published by Castañeda-Jiménez and Bustos-López (2001) and Carreno-Meléndez et al. (1996), in addition to the information I gathered with my interviews. Seeking pregnancy does not necessarily mean seeking professional help; usually, by 'seeking pregnancy' patients meant that they were consciously trying to have children through sex. Some began looking for help very soon after they realised that they were not getting pregnant while others took longer. As stated at the beginning of this chapter, it took a considerable amount of time for women to reach the AR specialist. As becomes clear in the graph, there is a difference between these ages. Although many of the patients were between 31 and 37 years of age when they were at the clinics, they were actually between 24 and 28 when they began trying to conceive. This not only means that, in average, they have spent seven years in this pilgrimage, but it also suggests that 'the age factor' might not be the cause for their infertility.

Women and men go about trying to find ways to deal with and give solution to all sorts of aspects and issues of life that become disrupted due to the use of AR (economic, emotional, religious, social, practical, etc.). The first thing they realise when they begin the pilgrimage through AR is that they are entering into an unknown world. Recently, however, different support and information endeavours have emerged on behalf of AR users precisely as a response to a general the lack of information. In the following chapter I explore the different spaces in which AR users look for support and information. The different support groups, and patient oriented events all played the role of agoras⁵ in which people gave and received information, hope, guidance and empathy. On the one hand, these groups offered, aid when dealing with the emotional issues, and on the other, they provided spaces in which

⁵ In ancient Greece agoras were public open spaces in which assemblies and markets were held.

knowledge was constructed and communicated, spaces for the negotiation and socialisation of conceptual, practical, social and ethical aspects regarding AR. They acted like mirrors in which current or potential AR users, as well as service providers, could see themselves reflected in others who have also embarked in this journey. In the next chapter I explore the way users and service providers acquire new tools to engage and deal with AR.

Table 7
Age at which women started to try to conceive



The lower age is when women state they started to try to conceive while the higher age is when they were surveyed at the different AR services.

The Quest in Search of Information & Support

Introduction

Sitting under a tree, having coffee, the woman told me “I know that with information their journey can be shorter, but above all, less torturous, this is why I am doing all this.” The woman was referring to *Expo Fertilidad*, an event she has organised the last three years at the World Trade Centre in Mexico City. In events such as this one as well as others I will describe in this chapter, people facing infertility can get information about what this is, the possible ways of treating it - or at least bypassing it - and about the clinics that offer these services. However, attending these events is not the only way people acquire information. They also ask other people going through the same journey, they visit websites and on-line forums, read magazines, newspaper articles, listen to radio programmes, watch television shows and of course, they ask their health professionals. They do all this because people facing infertility and undergoing AR have a lack of information. There are no social myths or cultural references to guide them through the journey. The patient-doctor relationship has been so worn out, so transformed by the effects of health commercialisation, legalisation and bureaucratisation, that patients leave consultation full of doubts, uncertainty, unsure of what to expect. In this chapter I will follow the AR users in their quest for information. First, I will explore the characteristics of the patient-physician relationship within the AR context, then I will describe the different groups and activities that have emerged with the purpose of offering information and support to AR patients. I start by analysing the informal spontaneous support group that emerged in one particular clinical setting, then I look at a more formal version of support within the on-line forums, moving on to more institutionalised ways of how information and support are offered in patient oriented conferences and exhibits.

Patient-Physician Relationship: Information & Consent

Theoretically, in all health related situations, patients should receive, information about their health condition, the treatment and the possible side effects from their physician (Ramos-Ramos et al., 2008). The case of AR should be no different. In fact, within AR, the aspect of informing the patient and obtaining their consent is of much importance, due particularly to the possible involvement of third parties, the handling of gametes, and the production of surplus embryos (Karchmer, 2004). Although certain professional bodies have tried to establish standards as to what and how information should be presented in order to obtain the patient's consent, this still varies a great deal between AR services.

As in other areas of healthcare in Mexico, there are few studies focusing on the social aspects of the patient-physician relationship, and in particular on the degree, type and way of informing the patient about his or her health condition and treatment plan. One of the few existing studies was carried out by Howard Waitzkin and his colleagues at a public healthcare institution in Oaxaca between 1988 and 1990. They found that, among the population they researched, a “formal consent form for practitioners and patients would be culturally inappropriate, because of several reasons: research rarely was performed in these practice settings, consent forms were not used routinely in Mexico, and neither practitioners nor patients would feel comfortable in signing a legal-appearing document” (Waitzkin et al., 1996:644). However, my experience with AR patients in Mexico City was slightly different. First, as opposed to the situation in Oaxaca, people at the public AR service in which I did observations were well aware that there would be students and people doing research and that they would be present during their consultations and the various procedures. However, this does not necessarily mean that they were frequently asked to sign consent forms for these studies. Although, as indicated by Waitzkin and his colleagues, people at both AR services I attended might not have been used to signing ‘legal-appearing documents’ regarding healthcare treatments, and they might not have been fully aware of what a consent form should say, when presented with it, they responded positively. This difference might respond to the different locations of each study and to the twenty years difference between them. Since Waitzkin’s study, there has been a considerable degree of increase in the insertion of the legal discourse within the medical realm. In fact, although there is evidence that the use of consent forms within the broad spectrum of biomedical practice in Mexico is still very poor (see Ramos-Ramos et al., 2008), when used, it frequently responds more to fear of legal lawsuits, than to the idea that the patient has the right to know the characteristics of the medical procedure he or she is being subject to (see for example the emphasis given to the legal aspects in Karchmer, 2004). This is particularly true for cases of AR where there is no legal framework to protect doctors or patients from abuses. Finally, in my experience within AR services, patients tended to appreciate when the researcher or healthcare provider offered verbal information and allocated time to answer questions when giving them the consent form, since they experienced this as a sign of care, respect and attention.

At the private AR service, patients received the consent form usually during the first consultation encounters, when the protocol to be followed had already started. The forms were given out either by the residents, the nurse and sometimes by the biologist. The format resembled that of a contract where the responsibility of each actor was clearly delimited (e.g patients must inform the clinic what they want to do in case of untransferred embryos) and prices and paying timetables were written, yet

the explanation of the procedures, the risks they entail, and the clinic's success rates were not given. These issues were, to a certain extent, verbally communicated to the patient throughout the various consultations previous to ova aspiration and embryo transfer. The depth and degree of detail in the exchange of information depended on what and how much the patient was asking. At the public service consent forms were given during the general information session organised once a group of patients had been sorted into a cohort and their cycles synchronised. At this event, patients were introduced to the biomedical staff that would treat them, they were told about the medical aspects of AR, and given the documents they would use throughout the cycle, including the consent form. This event resembled a conference talk: it was given in a conference hall, with different speakers (most of whom were residents) using power point presentations with technical terminology and hightech imagery, yet with very little, if any, time for questions from the audience. The content of the consent form mostly regarded the scientific explanation of what AR entails, offering the names of the hormones, the body parts, and general success rates. The document was an adapted version of the informed consent document produced by RedLARA in 2001. Some words were substituted with synonyms commonly used in Mexico, a few elements of the protocols were also slightly modified (e.g. when to start taking the drugs, for how long and what day of the cycle to have the pregnancy test); certain percentages and rates were also adjusted in order to reflect this particular service's results (e.g. the percentage of ova that do not fertilise is said to be 1% in RedLARA's document while in this clinic's document it says it is between 5 and 10%), and the section dedicated to untransferred embryos is omitted since at that particular clinic cryopreserving embryos is not usually done. What happened with the remaining embryos after embryo transfer was not discussed; when I heard patients ask their doctors about their untransferred embryos, they usually answered that none were left. In spite of the consent forms and the information sessions, many AR users feel they lack information (Castañeda-Jiménez, et al. 2001).

"I would like someone to be my guide...I have heard other women's pilgrimage stories involving bad doctors, bad treatments, emotional and economic wear off... these are horror stories...I can only think 'My God where have I fallen into?'...I am new in this world and I feel very alone; although my husband supports me in everything, we want to try to avoid all the slips that you have talked about, so if someone can help me and be my guide I would be forever grateful." (Online Forum, Posted 03.09)

"When it comes to infertility, what you don't know might cause you harm" (On-line Forum Post)

"When you start your first cycle, one usually knows almost nothing regarding infertility and the procedures. But with every cycle one learns a little. Now I can recognise that the previous doctor was not as good...the lab is very important, so is the doctor, it is a combination of both. But in Tampico for example clinics don't have freezers, so if the cycle fails you have to start all over again, there is no way of preserving the embryos for future use" (35 years old woman, 10 cycles of AI, Clinic 1)

“In the last two decades, reproductive technologies have advanced greatly and frequently these advances escape human capacity to decide. We have not heard our grandmothers say ‘I am having two thawed embryos transferred tomorrow’; it is something for which we do not have familiar antecedents. And then, when we listen to all the technical terms, we don’t have the scientific knowledge to understand them...Assisted reproduction can be confusing, and it fills us with uncertainty and doubts” (Psychologist at the market like event).

As suggested in these quotes, the term ‘information’ can stand for many things: data, facts, figures and statistics, as well as for advice, guidance, direction, counselling and enlightenment. Within the infertility-AR context, all these kinds of information are needed and are sought after. As seen throughout this chapter, there is need for information regarding doctors, clinics, the different procedures available, their success rates, and their technoscientific details. There is need for practical information, concerning what patients can and cannot do prior, during and post treatment, when they will be required to be at the clinic and for how long; and regarding economic issues, such as what the cost will be and the kind of payment. There is also need for information regarding the body, such as the causes for infertility, if the procedures will produce any pain and which are the secondary effects users should expect. Likewise, there is need for information regarding the socialisation of infertility and the procedure, such as who to tell and how much to share; or information patients might need to solve ethical and legal dilemmas, like knowing what to do with untransferred embryos, issues regarding gamete donation or surrogacy. Some of these kinds of information require facts and figures, while others require data or details, and yet others require guidance and counselling. These different types of information make up a complex whole which one single actor could never offer in its entirety, therefore patients usually turn to a variety of sources to get as much information as possible. Actually, users at the clinic liked receiving different types of information from different sources since each source was seen to have a different area of expertise. While doctors were trusted with the biomedical information, they mostly relied on fellow patients for experiential, emotional and ethical matters.

The lack of information responds to different situations. Problems with biomedical information were usually related to issues within the patient-physician relationship and to the level of medical literacy patients had (e.g. recognising good information and understanding it). The absence of sociocultural references, on the other hand, was related to the novelty of these procedures within the Mexican context. People currently between 20 and 40 years old are the first generation to use AR, the first to travel this path, the first to face the practical, emotional, social, ethical and other type of dilemmas resulting from undergoing AR; therefore, there are no previous historical cultural reference as to how to deal with the different issues that continuously come

out. When these first AR users begin their journey through AR, with little information regarding the biomedical, practical and socioemotional aspects these procedures entail, they frequently find themselves feeling lost and in need of guidance. Often, these first AR users conceal some of the information due to fear of being judged (Cousineau & Domar; 2007), of having their child rejected by those who find out about its conception, or they must do so because otherwise they can have problems with their health insurance.

When people face life crises, infertility for example, they tend to need support. However, in some cases their existing support system (e.g. partner, family or friends) breaks down or fails to offer the required support, either because they lack the necessary tools or because they too are involved in the problem, as happens with couples facing infertility and AR. In these cases, people have to search for support and guidance elsewhere (Gottlieb, 1985), be it support groups, on-line forums, psychotherapists, or any other form of emotional support endeavour (Hitch et al. 1994). Other “stressful life events” (Gottlieb, 1985:18) that lead to changes in people’s social circles are common to society and have taken place in every family for centuries past (e.g. divorce, death or the birth of a child); however AR is quite new. As noted in the following quote, there are very few social references as to how to deal with these issues:

“Little is said about the people who suffer infertility, about the emotional conflicts, the problems faced within the couple, with family and friends; about the difficulties of living in a society that little knows about this ailment and understands it even less; about the great pressure that the treatments entail and, in sum, about experiencing infertility” (on-line post)

The women interviewed suggested that the lack of information poses considerable negative effects on the journey through AR. However, with the necessary information and proper guidance, they believe people could travel this long and intricate journey in a much “less torturous” way (Organiser of Expo Fertilidad, 2008); this has motivated them to embark on an information quest and has motivated others to offer the needed information (see the books written by former AR users De la Graza, 2008 and Martinez Jover, 2004; and by the psychologists Tame, 2007). Some pioneer AR users have established support groups and organised information events in which new AR users meet with qualified physicians, specialised clinics and former and current AR users. In these support endeavours, new AR users obtain biomedical information as well as practical and emotional guidance. They listen to the experiences of fellow patients, which is viewed as equally relevant to help guide new patients in their processes. These support efforts offer “a mosaic of life testimonies, of diverse answers and reactions to difficult circumstances...and an array of options and

experiences to learn from” (online forum) and this can give people the necessary information to help them better live the process of infertility and AR.

Based on the assumption that what current users and health professionals think of infertility and of AR, and the social reactions they spark off, will all influence the social references, in the following chapter I look at the activities carried out by support groups and clinics, focusing on the effects they have and have had on the buildup of the social references with which future users will deal with AR.

An Informal Spontaneous Support Group

At the public clinic, an informal spontaneous support group emerged as a response to patients’ needs for emotional and practical support as well as information. On occasions, clinical settings act as therapeutic environments and foster the emergence of spontaneous informal support groups, particularly in cases in which patients are facing issues for which they lack the social and cultural references to guide their dealing with them, as is the case with infertility and AR. In this particular case, the need for support and information, a weak patient-physician relationship, in addition to the service’s structure, the physical characteristics of the clinic, and the treatment requirements, were all factors that resulted in the emergence of this spontaneous support group.

At a macro-level, AR services are structured according to the healthcare system they are part of since their regulations will shape the way the service operates, for example, in terms of the admittance process, patient organisation and who attends patients. Within the private sector, patients simply call the doctor’s office or the AR clinic they have chosen and make an appointment, if they have the means to pay for the service, as soon as they attend their first consultation they start the diagnosis procedure and the treatment protocol. Patients who seek help at these clinics expect to be seen by the doctor with whom they made the appointment and do not appreciate when other doctors or residents are sent to see them or attend their calls. The work related and public AR services, however, operate quite differently. Since these usually have limited resources and they are part of a much broader healthcare system, applying and being admitted to the service takes time, is bureaucratic and not everyone is accepted. Those patients who wanted to be attended in the public AR service had to demonstrate that they were not eligible for other healthcare schemes, that they were under 35 and in a stable heterosexual relationship. Once this first filter was surpassed, they were evaluated to determine their socioeconomic level, since they were charged accordingly. Then they began the long process of being diagnosed. Both men and women were tested and seen by different doctors from

several departments (e.g. infertility, andrology, psychology, nutrition). Patients were usually given hormone therapy, vitamin supplements, urged to lose weight, and in many cases, they were scheduled for surgery (e.g. to remove traces of endometriosis) with the purpose of trying to help them get pregnant without the need of AI, IVF or ICSI. Only when all this had proven unsuccessful were they referred to the AR service. The entire process -from being registered at the hospital to the point of being referred to the AR service- generally took between two and four years although in some cases it took up to seven. This long and difficult journey made patients feel that finally being sent to the AR service made achieving pregnancy that much closer. They viewed it as reaching the last stretch of the journey. This feeling that achieving pregnancy was closer was also supported by the belief (constantly reinforced in the media) that IVF was more successful than AI (cf. Castañeda-Jiménez, et al., 2001).

AR procedures, in general, demand the orchestration of specific activities at specific moments, and require specialised equipment and personnel, as well as expensive perishable goods, so all healthcare services that offer them need to find ways of adapting the procedures' requirements in order to have the services be more functional and efficient. One way clinics achieved this was by organising patients. For example, AR procedures require regular ultrasounds and blood monitoring in order to control ovarian stimulation, predict ovulation, and thus manage drug dosages, so AR clinics tend to schedule patients within a designated time slot only for patients undergoing ovarian stimulation, usually early in the morning (between 8 and 10 am). This way, the blood sample results can be ready by 2 pm, giving time for dosage adjustments. At the public AR service, in addition to this, patients were also organised in cohorts, with their menstrual cycles artificially synchronised, so that they would all start the cycle approximately at the same time, allowing the service a better management of the limited funds by running the gamete and embryo laboratory only when it was being used, hence reducing operational costs (e.g energy, culture media for gametes and embryos). These two elements -allocating a specific time slot for women undergoing ovarian stimulation and arranging women in cohorts with synchronised cycles- allowed women to become familiar with fellow patients. They first met each other at the information session and then every morning at the service. The physical characteristics of the clinical setting also contributed to the establishment of a relationship between these women.

As opposed to patients that attended the private AR service, where they were usually seen by the doctor they chose, those who attended the public service were usually seen by an army of doctors assigned to them by the institution. During the diagnostic procedure they were referred to various departments (e.g. infertility, nutrition,

psychology department) in which a group of doctors and residents saw them. Then, during the AR treatment routine, a new group of doctors and residents attended them (an average of three senior doctors, six or seven residents and one nurse). This made it quite difficult for both patients and physicians to establish a close relationship. However, since residents were those who actually dealt with patients, and they rotated between departments and services quite frequently, it was common that, when a new cycle began, patients were treated by a new set of residents. This might have helped them not to lose faith in the institution, as was the case in the private clinics where patients commonly left after a set of unsuccessful cycles. This point, however, would require further research.

The physical characteristics of the clinical setting also contributed to the establishment of a relationship between these women. The public AR service was located at the end of the third floor of a hospital complex built in the late 1970s. The area was quite small and not built with the purpose of allocating an AR service, so doctors and nurses have had to reorganise the space to suit their needs. For example, the area in which blood samples were taken, resembled a converted closet, and the end of a hallway was used as the recovery area. The walls dividing the different rooms were thin and unstable; one could feel when someone was leaning against it on the other side and the conversations in the adjacent rooms could easily be overheard. The waiting area was very small, it could only hold ten people sitting down at once and it was usually cramped and uncomfortable. Due to the characteristics and limitations of the space, only the patient being physically examined that day was allowed in the third floor, companions had to wait in the general court yard.

Patients in this service arrived early in the morning, registered at the information desk and received a number that indicated the order in which the doctor would see them. Usually the numbers were repeated or missing, creating chaos when patients needed to be sorted out in the waiting room. Once they had their number, they had to wait until somebody from the service called them. When this happened, the receptionist would call out their name using a barely audible PA system, which made patients remain close by in order to hear. Since couples in the same cohort had already seen each other at the information session and in the waiting room, they tended to cluster together and chat while they waited to be called in. Here, patients were still allowed to be with their companion (usually but not necessarily the husband) so they too got to meet each other. Once in the AR service, patients were asked to change into a blue robe that left them half naked from behind, and were asked to find a place to sit in this small, unventilated waiting room with ten chairs, and no place to leave their belongings, no windows, bad lighting, peeling paint, and a loud TV tuned to the

morning gossip shows. When doctors were ready, patients were called in by the nurse, who did not worry about the order in which they were supposed to go in, leaving it up to the patients to sort out the numbers they had previously received at the information desk. Without their companions in these moments of stress, having to sort out the order in which they would see the doctor, and having to help each other take care of their belongings, encouraged patients to socialise with each other.

Most of the biomedical staff (senior doctors, residents and nurses) was allowed to observe the ultrasounds all at the same time, making the room crowded, hot and uncomfortable for the patient. It was common for patients to have an 'audience' of eight to twelve people while a resident conducted the trans-vaginal ultrasound, although her spouse or companion was not allowed in due to the space restrictions. Sometimes, members of this 'audience' were attending other affairs, fiddling with their mobile phones or chatting among themselves, which bothered patients quite a bit. After the ultrasound, patients were asked to change back into their clothes and wait for their feedback and prescription. Since there was a considerable number of patients waiting to be attended, feedback was usually given quickly while standing in the waiting room, in front of all the other patients, leaving them little time and space to reflect on the results and ask about the information they had just received. Sometimes, doctors moved to the hallway or into a small adjacent room to give the feedback in a more 'private' area, however, they usually left the door open or just stood a few steps away. So regardless of where they gave the feedback, everyone in the waiting room was able to listen -and was trying to do so- to what the doctor told the patient. Given that patients knew each other and had been following each other's progress, they were usually very interested in listening to what was going on with the other patient's cycles. While a patient was in the examining room, those waiting for their turn usually engaged in conversation. They would share experiences, feelings, doubts and fears. Once the feeble door from the ultrasound room opened, all became silent in order to observe the face and body language of the out-coming patient and, since they already knew each other, they would bombard her with questions: "How many?" "Did they grow?" "Will they proceed?" "Will they cancel¹ your cycle?" Most patients shared their feelings and progress happily, since they appreciated the support fellow patients were giving them and knew that for the women asking, as well as for them, this information helped them evaluate their own progress by comparison. When patients underwent surgical procedures, the recovery period was spent in a

¹ 'Cancel', in the context of this clinic, had two meanings, both negative. One meant that the patient was suspended from the treatment due to medical reasons, so the patient would usually be rescheduled for another cycle or sent to see another specialist within the hospital. In these cases, the canceled cycle did not count, hence it did not affect the limit of four cycles the institution had imposed. However, it did imply time and money for the patient. The other meaning of 'cancel' was when the patient failed to follow the instructions and rules that were established by the institution, for example, arriving late or missing a consultation, not taking the prescribed amount of drugs, not following the instructions given by the doctor. The word 'cancel' had a terrible negative connotation and was frequently used by doctors almost as a threat or blackmail tool.

shared area as well. Up to three beds were cramped in a room what made walking between them quite complicated. If more than three patients were in recovery that day one would be placed at the end of a quiet hallway alone and the others would be taken to the waiting area. Here patients also spent several hours together, without their companion and many times without a nurse or doctor. During this time they would exchange hopes and fears as well.

After patients had had their ultrasounds and blood samples taken (usually by 10 am) they had to wait until after midday (around 1 pm) for the doctor's evaluation and prescription in order to learn about the drug they needed and how much of it to buy. However, the hospital's pharmacy, which offered some of the medication at a reduced price, closed at 2:00 pm, leaving patients little time to purchase the drugs there. Since most patients came from faraway, and saving money where they could was important, patients had to decide between (a) staying close by until their results were ready and buy the right amount of medication at a reduced price, (b) buying what they thought they would use and risk being wrong (either buying too much or too little), or (c) going back home and buying the drugs elsewhere, where they would be significantly more expensive or unavailable (since regular pharmacies do not usually keep them in stock). Those who decided to stay tended to encourage others to do the same. Therefore, it was common to find groups of patients waiting for their results, going for breakfast or sitting in the courtyard's café sharing their experiences and progress. After a couple of days in treatment, patients had already developed strategies to keep track of each one's progress (e.g. a chain of text messages), they had organised themselves to go together when they needed to buy medicines or instruments that were not available at the clinic, and established ways of informing the rest of the patients if one had medicines they were not going to need anymore so they could sell them and recuperate some of the money they had spent. This became their usual routine for at least a month.

During my stay there, residents became aware of the spontaneous formation of a support group. They overheard patients sharing information about their protocols (e.g. drug dosages) and felt this was causing patients more stress and confusion. Moreover, they believed that as a result of sharing of information, patients were not following their instructions correctly and that this might have been the reason why they were not getting the results they expected (in terms of ovarian stimulation). Hence, to avoid sharing of information, they decided to restrict the number of patients allowed in the third floor waiting area to a maximum of five. But patients were still waiting in the courtyard before being sent up to the third floor so, by limiting the number of patients simultaneously present in the third floor waiting area, they were only reducing the number of patients they saw interact, but not the number of patients

actually interacting because interaction took place in the courtyard, or while they were waiting for the laboratory results, or also via text messaging.

As noted by a senior doctor, residents were quick to find a solution to what they considered a problem, yet they were not quick at considering why things happened the way they did:

“These doctors are only seeing the tip of the iceberg, they don't fully understand what is going on. This is how medicine is done in public institutions, the structure of the institution allows it. The way patients are recruited, all the amount of personnel that see them...patients are manipulated by so many doctors (here and elsewhere). I don't think patients really change the dosages they are taking because a fellow patient tells them to do so, I do think, however, they might stay longer in bed after ET or eat something in particular, or even take the medicines at a particular hour because a fellow patient who did get pregnant told them, but nothing else.” (Dr.SS Clinic 2)

Perhaps patients were sharing information because they had a lack of it and doctors were not offering it since they gave feedback swiftly and in public spaces, therefore patients did not have the time to reflect on what had been said to them, nor did they have an adequate space to privately ask questions and get the information they needed. However, they did have time and a space with fellow patients for exchanging information. Or maybe they shared information because this was the way they were dealing with infertility and AR, they might have been looking for a particular type of information that the doctors were not equipped to offer (because they were not undergoing AR, because they were not patients, etc)

Socialising among patients was facilitated in this service due to its physical and structural elements (Woogara, 2006; Burden, 1998). Creating groups of patients synchronising their menstrual cycles and being scheduled within the same time slot, frequently made it possible for patients to meet each other. Having to wait alone for consultation, for the prescription and during recovery (Wellstood et al. 2006) gave patients time to interact and build an informal spontaneous support group (Gottlieb, 1985) that accompanied them throughout the journey. Having an exclusive area designated for AR users promoted patient interaction since patients knew that the others there were in a similar situation, thus they felt more at ease with sharing their stories (Burden, 1998). The clinic's layout did not foster privacy (Woogara, 2005; Malcolm, 2005); the cramped spaces, the lack of consultation rooms, and the thin walls allowed patients to listen to each other's results and progress (Westin, 2003). This arose a feeling of shared experience, which was also fed by the fact that they knew each other. As noted by Westin “depending on the moment in which the individual is at, his desire for solitude will vary, sometimes wishing to be alone, with a close friend or family member or with a complete stranger with whom he can speak

freely knowing he will never see this person again and no judgement will be passed” (2003:433). Women undergoing AR treatments reported feeling the need to speak to someone who understood them, who did not judge them, and was a stranger to their social circle. This was what fellow patients offered each other. They were empathic experienced ears that would not judge, or did so from a similar standpoint. Furthermore, through this social interaction they were able to share the process of problem solving in a safe context in which they could plan and suggest ways of reacting and dealing with infertility and AR. Listening to others’ progress also served as a yardstick to compare their own progress and helped them feel they were not the only ones going through this, hence it helped normalise the phenomenon (Gottlieb, 1985). The whole situation resulted in the creation of an impromptu informal support group.

When asked about what they thought about the constant sharing of information that took place between women at this clinic, patients acknowledged both positive and negative aspects. On the one hand, they were happy with the camaraderie that emerged between them since this offered them a distinct type of support, which they did not find elsewhere (Gottlieb, 1985; Burden, 1998). On the other hand, sometimes they also felt that listening to fellow patient’s feedback could end up being stressful, particularly if the feedback was not positive. So, when women desired more privacy (Hogan et al, 2002) they usually stood in the hallway or venture into the meeting room, a space which was clearly designated for doctors and residents, not for patients. It was clear that, due to the lack of privacy and the time constraints, which did not allow patients to reflect on the feedback they had received, women sometimes held themselves from asking questions or giving doctors more information than what was explicitly required.

The difference between the spontaneous support group and an individual or group therapy with a professional was precisely what Gottlieb (1985) noted: since they were peers and shared a unique and precise experience, they knew what they needed and knew how to talk to each other. However, this type of informal spontaneous support group was not common in other clinical settings. At the private clinic, patients were in fact organised with the purpose of avoiding interaction (even visual interaction) between patients as much as possible, with the argument that this way they were protecting their privacy. Usually these women attend the formal support group.

The Formal Support Group

“At AMI we feel like amulets, after these sessions someone always gets pregnant” (Fellow AR user’s speech, 2007)

In 2004, a group of former AR users formed a national nonprofit nongovernmental organisation called *Asociación Mexicana de Infertilidad* (AMI) (Mexican Infertility Association) with three clear purposes: first, helping people with fertility problems take informed decisions about AR procedures as well as helping them consider ‘other options’ for becoming a parent (e.g adoption); second, offering them emotional support; and third, increasing awareness among health care professionals as well as among the public, about infertility issues. This support group (Gottlieb, 1985; Borkman, 1997; Zakrzewska et al. 2009; Katz, 1981; Hogan et al. 2002) emerged because its founders and members perceived that their needs for emotional support and information were not being met by their existing social institutions (i.e. family and physicians). Today, this is the most formal and active support group in Mexico dealing with infertility and AR. The support and involvement of its founders and members made AMI grow, in a period of five years, from being a northern local organisation (in Monterrey, NL), to having chapters in fifteen states and one in the US.

Their main activities comprise the organisation of formal and informal events with the purpose of granting support and offering information to fellow AR users, and hosting and managing a website with a very active on-line forum. In all these activities, AMI sends two clear messages: it is acceptable to use social and technological methods to build a family and, to do so, the best path should be paved with ‘real’ information.

Regarding their conception of what family is, their slogan, ‘*Formando Familias*’ (forming families), their logo, a design of a sperm entering an ova, and the images on their website, a baby with its father and the face of a baby, all stress the idea that a couple becomes a family when there is a baby at the centre and that achieving this using help, either social or technological, is a viable and acceptable method. Simultaneously, AMI vouches the idea that a family begins with a couple. By stressing this they present infertility as “a family issue, because the family is the couple; it is not true what the media says that in order to be a family you need children because a family can be just two” (speaker at AMI information event, 2007). This not only displaces the infertility issue, moving it away from the woman or the man, placing it in between the couple, but also allows for men and women to feel they are to some extent fulfilling their gender roles by having a family to look after. Nonetheless, having children is seen as something important and desirable, and any legal method chosen to achieve this is presented as equally acceptable. They do constantly stress (both in information events and their website) the importance of doing everything within the legal frame. Although there are no proper legal frames for AR as a whole, there are clear laws for adoption and laws that place surrogacy in a complicated legal place since it violates the existing laws on maternity assignment.

The second idea that is constantly stressed is the need for ‘real’ information. The term ‘real’ is used to refer to biomedical information as well as to practical and emotional support, all the information is viewed as equally important for the success of the endeavour. At the information sessions, organised by AMI in order to help people acquire ‘real’ information, they pointed out that sometimes people do not seek for information because they feel that asking about a particular option or procedure means agreeing to use it. They urged fellow AR users, not to confuse these two distinct stages: one thing is asking about the different options available and another is deciding which one to use and in fact use it. They stressed that they should not feel obliged to accept a procedure simply because they are asking about it.

As the names of these events suggest, ‘*Ven, Pregunta y Soluciona*’ (Come, ask and solve), ‘*Proyecto BB*’ (project BB, where BB stands for baby), and ‘*Cómo lograr un embarazo cuando pensabas que no era posible*’ (How to achieve pregnancy when you thought it was not possible), the purpose behind these information events was to offer people the opportunity to ask their questions, acquire biomedical information, and solve the issue of being childless. Like many other patient led conferences (Klapper et al., 1999; Zakrzewska et al. 2009), biomedical experts were invited to speak to and interact with users in a context other than the consultation setting. As one of the organisers underlined, this gave doctors the opportunity to learn about issues that were important to users but that usually did not come up in consultation, or if they did, they did in a very different way. This is why patient led conferences like this one have been considered important actors, they have a positive influence on healthcare professionals because they help doctors become more sensible to patient’s feelings and concerns, something many AR users complain they lack of.

Attendees also had the opportunity of meeting fellow AR users, either as speakers or as attendees. Listening to the experiences of fellow users gave attendees some type of guidance as how to deal with social, cultural and emotional aspects of infertility and AR (Zakrzewska et al. 2009). For example, it was common to see people’s heads nodding when the speaker, a former AR user, reminded everyone that their feelings of jealousy, anger, stress, doubt and desperation were difficult to deal with but that “we all go through these feelings, we don’t own them, we share them with all the other women and couples who are also going through this situation...I too went through the questioning ‘why me’ and I felt like faxing God and asking him why he sent children to *them* and not *me*...but instead of asking ‘why me?’ for which there is no answer, it is better to ask ‘now what?’, ‘which are my options?’ or ‘what can I do?’ I can’t change the situation but I can change my attitude towards it. It is important to visualise the future” (Former AR User at an AMI event, 2007). By sharing this type of feelings and opinions, AMI helps AR users validate and normalise their feelings, and helps

normalise the use of AR as well. These events served as mirrors in which AR users could reflect themselves on the experiences and feelings of former and current AR user. AMI also offered a telephone help line, published a digital newsletter and hosted a website with a very active free on-line forum which worked as a space in which AR users could ventilate their feelings, questions, and doubts in anonymity, and where they could find many different types of tools to help them deal with AR.

Recent studies underline how influential Internet has been in the way people seek information about their health problems (Zakrzewska et al. 2009; Iverson et al. 2008; Gerber & Eiser, 2001). These studies indicate that Internet has become a popular arena in which information is disseminated, where knowledge is constructed, and in which self-help networks have flourished (Borkman, 1997). There are people who frequently visit on-line health support groups in search of hope, help and guidance (Denzin, 1999), looking for “experiential health information” (Lewis, 2006:4) that will guide them through their own experience, to chat, to exchange e-mails and hold virtual meetings; all in addition to the physical meetings with the support group members. These are the reasons why, I considered important to look at the social interactions held at AMI's website.

AMI's website offered a range of sections with information about infertility, AR and the association, as well as a very active on-line forum (see table 8 for the general information onf AMI's forum). According to AMI's founder, they had helped over 400,000 couples only via the website. In addition to the daily posts, members also used e-mail, messenger, and the phone to stay in touch. Each of these seemed to be used for specific and distinct purposes depending on the degree of privacy desired. The on-line forum appeared to be used as an everyday, open, public space, yet the information they exchanged there was often very personal and emotional. When there was need to discuss or share specific information, they either arranged a meeting in messenger or exchanged e-mails.

AMI members used the forum to follow each other's progress, share experiences and feelings, comment on diagnosis and treatments, exchange information about doctors, clinics, prices, symptoms, procedures, latest technology, extreme cases, and gossip about celebrities using AR. It was common for people living in different cities and different countries, to compare how things were done in different Mexican clinics and between Mexican and foreign ones. The different sections in the forum indicated the different milestones in the journey or the different options for forming a family. If people opted for adoption, they met at the section called *Adoption*, or if they were using gamete donation, they met in the *Gamete Donation* forum, where they talked about issues related to not being genetically linked to their child, resemblance issues,

and disclosure vs anonymity issues. Those preparing for or undergoing an AR cycle (e.g AI, IVF, ICSI), met in the section called *Projecto BB* (project baby), when they reached pregnancy, they left this section, saying goodbye and assuring the rest of the posters they would soon meet again in the next step-section: *Pregnancy*. Other AR forums also had sections or threads divided according to the stage of the process and type of family forming option, yet some did it in a more specific manner, according to the cycle. In these other AR forums, people who participated in one given thread were synchronised with the members, in other words, they were all more or less in the same specific stage of the cycle because they entered according to the date they began ovarian stimulation. As opposed to those, in AMI's *Projecto BB* there were people using different kinds of AR, some AI while others IVF, and people who were starting a cycle were chatting with those in the middle and with those facing negative or positive outcomes. This diachronic structure made it possible for people to be constantly reminded of what they had just gone through and what they could await.

Table 8 General Information on AMI's Forum		
Date of data collection 20 th May 2009		
Number of Registered Users		2662
Number of Active users		1370 with at least one post
Inactive users		1292 only registered, no posts
Number of members who posted		
< 100 messages		1045
Between 100-500 messages		213
Between 500-1000 messages		56
> 1000 messages		56
> 1000 messages		56*
* The person with the most messages had posted 4852 messages		
Most Active Threads		
Project BB	10,266 threads	129,393 posts
Adoption	2,533 threads	21,345 posts
Pregnancy	2,134 threads	17,426 posts

Throughout the discussions, participants debated about meanings, fought for re-significations, strived to convince themselves that their decisions were correct, looked for approval, and sought advice. This is illustrated in the following comment posted by a woman who was unsure about using gamete donation because she feared the child would have no resemblance to her or her husband for fear of having no resemblance

between her child and her husband and herself. After several interactions with fellow users she said:

“I think that thanks to forums like this one and the information it spreads out, these thoughts [fear of lack of resemblance] start to fade away from the minds of those who are in search of having a baby, and this way the advances in science are accepted with greater ease”

These discussions also offered patients certain tools to deal with specific situations. For example, there was a particular phrase that helped people using donated gametes, embryos or adoption deal with issues of resemblance: “It will not have your eyes, but it will have your gaze; It will not have your mouth, but it will have your smile”. This mantra-like sentence was constantly repeated by people who sacrificed the genetic and maybe even gestational tie, in other words the nature tie, to strengthened the nurture tie by assigning it elements of resemblance (Becker et al. 2005).

Also present in the discussions was the process of establishing what would be accepted and what would not. For example, in one occasion a woman posted a long message explaining whom she and her husband were, and how they would like to help those who could not conceive to become parents offering her womb in exchange for money. The president of AMI then responded to the post stating, that she had left this message “to show our AMI friends what should not be done” since what this woman offered was illegal in Mexico (paid surrogacy). With this case, as with others concerning adoption and gamete donation, AMI lent its support for certain types of actions (i.e. legal procedures) and condemned others.

In summary, through the social interactions in this and other forums people acquired and exchanged information, established what was acceptable and what was not, negotiated and reassigned meanings, shared feelings and ethical concerns and by doing so, they participated in the process of making the use of AR (a particular use of AR) a socially accepted way of forming a family.

Within the AMI community, members have constructed their identity in a complex multilevel way reflecting two main elements that constantly intertwine: their AR trajectory or biography and their level of participation in AMI. At the first level all identity was based on the fact that they were childless (AR identity) and members of AMI (AMI identity), hence they called each other AMIs, which sounds similar to a way of calling friends in Spanish, stressing the fact that they are peers or a quasi-families that operate at a fraternal level, more than at a patriarchal one (Foot & Cottrell, 1965 in Katz, 1981:151). The next level referred to the stage of the procedure they were at (AR identity), what also had to do with the particular thread they participated in at the

on-line forum (AMI identity). If they were undergoing AR, they participated in *Proyecto BB* and they were simply called AMIs, but if they had achieved motherhood, they would move to the thread called *mAMIs* and they changed status and name to mAMIs, which in Spanish means mommies. However, if motherhood was achieved via adoption, they became mothers of a different order than those going through pregnancy. These women were called '*Mamás de Corazón*' (Heart Moms), their child '*Angelito de Corazón*' (Angel of the Heart) and the biological mothers were nicknamed 'MB', which stands for biological mother. This level of identity was also reinforced in the informal physical gatherings they attended since these were tailored for different purposes (i.e. baby showers or support during procedures) (AMI identity). Their AMI identity was also related to their geographical location, since members physically met with those in their same city, and to the degree of participation within the AMI community, which was reflected in the different status given to members (e.g. distinguished, platinum, silver, golden and brass members). Their AR-AMI identity was depicted in their on-line signature file (Baym, 1998), which was composed of any of the following elements: their on-line name (which could be a pseudonym), an image (e.g. a picture of themselves or of their child, an image of a baby, or of an angel), their member status with words and ribbons, where they lived, their diagnosis, the number of previous treatments and their results, the number of lost pregnancies, the age of their children, due date of birth or arrival (in the case of adoption), a thought, and a link to their blog or youtube video.

The AR identity is clearly present within the AMI on-line forums (as in others similar to it) yet it is not clear if today it has migrated outside the AMI community, if it has disentangled from the AMI identity and established independently and permanently. There are elements of the AR identity that could imply advantages even when standing alone (no longer intertwined with the AMI identity), like the fact that a woman engaging in AR is depicted as sacrificing a lot for her child-to-be, which is an important element of the role Mexican mothers play. However, there could be some disadvantages as well, such as discrimination towards the child, for example, when it comes to insurance companies. Some women did mention that once you engage in AR you will always be an AR user, the women who said this were those involved in creating and maintaining the support groups and other similar endeavours, but what happens with the majority of AR users? And what happens with men? Most of what was presented here dealt with women since the few sections dedicated to men were mostly used by women (e.g. a section called *What men don't say*).

Although most of the time the interactions denoted that the actors shared the same level of expertise, there were some users who had a special status; either because they were the ones who established the social network, or because they were very

active in participating in the network's activities (on-line and off-line). These very 'active' users sometimes were treated like experts. It was common to find users directly asking them for advice and information, and they in turn, answered with information they had either looked up on-line or in journals, they had got directly from a biomedical expert, or from their own experience. This particular type of interaction gave these 'active' users an important role regarding the process of knowledge construction. However, the 'active' user or 'expert' user, was clearly distinguished from the biomedical expert, using the prefix 'Dr.' and, because they spoke in designated spaces such as panels called 'session with the experts' or in virtual sections like 'Ask a Doctor'. Furthermore, usually doctors only participated in these patient-led endeavours when they were addressed; they never participated as equals with other members of the community. I was not able to find out if the biomedical professionals used the on-line forums for purposes other than answering questions, however it seems like it could be a good educational tool to help them find out more about what the patients are going through, their ideas and their fears.

Another website making efforts to generate an AR identity and offering support is *Fertired*. This project emerged in 2007 with the objective of creating a 'fertility community' which included all those involved in infertility -patients, psychologists, and biomedical specialists, men and women, singles and couples. Its name, which is a word built from the conjunction of the word fertility (ferti) and network (red), their slogan, '*Encuentros fértiles sobre infertilidad*' (fertile encounters about infertility), and their logo, an abstraction of three people intertwined with no gender indication, so it could be a group of women, a group of men, a group of men and women, or even a family, all stressing the idea of being a social network that encourages social encounters to deal with infertility. Like AMI, they too trust that, if the biomedical community understood the sociocultural and emotional aspects of infertility and AR, they would provide a better service. Therefore, they offer workshops to develop sensitivity among the clinic's staff and group counselling for the biomedical team. They also offer organising information sessions as well as emotional support groups for their patients. However, it has evolved into mostly an on-line pharmacy and a unfrequented on-line forum.

In the spaces offered by AMI and Fertired, participants listened to peers, asked questions, and vented their fearful emotions and undesired feelings of uniqueness; they engaged -at different levels- in the process of joint problem solving and decision making, and by doing it, some elements product of the stressful circumstances became socialised, then minimised, and eventually normalised (Gottlieb, 1985; Levy in Katz, 1981).

The Market Like Event

Another support and information endeavour was Expo Fertilidad, a market like event dedicated to AR created and directed by a woman in her late thirties with a BA in media studies. She had come across the world of infertility and AR while she coordinated a marketing project for a women's magazine and a fertility clinic. This project consisted of a contest: people had to send their medical diagnosis and a letter telling their infertility story. The case with the best possibility of achieving success would be offered a free AR cycle at the participating clinic. She received a much higher response rate than expected, which made her realise that infertility and AR were becoming important topics. Then, she faced infertility herself².

The mixture of these elements -the content of the letters, what other AR users said, and going through AR herself- made her realise that, in general, people lacked information regarding AR, so she decided to help them by organising this market like event. Over the course of my study, Expo Fertilidad took place three times (2007, 2008 and 2010) all at the World Trade Centre in Mexico City. Each year the event was announced several months in advance, with bright pink posters placed on bus stops, billboards, valet parking stands, magazines and even digitally with a website. Expo Fertilidad was everywhere, calling out the event's slogan: '*Queremos que alcances tu sueño*' (We want you to reach your dream). The purpose of the event was for infertility clinics to promote their services and for attendees to get information regarding infertility and AR.

Most of the attendees were couples from middle and upper class, in their thirties and forties, the majority from Mexico City and its surroundings. Attendees would arrive, pay and meander between the booths, talk to the doctors, listen to the presentations and leave. Interaction between them was rare making it impossible for me to interact with them since it would have been very intrusive to walk up to them and spark conversation. According to the organiser, in the first year there were more attendees and more exhibitors than in the following two. She believed the decrease in attendance was because people now had more information than in the past: "I think that doctors are more aware that people need information and are doing something about it, either organising information sessions, or advertising more, or something, but I feel they are a bit more informed than last year". Interestingly, she did not mention her own efforts (i.e. the previous events) as being responsible for her hypothesis that people had more information.

² The sweepstake was called "You haven't been able to be a mother? We make your dream come true" it was published in 2005 in *Padres e Hijos* (year XXVI number 12 p.58). Regarding its response rate, she said: "We received about 1000 letters. For other contests, for example, having your baby's face on the front cover of the magazine, I would receive about 3000; so you can see the proportion... supposedly my readers were already parents; probably some were just aspiring to be parents and others knew people who were trying to become parents."

The event had two sections: the conference hall, in which talks and workshops were held, and the exhibit hall where the booths were placed. The talks and the workshops covered various topics related to AR such as the causes for infertility, the emotional effects of facing it, the different procedures used to overcome it, and the elements that constitute a good fertility clinic. Although a few psychologists, andrologists, biologists and non-biomedical healers (emotional, spiritual and medical) were invited to speak at the different events, more time and space was always allocated to the specialised gynaecologists than to any other discipline related to infertility. The selection of experts, the majority biomedical AR experts, and their topics reflected the message being sent throughout the event: infertility is a situation -mainly located in the female body- that can be bypassed, overcome, or cured using the proper procedures, where 'proper' usually stood for biomedical and technological AR offered by male gynaecologists. The idea that when facing infertility the option for forming a family is through AR was stressed by the lack of references made to adoption.

The talks given by biomedical professionals followed a similar format. Following a narrative that commonly began with a joke or a comment referring to football, in order to make the male partners feel included and spoken to, it then describing the 'spontaneous pregnancy' chronology with a strong emphasis on the female reproductive physiology, and finally the speakers moved on to the specific topic they were there to address. They usually spoke fast and tried to cram their entire theory of infertility and AR into a 45 minute slot. They used PowerPoint presentations with images of babies, happy young mothers and fathers, embryos, gametes, high tech laboratories and procedures, and babies in test tubes. Many of these images reinforced the pop culture images of AR babies as 'test tube' babies conceived and 'grown' in the laboratory. They commonly used professional jargon and statistical data, and sometimes even used terms in English. The content of the talks and the images used to support it made one wonder how tailored these slides were for the public addressed. Oftentimes, these images looked like they had simply been taken from the talks prepared for medical conferences. The topics covered in these talks ranged from issues concerning gamete (mainly ova) donation, surrogacy, cryopreserving ova for future use as a way of safeguarding fertility for the future, and male infertility, to technical aspects such as AR procedures, specific physical and technical requirements a clinic must have in order to offer a good chance of success, and the biomedical credentials the physician and the clinic should have in order to consider them trust worthy.

After each talk there was a moment for questions and answers. When the audience asked questions, many used technical names for the procedures and the diagnosis,

they presented detailed data (i.e hormone levels) and usually asked very precise questions. With these questions, the audience sought the doctor's advice, a quick diagnosis, and suggestions for possible solutions, or at least some indication that there was still hope. Although doctors stressed the importance of conducting a full checkup on both members of the couple, and in these brief interactions doctors had little time and equipment to make a proper judgment on the case, they still gave out a tentative diagnosis and suggested some solutions. Though it was only a possible diagnosis, patients took this information as a strong piece of hope. They left with a different look on their faces, some revealed relief, some angst, but all commenting on the suggested option they had just received. The images used in the presentations, the data presented, and the way it was uttered carried the message that with the proper use of AR, achieving a pregnancy was very much possible.

In contrast to the biomedical professionals, the psychologists and spiritual healers usually spoke slowly and frequently stopped in the middle of their talk to ask the audience if there were questions and, in some cases, they even engaged the public in activities like meditation or reading. The topics ranged from dealing with stress to 'spiritual' methods to achieve pregnancy. Frequently, what was said by the nonbiomedical professionals (particularly the spiritual healers) was criticised by the biomedical speakers, this was particularly true when talking about aspects related to 'the age factor' which many spiritual healers contested. Like the biomedical speakers, they also reinforced classic gender roles, as depicted in the following quote stated by a specialist in Mexican herbal medicine:

"Women are housewives and that, they are, so idle that they spend lots of time watching TV and having their heads filled with rubbish...and since women no longer get training from their mothers in how to handle cleaning products, we don't know how to handle them properly and we frequently get contaminated"

The exhibit hall held between 20 and 25 booths, yet less than half (between 8 and 12) belonged to fertility clinics; the rest were promoting nonbiomedical methods to improve fertility (e.g. aromatherapy, Chinese medicine, acupuncture, and the use of magnets and massages), machines to measure hormone levels, temperature and blood pressure, food supplements and cooking utensils for a healthy diet, and an array of services and things unrelated to infertility and AR. Again, no adoption agency was present. Although in the exhibit hall all these different perspectives on how to deal with infertility were standing side by side, they did not come across as equal. While the ones put up by infertility clinics were massive (some with two stories) and with a lot of images and videos, the non-AR ones were small and less flashy. Clinics arranged their booth either like a mini clinic (with a reception desk, a waiting area, a consultation area, and a replica of a laboratory), or like small conference spaces in

which they gave talks that could be heard all around the venue. They all had banners and light boxes with high-tech images of sperms, ova, zygotes, pictures of happy families and doctors in scrubs. Some had videos to explain the procedures to the patients, however most used them to promote their services. The promotional videos, with a female narrator, showed shots of the clinic's facilities and of the procedures. One clinic's video was a clip of animated sperms singing an adaptation of The Beatles' hit song *Help!* in which the sperms asked the doctor to help them fertilise the ova. Attending the booths were doctors in white coats or in suits, young women dressed in uniform, and sometimes the nurses of the clinic, although they usually did not present themselves as nurses. The role of the young women was to attract people's attention, give out memorised information and souvenirs, write down people's contact information, and promote discounts. Both attendants approached potential patients presenting the clinic's success rates along with the prices and financing schemes, both used as a selling pitch. Most clinics offered 50% discount in the first consultation and others raffled full free AR cycles. The second year, one clinic offered a fixed price for all the procedures needed to get the person pregnant and, the third year, another clinic offered an insurance policy: if the first IVF cycle was unsuccessful, the clinic would pay for the second cycle. Along these marketing strategies, clinics also gave out brochures and freebies like pens, water bottles, mirrors, candy, and chocolates wrapped in pink metallic wrap.

This market like event resembles a farmers' market or a bazaar in many ways. Like the vendor in the market who puts up stalls, clinics put up booths in which they showed and advertised their products and services. As in the market, the person in the booth had to wait until the potential customer/patient was in front of the vendor/doctor before approaching them, since it was inappropriate to talk to these potential customers if they were in a colleague's booth. Doctors had to compete for the attendee's attention, and to do so they used flashy stalls, scheduled talks (audible through the exhibit hall), presented singing sperms, gave out freebies (i.e. pens, mirrors, candy), offered special deals (like one price for a package of several cycles and discounts in future consultations), had couples giving their testimonies and parade their babies and, in general, used different marketing strategies to attract potential patient to their booths. However, it was not just the behaviour etiquette what appeared to be market like, the type of information that was given was also similar to the information given in other market like events where the focus is to promote services by giving selected information about them. Once the attendee was at the booth, the doctor would talk to him/her or them, telling them the story of their clinic and of the procedures they offered. Likewise, the doctor would listen to their AR story. This exchange of stories helped each teller know the listener a bit more. The position of the attendee was also similar to that of a buyer at a market; he or she had an array

of different service providers to choose from, each one giving a slightly different version of their story in order to make their option more attractive. Although the person behind the booth was still the expert and the person seeking information was still lay, in this context, the expert was also selling a service and trying to attract the customer's business, and the patient was now a potential user of the service, in search for a provider that suited him or her the best.

In this sense, the entire interaction between doctors and attendees was very different from the interaction that takes place in a consultation setting. As opposed to the traditional 'patient-physician relationship', which is unequal and has elements of power, control and submission, in this setting patients became somewhat empowered since they were playing the role of a consumer. This was a new setting for doctors and potential patients to meet, a new setting for both. Some of the doctors I talked to commented on this new type of interaction. One said that at first he felt odd being in a situation in which he had to "sell himself that way", for he was used to seeing patients and not standing in a booth, however, by the end of the third day, when the event was over, he said it had been a good experience. Another doctor agreed and added that he had been talking to patients nonstop for two days. Both believed it had been a good experience and came back the following two years. Other clinic directors however, did not like the market like character of the event and, although some participated as speakers, they never attended with a booth or only did so the first year.

As in the clinic, biologists and nurses were seen as part of the supporting team in these events, but not as central, hence their lack of presence in both the exhibit hall and the talks. However, those clinics that had the reputation of considering biologists and gynaecologists equally important in the successful outcome of the procedures (for more on this point refer to the previous chapter) did have doctors and biologists talking to patients on equal grounds.

In the 2009 event, clinics offered 'testimony sessions' in which couples would come with their babies to talk about their success stories to current and future AR users. These sessions brought the presence of the user to the forefront and materialised the possibilities promised by the doctors and their high-technology procedures. Likewise, as part of the closing event of the third year, a group of former AR users gathered, with their children, around the expo's organiser, as a community of AR users, to have a group picture taken, again as material proof of all the success stories of AR.

Standing in the middle of the venue, the image of the exhibit hall was composed of couples holding hands and grasping the pamphlets and booklets they had collected,

blown up images of eight-cell embryos, of syringes puncturing ova and swimming sperms, masseur's tables and a miscellaneous collection of objects and services that were loosely related to infertility and AR. One could hear a pandemonium of overlapping explanations of procedures, diagnosis, and financing schemes uttered from all around. The combination of all these elements depicted an eclectic sonorous image of what infertility and AR in Mexico entails, with hues and tones related to biomedicine and nonbiomedical health methods, to economy, high technology and strong emotions.

Events similar this one have taken place in other countries, for example the National Infertility Day in the UK, and the Fertility Expo and the New Beginnings fertility conference in the USA. Some of these events are for free and organised in conjunction with support groups while others are done with the support of clinics. However, the organiser of Expo Fertilidad, claims this is the first event of the sort to be held in Mexico and the rest of Latin America. If other health related patient led conferences take place in Mexico, they never receive the same amount of media coverage nor are announced in so many public spaces as this one.

The Recruiting Event

Like former AR users, clinics and pharmaceutical companies also recognised the need patients had for information and organised events with the double objectives of presenting the clinic's services to the potential patient and of offering them a financing scheme. These events, called '*Charla Informativa*' (Informative Chat) or '*Sesión Informativa*' (Informative Session), were advertised in the media, were usually for free and, in exchange for personal data they gave a discount in the first consultation. Organisers underlined that they did not do them for profit: "since they are completely for free, we actually have to invest in them" (Dr. at a recruiting event).

These events followed a similar structure. They were held on Saturday mornings at conference venues that could hold up to 1000 people. The physical arrangement of the room resembled the setting of any other formal professional gathering. The speakers were in their early thirties and mid forties, usually wearing dark grey suits with no evident features in their attire to indicate if whether they were doctors or economists (e.g. no white coats). The first to speak was usually a male physician, he would succinctly introduce the general biomedical aspects of infertility and AR and gave a general overview of the clinic. They commonly used PowerPoint presentations with images of high technology equipment and technological images of ova, sperm and embryos giving the talk a technoscientific tone; charts and tables indicating numbers and percentages that reinforced what they were saying and suggested a

high degree of predictability of the results; and pictures of happy families, baby stuff (clothes, toys, etc.), and pregnant women giving the talk an emotional touch and a sort of veiled promise of success. Then, a female speaker presented the financing scheme they offered to cover the cost of the procedures, followed by the Q&A session. Towards the end of the event, attendees were invited to ask the doctors all their questions. This incited attendees to greater participation. People would ask doctors for their point of view regarding their case, they would share their medical history and test results, frequently using some type of technical jargon and information (e.g. the biomedical name of their condition or procedure, the names of medicines, their hormone levels). The event usually closed with the presentation of testimonies of success stories, sometimes with pregnant women, sometimes with couples with their babies in their arms. This was the only moment in which the voice of the AR users was heard in these events. The user represented success.

These events had a 'recruiting' tone to them because, although the declared objective was to inform people, as was indicated by the different names clinics use to refer to them (i.e. seminar, informative chat, informative session), the structure of the event, its visual arrangement, the images presented, the speakers, and the content of the talks, all followed a marketing scheme to recruit patients. First, through these events the organising clinic got hold of the contact information of those who attended, creating with it a database of potential patients. Second, days after the event, the clinic's personnel called those in the database to remind them that they were eligible for a discount in their first consultation and offered to book their first visit. Third, they presented the procedures as a high-tech successful procedures that would help them create a life "through love and science", as one of the slogans said. However, the biomedical, socioeconomic and emotional complications that these procedures entailed were not mentioned, nor were the possible side effects or the many times these did not end in success stories. Finally, the way the speakers were dressed (i.e. in suits), the presentation of a financing scheme as part of the scheduled talks, the location in which they took place (conference venues), and the fact that it was the clinics who were organising them, were all indicators that it had more to do with a marketing strategy than just information events. These events differ from the market like events in that only one clinic was present per event, thus attendees did not have the opportunity to compare prices, procedures and styles between clinics and doctors and, as opposed to the market like event and the information event organised by support groups, at these events, doctors and attendees hardly interacted.

Discussion

In spite of their differences in terms of size, reach and approach, AMI, Expo Fertilidad, Fertired, and the informal spontaneous support group formed at the public AR service, all share aspects of what the literature defines and conceives as 'support groups' (Gottlieb, 1985; Borkman, 1997; Zakrzewska et al. 2009; Katz, 1981; Hogan et al. 2002). They are grassroot self-governed collectives or organisations of voluntarily associated people, mostly peers, who share the common endeavour of aiding each other in dealing with a specific life-disrupting problem (in this case infertility-AR) and reaching a common goal (becoming a parent). They offer both emotional support and information and some also have to objective of raising awareness (e.g. AMI and Expo Fertilidad). They rely on the experiential knowledge of their members as well as on professional's expertise for the group's source of authority. This indicates they recognise and value various different kinds and sources of information. Through their actions, not only have they helped fellow AR users and service providers deal with their engagement with AR, but they also have acted as disseminators, they have raised the volume of the AR discourse turning it from a whisper into an audible and distinguishable voice.

The information events organised by AMI, Expo Fertilidad and the recruiting events organised by the clinic varied in terms of the physical and symbolic space occupied by the actors, of each encounter's purpose, and of their size and cost (see table 9 for a summary of the patient-oriented events). However, they all shared certain elements. First, they were all held in public sites, and the type of social interaction they promoted was between different active members of the AR arena, so these were spaces in which the construction of AR took place by the convergence of two distinct actors: service providers and users. Second, at all these events, the clinic that gave the talks raffled free AR procedures and offered the attendees discounts on future consultations. In order to benefit from these offers, attendees had to register upon arrival giving out their personal data. With this, the clinic and the organisers of the event were able to build a database of people interested in AR, which was later used to contact attendees and invite them to the clinic. Third, most of the AR professionals that spoke at these events were biomedical doctors, the majority male gynaecologists, some andrologists, and only a couple of psychologists (female). However, in some cases, nonbiomedical health professionals were also invited, like for example spiritual healers and traditional medicine specialists. The gender distinction between the two areas of knowledge, the physical (male-biomedical) and the psychological (female-emotional), reinforce the idea that men are rational and scientific while women are more emotional and social. Furthermore, the high speed at which doctors presented their talks did not allow time for reflection, the use of jargon

and words in English complicated communication and set distance between doctors/ speakers and attendees/patients, and finally, the constant use of the word 'basically' made one feel that the doctor had this complex thing under control, that although one cannot understand a thing, the doctor has a full grasp of it.

Table 9 Summary of Patient-Oriented Events			
	Information Session	Market Like Event	Recruiting Event
Organised by...	Support Groups	One former AR users	AR Clinics
Attended by...	Couples, former AR users, AR specialists	Couples, former AR users, AR clinics, and other health related service providers	Couples, former AR users, and AR clinic's staff
Located in...	Hotel conference rooms	Exhibit halls at the World Trade Center	Conference rooms at Exhibit halls or hotels
The cost is...	Fifty pesos donation	Between \$100-\$1000 depending on the type of access	Free
With the purpose of...	For users to acquire information and support	To offer potential users information	To offer potential users their AR services and financing schemes
It takes place...	When the support groups considers it necessary	Yearly	Frequently but not periodically
The activities are...	AR specialists and former users give talks, then small groups gather for Q&A session with the specialist	Different types of AR related specialists give talks. There is an exhibit hall where clinics and other services put up their booths	The clinic's medical and administrative staff explain the medical and financial options they offer and testimonials are presented at the end

It is interesting to note that, even though using AR has created problems that have little direct cultural reference as to how to deal with them, and that confront people with ethical and moral issues that cause conflict and angst, very few of these issues were ever mentioned at the events. The only topic that was frequently and publicly discussed, mainly at recruiting events, was gamete donation. In which case, doctors constantly assured the audience that nobody would ever find out that they had used gamete donation: "once, the grandmother came and assured me the baby looked just like her son when he was a baby. She said to me: 'he has the same eyes and nose!'. The thing is, she did not know we had used donated sperm!" (Dr. at a recruiting event)

A great deal of information exchange took place between the participants of the on-line forums as well as in the face-to-face interactions. However, social interactions in

these spaces were different. Within the website, particularly the on-line forum, there was constant (in some cases almost daily) personal -yet virtual and anonymous- interaction between its visitors. The majority of the participants were women, in spite of there being a section dedicated to men. The type of information exchanged covered a broad range of topics, from biomedical, sociocultural and emotional, to philosophical, economical, and practical. In contrast, the idea behind the recruiting and market like events was, first of all, giving people the opportunity to acquire biomedical information directly from doctors through talks and Q&A sessions, and to learn about the different ways doctors treat patients. In second place, these events had the purpose of giving attendees information regarding prices and financing options. Parallel to this, attendees also got to listen and see many fellow AR users, realising that they really 'are not alone'. Since the attendees were mainly couples, both men and women asked questions, hence men interacted more than in the on-line forums, and they were able to participate in the reproductive process, from which they have been excluded when in the biomedical setting. The interaction fostered by the informal spontaneous support group happened among peers, away from the gaze of people not directly involved in the service or use of AR, and most of it within the symbolic setting of AR and during important moments in the procedures (ultrasounds, ova retrieval, embryo transfer). In this sense, the members of the support group were accompanying each other side by side, and sometimes hand in hand, throughout the procedures, making this encounter unique.

Organisers and attendees of these events and of the forums constantly reiterated the importance of acquiring information. At the support group information event, the organiser thanked attendees for "taking the time to acquire real information"; the organiser of the market like event emphasised that, "if people were informed, they could live the process of AR better". Likewise, at the recruiting event, the doctors claimed that their only objective in organising these events was to inform potential patients about infertility and AR. At the clinic, women thanked fellow AR users when they shared tips and advice. By listening to people's stories, AR users (and particularly new users) got a glimpse of what these procedures imply in terms of how they will affect their lives and the chances of success. Suddenly, the 20, 30 or 40% of success rates quoted by the AR experts in the media and at the conferences turned into 5, 10, 15 cycles / doctors / years trying. The simple straight forward description of the procedures are made more complex by adding pain, anger, jealousy, loneliness, or happiness, union and discovery to the stories. The comments that circulated within the forums and at the events scared, stressed or gave hope to the new comers because through them, future and new users found out about the other side of AR, a side that shows that it is actually a long process that has many moments of failure followed by many of hope and some of success. They found out that in many cases it

took a long time and many treatments to actually achieve pregnancy. At one event, for example, a female attendee said, with angst: “I have not been in this for so long as you, I probably have waited too long but I was preparing the path. I see people’s faces and I imagine I have that same look. I want to recover the confidence/trust I have lost due to the lack of information and insensitivity of the doctors”.

During these interactions, different concepts were defined, meaning was constructed, and medical processes were socialised and normalised. The information, both biomedical and sociocultural, that was exchanged during these events will have an impact on how people conceive and live infertility and AR. People asked and answered questions, suggested readings and links, commented on each others treatments, exchanged information on dosages and medicine, suggested doctors and clinics, compared prices, and supported each other in terms of emotionally dealing with infertility and the process of going through AR. This process of knowledge construction was also fed by the few, but important participants who shared information as to how things are done elsewhere, creating with it situations in which participants debated on where AR was more effective or morally better, and why.

Each of these events and efforts, in their own way yet to different extents, have contributed to move AR from a private secluded stigmatised place, into a much more public place in which it is slowly becoming more acceptable to openly talk. These events have acted as a “bridge between patients and physicians”, they have mobilised themes, they have co-constructed meaning, and they have facilitate change. These spaces have the potential of modifying views on many aspects that now conform reproduction and AR. For example, by giving them a space to talk, the role of the biologist, the andrologist and the psychologist might become, in the eyes of the users, more central. Likewise, the role of the man can be relocated if a space is opened for him in the discourses and the dynamics of these support and information endeavours. Following the same line, if those directing the narrative that takes place within these events and forums include adoption as a valid option, it can be moved in the spectrum towards becoming a more desirable option than it currently is. Finally, these spaces could be fertile ground for the promotion of health issues, particularly those related to reproduction (safe sex, weight loss, and exercise) and pregnancy (healthy eating and weight control).

Reflections

In these final reflections I extract some aspects mentioned throughout the previous chapters with the purpose of highlighting the most important elements within AR in Mexico, either because these helped AR make its way and develop in Mexico, because they were the product of AR once it arrived, or because these elements limited or transformed AR somehow. In addition, I identify possible areas for future research.

I began this work with the assumption that reproductive technologies, like any other technology, have embedded in them, ideas that may clash or dialogue with the social structure and values of the culture into which they are being introduced (Inhorn, 2003; Bharadwaj, 2006; Unnithan-Kumar, 2004). In the case of AR and Mexico, there was one aspect of AR that very clearly dialogued with Mexican culture: the idea that having children is important. As mentioned on several occasions throughout the work, having children is central to Mexican female gender identity and it is a crucial and vital element for survival within Mexican society, a nation that strongly relies on the family, not only when facing a crisis but in general, for everyday life matters. Precisely because family is the only relatively trustworthy institution, being blood related is still considered very important. However, AR has dismembered the concept of 'blood related' in at least two kinds of links: genetic and gestational. Although participants in this study presented perspectives that varied considerably on which of these two links is more important to them, it was evident that these were perceived as distinct. Therefore, further research in this area would be interesting and helpful in order to understand the way Mexican society conceptualises each of these biological relationships. Particularly if we consider that the current law favours the gestational link over the genetic one, yet this law was written prior to the possibility of separating the biological relationship between mother and child in these two links (genetic and gestational); hence it does not necessarily reflect Mexican's beliefs and values.

AR has widened the range of biologically linked family systems, however, not all cultures have embraced this new range of options, and in fact, in some cases, it has been used as an argument against the acceptance of AR in general. Within Mexico, the use of AR to promote the traditional heterosexual family system is very welcomed, less but still welcomed, is the use of AR to help single women fulfil their role as mothers. This points out another strong element that bonds AR and Mexican culture: not only does AR allow for motherhood to become a reality and not only does it reinforce the idea that every woman's dream is to become a mother, that every couple's purpose is to become a family and that a family is conformed of a heterosexual couple and children, but above all, it highlights the notion that women

should sacrifice everything they have for their children (or children to be), and that science –aided by God- is capable of everything.

The accessibility of AR in terms of availability and affordability of the procedures and everything they entail, varies greatly between countries, states, cities and clinics. Accessibility to AR is partially determined by its costs and the healthcare systems that offer the services. Costs have played an important role regarding the establishment and conformation of AR in Mexico. In terms of the clinic, economic factors have set the line of what a clinic can offer; since the equipment and the specialised training needed for AR services are expensive, the providers can only offer what they can afford, limiting what they can offer to patients. This is precisely what distinguishes one clinic and its services from another. The gap between the costs of offering AR and the potential service provider's budget have been profited by some who have seen it as a business opportunity. They have established a scheme in which they outsource AR procedures to those who cannot finance establishing the laboratories and have patients who need this type of attention. In terms of the patient, the story is quite similar since it is difficult to know from the beginning how much these costly hi-tech medical procedures will sum up to, and it is common that patients begin a treatment but have to either drop out or limit themselves to certain protocols due to costs. Some Mexican banks have started to offer financing schemes specifically designed for these types of treatments. In this case, the gap between the cost of the procedure and the patient's budget has been seen as a business opportunity by some Mexican banks.

Today, AR services are offered in all three healthcare systems (private, work related and public or government related), although the way they are offered varies a great deal between each system due to differences in their operations and physical layouts (see table 10 for a summary of the physical and structural elements of the AR services). Currently, the majority of AR clinics and services are part of the private healthcare system. Private AR services have the fewest restrictions in terms of patient eligibility (they offer services to heterosexual and homosexual couples, single women, and women over 45), the broadest spectrum of protocols (from homologous AI to surrogacy including gamete and embryo donation), the widest spectrum of coverage (there are clinics in over 17 states), the highest prices, and many financing schemes to pay for them. The public and work related services, however, cover a much broader socioeconomic spectrum of the population, yet have more restrictions in terms of patient eligibility and regarding the types of protocols they offer (usually, they do not offer surrogacy) and they only have clinics in Mexico City. The public, private and work related AR services as a whole seem to cover a wide spectrum of society, although some sectors might be underrepresented. This was something that

was easily appreciated due the variety of patients I encountered in each site, they came from many different backgrounds, socioeconomic levels, and occupations. This indicates that, although to different degrees, AR is being inserted into various social worlds simultaneously.

Mexican AR is influenced by the USA and Europe in at least two ways: technoscientifically and ethically. Mexico has imported most of its AR knowledge from either Europe or the USA either by bringing experts to train future AR specialists or by sending them to receive training abroad. Likewise, procedures, ovarian stimulation protocols, chemical ingredients, sophisticated apparatuses, most success rates and statistics, as well as the essence of the legal and ethical debates presented by legal scholars, have all come from abroad. Although many of these elements have been adapted to local possibilities, there is an urgent need to start analysing the local situation in detail. Similarly, faced with the lack of a local nationwide legal frame to regulate the AR services, some service providers have decided to align to the guidelines stipulated by foreign societies, such as ESHRE in Europe, ASRM in the USA, and Red Lara in Latin America.

Regarding legislation, while there have been constant yet inconsistent efforts to regulate and legislate the realm of AR, and recently there seems to be greater attention paid to this topic within Mexico City's parliament, there is still a legal void regarding AR. However, before looking for a verdict regarding which initiative to pass, and considering the scope of the above mentioned areas that still need exploring, a few in-depth multisite interdisciplinary studies should be conducted. First, an epidemiological study indicating the major causes for infertility and maybe even finding ways to avoid it, particularly if the cause is related to STD&I issues, to a misuse of contraceptives, to infertility as consequence of abortions, or related to diabetes. Then, a larger sociological study focusing on perceptions of how gametes, embryos and surrogacy should be treated, either as exchangeable goods (in exchange for money, for treatment, or for knowledge), or as non-exchangeable goods (hence as donations), or if they should not be exchanged at all (therefore establish them as illegal). Finally, and complementing the previous studies, a legal analysis of the cases that have already been brought to court would be pertinent, focusing on their motives, arguments and resolutions.

Assisted reproduction not only found a fertile ground in biomedicine but also within the market. In the past ten years, the industry of AR has grown not only in terms of the number of clinics and services that offer it but also in terms of their marketing schemes used to promote their services: from recruiting events such as the ones offered by the clinics to yearly expos, passing through ads in magazines, newspapers

and television, giant billboards, internet forums and websites, and financing schemes to pay for them. All this media coverage, in addition to promoting the services, has offered information to those embarking on the long journey of AR, it has contributed to socialising and normalising infertility and AR and it has changed the way healthcare is promoted among the public because it is the first biomedical area advertised in the media in such a way.

The way AR has been adopted by Mexican society has very strong practical (pragmatic) hues. Although I only spoke to those who had already decided they would use AR (and regardless of how that decision was taken in terms of the information they had received), I was able to observe the decision process when a new procedure, usually of higher complexity, was being suggested to them. In this process, the arguments that played an important part in the decision making were a combination of elements that included: economic costs, understanding the diagnosis, and understanding the procedures. Concerning the use of gamete or embryo donation, there were fears related to the acceptance of the child (will I love it as much, will it look like us, will people know). However, there were no religious or even ethical questionings, at least not as far as this study could observe. This led me to think about various possible explanations that would need further research. Could it be that AR in Mexico is not considered 'artificial' in the same way as in other places in which AR has generated more doubt, concern and debate. This variation could be because, either the procedures were not viewed as highly artificial, or artificiality was conceived in a positive manner.

The last point I want to stress is related to the way infertility is conceptualised within each social group. Among users, infertility was commonly reported as being a problem, a momentary state or an undesired condition, some even considered it a consequence of their past decisions (abortions, postponing pregnancy). However, rarely did they see it as a disease, and nonetheless, they did see it as a great problem that jeopardised their entire life in terms of their marital, economic and social stability, since becoming a mother, giving a child to their partners, granting their families decedents were all considered women's responsibilities, what they were expected to do. AR users tended to follow the discourse that placed them (women) as responsible for the problem and hence for its solution.

Within the biomedical discourse presented to the public, infertility was defined as a bodily problem mostly due to female issues of which 'the age factor' was considered the most important, even when there is no solid data indicating that this is the case. There could be many reasons for why 'the age factor' is the most common explanation; one seems to be the compatible nature of 'the age factor' with the fact

that many women are now engaging in activities that were not common to their gender role. In general, women are expected to become housewives and mothers when they are in their early twenties, however, for many reasons, women are engaging each time more in other types of activities, paid jobs and professional development. When women engage in these 'male' activities, deviating from the socially pre-established and accepted gender role (that of being a housewife and a mother) and happen to face infertility, the immediate explanation many give is having had postponed pregnancy. Following the same line of argumentation, if women are not engaged in their assigned role of housewives (i.e. being married) then they must be engaged in a promiscuous life (an assumption that obviously is highly questionable) and hence have been exposed to many sexually transmitted infections and diseases which result in infertility. So, female infertility due to 'the age factor' is directly related to the unfulfillment of the female gender role as housewife due to her desire to pursue other goals, which are 'malelike' in origin and are seen, when pursued by a woman, as very selfish. The way 'the age factor' has been framed and favoured over other causes for infertility could end up becoming an obstacle to the still ongoing process of transforming women's gender role (from housewives and mothers, to professional and independent citizens). Moreover, instead of promoting 'safe sex' via the use of condoms (which would be the way of tackling STD and STI if infertility is indeed a problem related to unsafe sexual practices), infertility has been depicted as a problem that can easily be dealt with by using technoscientific procedures, specifically AR.

Under this strong discourse a new one is trying to surface; and I referred to it as 'the male factor'. Although it is still in a pre-embryonic stage, the first signs of its emergence can be found in the statistics and incidence rates mentioned at conferences and in the media where it is stated that 40% of the infertility cases are due to 'the male factor'. The second sign is the advent of a new medical discipline which focuses on male reproductive issues: andrology. Whether or not andrology will subsist, if it will consolidate as a discipline and will become part of the general arena of AR, are all points which at the moment are not clear. Following andrology's development at the present moment is a unique opportunity to see how new biomedical disciplines develop and what will be needed for them to survive. The emergence of "the male factor" and andrology can result in men gaining a more active role within reproductive matters, something that although it has not fully happened yet, now at least it has the possibility of happening.

Table 10.
**Summary of the physical & structural elements
of two AR services**

	Public AR service	Private AR service
Type of clinic	AR service offered at a public tertiary level hospital	Privately owned clinic focused on general gynaecology, infertility and AR
Physical Aspects of the Clinic		
Location	At the end of the third floor next to the maternity ward	An entire floor of a medical office tower within a privately own medical complex
Waiting room	First in a court yard with other patients and their companions, then in a small room with fellow AR patients	A spacious room, where AR and non-AR patients wait.
Examining room	A single well equipped small room for the entire service	Six well equipped private rooms with toilette facilities
Consultation room	None. Feedback is given in the hallway or in the waiting room	Each examining room has a private consultation area
Recovery area	One area with capacity for up to three beds	One area with capacity of up to three beds and one bigger private room
Blood sample area	What seemed like a converted closet	A public area next to the nurses' area
Service Structure		
Admittance	Only those without medical insurance or social security can be eligible and the process is bureaucratic	No requirements for acceptance, only have the means to pay
Fees for service	Based on the socio-economic level of the user	One set price for all
Fees for medicines	The hospital's pharmacy offers the medicines at reduced price	Medicines have to be bought at specialised pharmacies at market-price
Patient organisation	Arranged in cohorts, with synchronised ovulation cycles, scheduled within a set time slot, and served loosely at a first-come-first-serve basis	Patients undergoing AR are scheduled within the same time-slot without individual appointment in a first-come-first-serve basis
Who sees the patient?	Always the four residents plus the doctor that is on duty that day	Mainly their head doctor although sometimes also one of the other members of the clinic, plus two residents
Who accompanies the patient	The companion must stay in the courtyard so most of the time patients are with fellow patients	Companions stay with the patient all the time, except during ova aspiration and embryo transfer
Privacy & Social Interaction		
Privacy	Low degree of privacy	High degree of privacy

Table 10. Summary of the physical & structural elements of two AR services		
	Public AR service	Private AR service
Patient- healthcare provider relationship	Patients report having a conflicting relationship with the residents, doctors and nurses	Patients report having a close relationship with the doctor and the nurses yet a distant one with the residents
Patient-patient relationship	Patients meet and socialise with fellow patients. They spontaneously create informal support groups that casually meet on their appointment days and keep in touch via phone and text messages	No relationship with fellow patients of the clinic

Conclusions

As I explained in the firsts two chapters, this study was born from two personal intellectual needs. The first, to understand the process of transformation our world is undergoing as a result of the different biomedical technologies being used; and the second, to see this process take place within an unexplored setting, i.e Mexico. The overall question that guided my work is very simple: how is AR making its way into Mexican society? From the onset it was clear that AR was already part of the biomedical spectrum. However, the amount of people using it, its reach within society and which were the cultural aspects that were being moved, realigned, resignified or even invented in order to accept AR as a legitimate way of conception and of forming a family were not clear. Four years of multi-sited ethnographic work using a set of mixed methods to collect data and following an STS theoretical framework to guide me through the many hours of analysis, resulted in this approximation to the process of appropriation of AR by Mexican society. As this study is among the first posing these questions within this particular setting, its strength lies on that it offers a map of AR in Mexico, indicating a set of landmarks and main actors. More than answering questions, I have identified the relevant and urgent issues that would need further study and detail, and I have explored possible ways to answer them.

In chapters three and four I explored the ongoing process of development and consolidation of AR as both a biomedical field of specialised knowledge and as a department within healthcare. In both, I focused mainly on four areas: infertility, AR, the AR clinic and the service provider. In Chapter three I offered a historical overview of the emergence of AR in Mexico, presenting the different elements that allowed AR to become established. I discussed the relationship between the family planning campaigns and the arrival of AR, highlighting the important role both played in moving

reproduction from the realm of the uncontrollable to the realm of the controllable through the use of biomedicine. I explored how these, in conjunction with other emerging and consolidating discourses typical of the Western world during the 80s and 90s, helped transform the topic of reproductive problems, from it being taboo to it becoming a subject of public conversation. I looked at how the AR clinics and services developed, at how the professional associations and user support groups were formed and at the reaction within the government and the media, all in more detail. Each of these actors, with each of their efforts, named and defined what AR is and should be, who should be allowed to use and offer these services and how the State should get involved in terms of regulation. After four years of having looked at this field in detail I can say that although AR cannot be considered a common and normalised practice in Mexican society, it is certainly no longer uncommon.

Drawing information from interviews with service providers, official documents, journalistic pieces and secondary references, and highlighting the technological, economic, social and market related factors, in chapter four I focused on the evolution of the 'AR clinic', on the service provider's specialisation process, and on two emerging AR specialities. AR, being a specialised field of knowledge, requires a specialised practitioner and a specialised place in which to practice it. The AR clinic evolved from being only a set of apparatuses that shared space with other gynaecological and obstetric instruments tucked away in drawers or in particular usages, to becoming specially designed (or adapted) spaces for the exclusive use of these highly sophisticated and complex services. The AR clinic not only grew in its physical dimensions and in the complexity of its layout, but it also became independent from the doctors that inhabited it. In the process of AR becoming a more complex field of specialised knowledge, gynaecologists had to allow new disciplines into their realm of expertise. Two of these new disciplines are the andrologist and the AR biologist. Alongside these above mentioned transformations, the label of infertility was also transformed. It acquired the status of diagnosis for which AR, framed as a paranatural technology capable of imitating nature yet also of going beyond it, is the appropriate treatment. In this chapter I also analyse the ongoing process of importing, adapting and assimilating AR into Mexico by looking at infertility's aetiology and incidence rate, as well as the descriptions of the procedures given by the AR service provider.

In chapters five and six I explored the field of AR from the user's perspective. I tried to build a three dimensional image of the Mexican AR user and his or her experience through AR using the information gathered at the clinical setting as well as at the various sites in which users interacted between themselves and/or with the service providers, such as conferences, on-line forums and the media. Users commonly

framed their experience as a pilgrimage, travelling from one clinic, one doctor and one diagnosis, to the next set of clinics, doctors and diagnosis. This journey demanded information and support that was not readily available and that in fact in many cases the user had to create. This was why both chapters make references to travelling, one using the term pilgrimage and the other using the term quest. Chapter five makes reference to a pilgrimage because informants used this term when referring to the experience of going through AR. Each site they visited was symbolically and emotionally charged, in each one they would meet a 'wise' person that would help them reach their final goal, in each one they had to enact a ritual in order to obtain the object of their desires, and in each one their faith, trust, and hope was put on trial. In chapter six I talk about the long and arduous road in search for information and support. In a context in which information is regarded as empowering, I explored what patients did when they realised they lacked information and support. I presented the processes of construction, negotiation, socialisation and normalisation of knowledge, and discussed the way patients mixed and matched the different types of information (sources, kinds and contents) they were faced with.

What became evident with this study, was that the assimilation process of AR in Mexico is still an ongoing process that is characterised by a faster incorporation of AR into the practical (in the sense of people using and offering it) and marketing realm than into the reflexive (people thinking and analysing the use and consequences of AR), monitoring and regulating realm (none of the initiatives to regulate AR at a national level have reached a debating stage in Parliament). For example, while there is a rapid expansion of infertility clinics (2 in 1986 and over 50 in 2009), the medical community has still not generated homologue definitions of terms, and the numbers and statistics employed to promote these technologies are still being imported from abroad (e.g Spain or the USA). Even though coverage given to this topic in the printed media has become wider in the past ten years, and though the marketing strategies have broadened and diversified (information sessions, television, radio and printed ads), and though there are numerous regulating proposals put forth by the different political parties (eighteen in total, yet none has made it to the floor), there is hardly any biomedical or sociological work dealing with the subject in Mexico.

In this work, I have presented the way Mexico is assimilating AR services into its own particular sociocultural context. The way actors interact in the conformation of AR in Mexico, makes it evident that these technologies, or better yet, that these services, are assimilated and nuanced by different social groups in different ways.

The process of organising the information into coherent chapters turned out to be the most difficult aspect of all this work. Having well over 200 pages of field notes, hours

of recordings, CDs with extracts of television programmes, and binders full of newspaper and magazine clippings felt like arriving to an unknown foreign city during rush hour without a map and completely alone: it was chaotic and frightening. The voices of all my informants spoke to me all at once, their images raced through my head as they pleaded, how was I to make them stop so I could make sense of them. Then I remembered how I tackled each new city I visited during my first travelling experience alone. I would get off the train, breath in and start walking. The first day I would walk the entire city without any determined direction. In this first walk I would find the places I wanted to revisit at the next day: the tucked away café where secrets are told, the park where people rest, the museum where their past is kept in glass boxes and hanging on the walls, the busy market where people interact, build and transform culture. The second day I would stop at these places again and, depending on what I learned there, I would plan the third day's journey, the fourth and so forth. The final shape of this dissertation holds the essence of that first trip. I moved through the field of AR as I did through those cities, first offering a general view and then focusing in each chapter on certain elements that I found particularly important. As in all those cities in which I learned how to travel, I left many places unvisited and questions unanswered, I would board the train back home with the feeling that I would come back soon.

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Annex 1

List of Assisted Reproductive Technologies

Sperm collection & manipulation techniques: Sperm can be obtained by masturbation, by vaginal intercourse with the use of specially designed condoms, or surgically. There are various options for surgically obtaining sperm, these are: microsurgical epididymal sperm aspiration (MESA), testicular sperm extraction (TESE), or puncturing the vesicular seminalis or the vas deferens. Once fresh sperm has been obtained, it is washed and spun at a high speed in order to select the most active sperm. The sample can then be frozen for future use or used immediately for insemination of fertilisation.

In vitro maturation (IVM): Ova are collected from the ovaries when they are still immature and left to mature in the laboratory before being fertilised. With this technique, compared to conventional IVF, women do not need to take as many drugs before ova can be collected.

Intrauterine insemination (IUI): Using different techniques, the fast moving sperm are separated from slower or non-moving sperm. Then a concentration of capacitated and washed fast moving sperm are placed into the woman's womb close to the time of ovulation, around the middle of the ovulation cycle, when the ova is released from the ovary.

Gamete intra-fallopian transfer (GIFT): After selecting the healthiest eggs and sperm, they are placed together in the woman's fallopian tubes. Fertilisation therefore takes place within the body.

In vitro fertilisation (IVF): Usually, the IVF process begins with ovarian stimulation to obtain a larger number of ova than with a non-assisted cycle. The number of days women take the drugs depends on the type of drug cocktail used. Throughout the drug treatment, the doctor monitors the ova development progress using vaginal ultrasound scans and, possibly, blood tests. The purpose of these drugs is to suppress the natural ovulation cycle in order to control it and to increase the number of ova produced. Drugs are given to promote the maturation of follicles, then, once the follicles reach the desired size, and 34–38 hours before they are due to be collected, a hormone injection is given to help them finish their maturing process. Once they are collected from the ovaries, usually by ultrasound guidance and under sedation, they are placed in a Petri dish with a high concentration of capacitated sperm. Sperm and ova are cultured there for between 16 to 20 hours; then they are checked to see if fertilisation occurred. If fertilisation occurs, the resulting embryo is left to mature for a couple of days longer before being transferred to the woman's womb. If possible, the embryos considered to have the best morphological qualities are chosen for transferral. In some cases another cocktail of drugs is given to prepare the lining of the womb for embryo transfer, to help during the implantation process and to help throughout pregnancy.

Intra-cytoplasmic sperm injection (ICSI): The procedure for ICSI is similar to that for IVF, but instead of fertilisation taking place in a dish and with little assistance, in ICSI the embryologist selects one single sperm from the sample and injects it directly into the ova using a potent microscope. Then the injected ova is left to rest, if fertilization occurs the rest of the procedures takes place like in IVF.

Assisted hatching (AH): Before an embryo can attach to the wall of the womb, it has to break out or 'hatch' from its outer layer. So, prior to being transferred back to the womb, a hole is made in the embryo's zona pellucida (the outer layer of the embryo) or it is thinned using acid, laser or mechanical methods to help it hatch and implant. Because assisted hatching thins or makes a hole in the protective outer layer around the embryo, the woman may be given antibiotics to prevent infection.

Annex 2 Consent Forms

Consentimiento Informado > Usuarios

Datos Generales

Título del estudio:	Aspectos Socioculturales de los Servicios de Reproducción Asistida en México
Investigadora titular:	Mta. Sandra P. González Santos Becaria de Consejo Nacional de Ciencia y Tecnología (CONACYT) Candidato a doctorado de la University of Sussex
Datos del investigador responsable:	S.P.Gonzalez-Santos@sussex.ac.uk +52 55 55 11 83 31
Asesores:	Dr. Adam Hedgecoe Senior Lecturer & Marie Curie Excellence Grant Team Leader de la University of Sussex Dra. Gilian Bendelow Head of the Department of Sociology, University of Sussex.

Introducción

Mediante este documento lo invito a participar en el proyecto de investigación en el que se estudiarán los aspectos socioculturales de los servicios de reproducción asistida en México.

Antes de decidir si participar, es importante que lea cuidadosamente esta información y, si lo cree pertinente, la discuta con quien considere conveniente. Estoy a sus ordenes para aclarar cualquier duda y para brindarle la información adicional que requiera.

Objetivo del proyecto

El presente proyecto de investigación tiene como propósito explorar el contexto sociocultural de los servicios de reproducción asistida en México. Se busca conocer la manera en la que los servicios de reproducción asistida son 1) presentados por la comunidad médica que los provee y 2) concebidos por los usuarios de dichos servicios; con el fin de conocer los cambios socioculturales que se están generando en nuestro país como resultado de la aparición de clínicas y centros que ofrecen estos servicios.

Metodología

Si accede a participar en esta investigación se le solicitará permiso para acompañarle durante su tratamiento, presenciando –cuando lo crea conveniente- las consultas y procedimientos médicos.

Asimismo, se le solicitará una entrevista. Esta se llevará a cabo en la clínica durante el tiempo que allí permanezca, no se le quitará más tiempo del que ya pasa en la clínica. Dicha entrevista puede ser individual o en pareja, como usted lo decida. Si lo permite y es posible, la entrevista será grabada y transcrita para facilitar la investigación. Una copia de ésta transcripción le puede ser enviada si la solicita.

Uso y confidencialidad de la información

La información que usted me proporcione será confidencial, anónima y será utilizada únicamente con fines académicos (publicación de artículos en revistas académicas y la tesis doctoral). Los artículos que de esta investigación emanen, así como una copia del trabajo doctoral, le serán enviados si los solicita. Para asegurar confidencialidad, se le asignará un número de identificación compuesto por los siguientes datos: usuario/ no-usuario, sexo, edad, estado civil y lugar de residencia.

Consentimiento

1. Confirmando que he leído y comprendido toda la información aquí presentada.

2. Confirmando que he tenido tiempo y oportunidad de aclarar mis dudas y he obtenido toda la información extra que he solicitado.
3. Entiendo que mi participación es voluntaria y que tengo la libertad de retirarme del proyecto en cualquier momento, sin previo aviso, sin tener que dar explicación alguna y sin que mis derechos legales se vean afectados ni mi tratamiento.
4. Estoy dispuesto a participar este proyecto de investigación.
5. Permiso que la entrevista sea grabada.
6. Estoy conciente y doy permiso de que se utilicen extractos de la entrevista para ser citados en trabajos académicos.
7. Estoy conciente y doy permiso de que se utilicen extractos de la entrevista para ser citados en la tesis doctoral de la investigadora.

Nombre y Firma del Entrevistado
Fecha

Nombre y Firma del Investigador
Fecha

Nombre y Firma del Testigo
Fecha

Nombre y Firma del Testigo
Fecha

Consent Form : Service Providers
Consentimiento Informado > Médicos

Datos Generales

Título del estudio: Aspectos Socioculturales de los Servicios de Reproducción Asistida en México

Investigadora titular: Mta. Sandra P. González Santos
 Becaria de Consejo Nacional de Ciencia y Tecnología (CONACYT)
 Candidato a doctorado de la University of Sussex, UK.

Datos del investigador responsable: S.P.Gonzalez-Santos@sussex.ac.uk
 +52 55 55 11 83 31

Asesores: Dr. Adam Hedgecoe Senior Lecturer & Marie Curie Excellence Grant Team Leader de la University of Sussex
 Dra. Gillian Bendelow Head of the Department of Sociology, University of Sussex.

Introducción

Favor de leer cuidadosamente toda la información que a continuación se le presenta. Estoy a sus ordenes para aclarar cualquier duda y para brindarle la información adicional que requiera.

Mediante este documento lo invito a participar en el proyecto de investigación que tiene por objetivo estudiar los aspectos socioculturales de los servicios de reproducción asistida en México.

Objetivos del proyecto

Específicamente se busca conocer la manera en la que los servicios de reproducción asistida son 1) presentados por la comunidad médica que los provee y 2) concebidos por los usuarios de dichos servicios; esto con el fin de conocer los cambios socioculturales que se están generando en nuestro país como resultado de la aparición de clínicas y centros que ofrecen estos servicios.

Metodología

Si accede a participar en esta investigación se le solicitara una entrevista. La cual se llevara acabo en su consultorio, durará el tiempo de una consulta de primera vez y si lo permite, será grabada y transcrita para facilitar su uso en la investigación. Una copia de ésta transcripción le puede ser enviada si la solicita.

Uso y confidencialidad de la información

La información que usted me proporcione será mantenida en todo momento anónima y será utilizada únicamente con fines académicos (publicación de artículos en revistas académicas y la tesis doctoral). Los artículos que de esta investigación emanen, así como una copia del trabajo doctoral, le serán enviados si los solicita. Para asegurar confidencialidad, se le asignará aleatoriamente un número de identificación.

Consentimiento

1. Confirmando que he leído y comprendido toda la información aquí presentada.
2. Confirmando que he tenido tiempo y oportunidad de aclarar mis dudas y he obtenido toda la información extra que he solicitado.
3. Entiendo que mi participación es voluntaria y que tengo la libertad de retirarme del proyecto en cualquier momento, sin previo aviso, sin tener que dar explicación alguna y sin que mis derechos legales se vean afectados.
4. Acepto participar en una entrevista
5. Permito que la entrevista sea grabada.
6. Estoy al tanto y doy permiso de que se utilicen extractos de la entrevista para ser citadas en trabajos académicos.
7. Estoy al tanto y doy permiso de que se utilicen extractos de la entrevista para ser citadas en la tesis doctoral de la investigadora.

Estoy dispuesto a participar en este proyecto de investigación.

Nombre, Firma del Entrevistado

Firma del Investigador

Nombre, Firma del Testigo

Nombre, Firma del Testigo y Fecha

Annex 3

Interview guideline used with some AR users

Code Date of application:	Year of Birth	Do you work?	Married? For how long?
Place of Residence:			Religion:
Dx			
How did you feel when you received the Dx?			
Do you have children?			
How where they conceived?			
How long have you been trying to conceive?			
How many clinics and / or doctors have you visited in the past?			
How did you find out about AGN?			
How many procedures have you used in the past?			
Which procedure are you undergoing in this cycle?			
How many children do you want in total?			
How many children do you want in this pregnancy?			
Would you like to have the sex pre-selected?			
Which sex would you prefer?			
Would you use? Ova donation Sperm donor Donated Embryo			

Would you donate... Ova Sperm Embryo
Would you use a surrogate mother?
Would you adopt?
Have you told anybody that you are using ART?
Who knows that you are using ART?
Will you tell your child about the way it came into being?
Have you sought for emotional support with a professional?
Do you look for information on the topic?
Where do you look for this information?
Why do you want to have children?
Have you ever thought of putting a limit to the number or type of treatments to use?
Which is the limit?
How would you describe infertility
Why can't you have children?

Annex 4 Initiatives presented by the Mexican Parliament			
Reference	Party	Title	Location
Gonzalez-Martinez, 1999.04	PVEM	Regulate ART, the disposal of genetic material and create a NOM	GP 252, p.12-23
Lopez-Brito, 2002.09	PAN	Regulate research and the use of ART	GP 1097, p.53-57
Leon Lerma 2003.03	PRI, PRD, PT, PVEM	Prohibit reproductive cloning	GP 1221, p.7-11
Prieto Furken, 2003.04	PVEM	Prohibit human cloning	GP 1240-1, p.55-58
Rodriguez-Diaz, 2004.04	PRI	Regulate ART	GP 148-1, p.79-94
Garcia-Tinajero, 2004.12	PRD	ART	GP 1639-1, p.28-37
Martinez-Alvarez, 2005.02	CON	Include the term AR in the family planning laws	GP 1699-1, p.4-6
Gastelum-Bajo, 2005.02	PRI, PRD	Reproductive health	GP 1694-1, p.27-34
Diaz-Salazar, 2005.04	PRI	Attention to the infertile couple	GP 1725-1, p.70
Martinez-Alvarez, 2005.04	CON	Include the term AR in the family planning laws	GP 1735-1, p.8-15
Diaz-Salazar, 2005.05	PRI	Attention to the infertile couple	GP 1749-1, p.90-96
Ortiz-Dominguez, 2005.05	PAN	Penalize genetic manipulation and cloning	GP 1749-1, p.47-49
Camarillo-Zavala, 2006.03	IND	Stem cell research	GP 1961-1, p.32-35
Ortiz-Dominguez, 2006.08	PAN	Include the term Embryo in the General Health Law	GS 14
Morales-Sanchez, 2007.02	PRD	Cloning	GP 2189-11, p. 35-38
Esteva-Salinas, 2007.12	CON	Law on AR	n.a.
Castro-Trenti, Saro-Boardman, 2008.04	PRI, PAN	Assisted Human Reproduction Law	GS 237
Data obtained from the website of the Parliament. GP > Gaceta Parlamentaria (Chamber of Deputies) GS > Gaceta del Senado (Senate)			

Annex 5 Glossary

Acronym	Name	Translation
AMI	Asociación Mexicana de Infertilidad	Mexican Infertility Association
AMMR	Asociación Mexicana de Medicina de la Reproducción	Mexican Association of Reproductive Medicine
CCF	Código Civil Federal	Federal Civil Code
CENATRA	Centro Nacional de Transplantes	National Transplant Center
CNEGySR	Centro Nacional de Equidad de Género y Salud Reproductiva	National Gender Equity and Reproductive health Center
COFEPRIS	Comisión Federal para la Protección Contra Riesgos Sanitarios	Federal Commission Against Sanitary Risk
CONAPO	Consejo Nacional de Población	National Population Council
COMEGO	Consejo Mexicano de Ginecología y Obstetricia	Mexican Council of Gynaecologists and Obstetrics
CONAMED	Consejo Nacional de Arbitraje Médico	National Council for Medical Arbitration
CPF	Código Penal Federal	Federal Criminal Code
INMEGEN	Instituto Nacional de Medicina Genómica	National Institute of Genomic Medicine
IMSS	Instituto Mexicano del Seguro Social	Mexican Social Security Institute
ISSSTE	Instituto del Seguro Social Servicio de los Trabajadores del Estado	Social Security Institute for the State Workers
INNSZ	Instituto Nacional de la Nutrición Salvador Zubirán	National Institute of Nutrition
PEMEX	Petróleos Mexicanos	National Petrol Company
Red LARA	Red Latino Americana de Reproducción Asistida	Assisted Reproduction Latin American Network
UAM	Universidad Autónoma de Metropolitana	Metropolitan Autonomous University
UNAM	Universidad Nacional Autónoma de México	National Autonomous University of Mexico
LGS	Ley General de Salud	General Health Law
LGP	Ley General de Población	General Population Law
SS	Secretaría de Salud	Ministry of Health
SEDENA	Secretaría de la Defensa Nacional	Ministry of Defence