The Normativity of Nature: Morality, Variability and Kinship in the Gamete Exchange

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I hereby declare as follows:

That I am the author of this thesis, and that I have exercised reasonable care to ensure that the Work is original, and does not to the best of my knowledge break any UK law, infringe any third party's copyright or other Intellectual Property Right, or contain any confidential material. Should at any point any individual, company or institution feel that copyright has been in some way infringed, they should contact the author of this thesis at the following email address: lucia.ariza@gmail.com

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As a project that involved moving to another country, long-haul flights, the paying of fees in 'a foreign currency', writing in English while researching in Spanish, finding different places to live and getting used to a new academic environment, this thesis is the result of a long chain of 'material arrangements' that implied a considerable amount of planning, organising and, certainly, the participation of non/other/different-to human entities. Yet 'above' all these, and because in this case the agency of the latter fails to justify a prerogative of symmetry, this project was only possible because I have been constantly surrounded, during the past five years, by an unquantifiable amount of love, encouragement and material support, without which I would have never been able to finish satisfactorily.

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Abstract

The thesis examines the conditions under which nature is normatively performed in Argentinean fertility clinics. Looking at the use of donated gametes as one particularly telling assisted procreation practice hailed as de-naturalising, even more than 'conventional' in vitro fertilisation, the 'facts of life', the thesis explores the extent to which 'nature' may still be implicated in donor conception. This overarching question is answered through the focus on three key problems. These are, first, the attempt to produce exchanges of reproductive material as moral, non-economic exchanges; second, the effort taken to produce physical coherence between parents and donor children; and, third, the endeavour to ensure that the population comes out as naturally varied given that this is prescribed by the healthiness of genetic variation. In dealing with these three sets of issues, the analyses presented in this thesis prove that in Argentine fertility medicine nature is normatively enacted, materialised as a construct that guides how medicine is performed, while producing as its results the nature of individuals and populations as pertaining to abstract and concrete kinds. These kinds encompass, in the former case, the donor and the recipient, the sibling, the offspring, and the fertility doctor, while the latter refers to the normative enforcement of a certain version of Argentine Whiteness, as a concrete kind which is preserved and prioritised.

The thesis subscribes epistemologically and methodologically to the studies of science and technology, from whom it takes an interest in the material workings of science, and with which it shares an understanding of reality as enacted in sociomaterial arrangements that include the agency of humans and nonhumans. Looking at such investments, and making use of the notion of normativity, the thesis makes a contribution to the study of kinship and reproductive technologies from a material perspective.

Contents

Glossary

ANT: Actor-Network Theory

APA: Asociación Psicoanalítica Argentina (Argentine Psychoanalytic Association), Argentina

ART: Assisted reproductive technology

ASRM: American Society of Reproductive Medicine, US

DI: Donor insemination, when sperm from a donor is screened and introduced into a woman's uterus with the aim of fostering fertilisation.

ESHRE: European Society of Human Reproduction and Embryology, EU

EVMS: Eastern Virginia Medical School at Norfolk, Virginia, US

GIFT: Gamete Intra-Fallopian Transfer

HCDN: Honorable Cámara de Diputados (Honourable National Chamber of Deputies, House of Representatives), Argentina

HFEA: High Fertility and Embryology Authority, UK

ICI: Intracervical Insemination

ICF: Informed consent form

ICSI: Intracytomplasmatic Sperm Injection, where a single sperm is selected and injected into an egg in order to fertilise it. The resultant embryo is transferred into a woman's womb.

IUI: Intrauterine Insemination. Selected sperm are introduced into a woman's uterus at her most fertile period.

IVF: In Vitro Fertilisation, technique where eggs removed from the ovaries are fertilised by sperm in a Petri dish. Once the embryo has formed, it is transferred to the woman's womb.

OED: Oxford English Dictionary

PGD: Pre-implantation Genetic Diagnosis, a technique whereby a cell from an embryo is extracted (embryo biopsy) and diagnosed in regards to it carrying a genetic disease

PMO: Plan Médico Obligatorio (Obligatory Medical Plan)

RAE: Diccionario de la Lengua Española, published by Real Academia Española (Dictionary of the Spanish Language, published by the Royal Spanish Academy, Twenty-Second Edition)

RAFA: Registro Argentino de Fertilización Asistida (Argentine Register of Assisted Fertilisation)

Redlara: Red Latinoamericana de Reproducción Asistida (Latin American Assisted Reproduction Network), Latin America

SAMER: Sociedad Argentina de Medicina Reproductiva (Argentine Society of Reproductive Medicine), Argentina. Frequently referred to as 'the Society'.

SART: Society for Assisted Reproductive Technology, US

SCNT: Somatic Cell Nuclear Transfer, a technique whereby the nucleus of an adult cell is inserted into an enucleated egg. The egg is then induced to divide, forming a blastocyst genetically similar to the adult cell.

SCR/hESCR: Stem Cell Research and Human Embryonic Stem Cell Research, research that is done with stem cells, which are derived from the pluripotent cells of a blastocyst or five-day embryo (hESC) and potentially used to cure the patient (donor of the embryo) without fear of immunological responses

STS: Science and Technology Studies

TOMI: Transferencia de ovocitos micro-inyectados (Transfer of Micro-Injected Oocytes). An ART technique developed in Peru, it consists in transferring oocytes that have been microinjected right before embryo transfer. Its main advantage is that the microinjected oocyte is transferred into its natural setting

Preface: Reproductive technologies in Argentina

'High complexity' technologies for assisting reproduction, most predominantly conventional in vitro fertilisation (IVF)[1], have been used in Argentina since at least the mid-1980s, when a group of medical doctors and biochemists gathered around prominent gynaecologist Roberto Nicholson started to rehearse laboratory procedures developed in core countries with the aim at producing the local fertilisation of an egg outside a woman's body. Their efforts were successful in 1985, when a woman with blocked tubes from Tucumán, one of Argentina's most populated and deprived provinces, became pregnant and successively gave birth to twins in 1986.

The field of reproductive medicine has grown considerably since those initial attempts, and although there are no available official figures for total number of patients per year, it is clear that this number has continued to increase since the mid-1980s[2]. In the City of Buenos Aires alone, where this thesis is focused, there are currently twelve certified[3] centres in operation (fifteen including those in Greater Buenos Aires), and a number of uncertified ones, at some of which interviews were carried out for this research[4]. Yet despite this by now long trajectory of assisted reproduction technologies (ARTs) in Argentina, the field remains so far largely unregulated, with the exception of the Province of

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[1] Here and in the rest of the thesis, acronyms are fully quoted in the Glossary. A short explanation of the techniques is provided in the same place.

[2] Between 2000 and 2009 (the last year for which data is available), the number of ART cycles (a cycle being each initiated treatment) increased steadily, with the exception of 2000 and 2001when annual numbers remained the same or decreased by about 100 cycles per year. Such momentary stagnation was likely linked to the 2000-2001 financial and political crisis, which affected vast numbers of the population.

[3] Certification is granted by the Argentine Society of Reproductive Medicine (SAMER) on the basis of a voluntary submission on the part of the centre to be evaluated. Criteria to be taken into account in the certification process are decided by the Society and include the experience and responsibilities of the staff, the condition of the medical installations, the condition of the embryology laboratory, the centre's success rate, and the condition of the auxiliary laboratories (andrology, hormonal and genetic diagnosis labs). Additional criteria apply in the cases where the centre performs gamete donation, including provisions for medical, psychological and genetic screening of donors and recipients, and the use of informed consent forms.

[4] In the absence of formal legislation, certification by SAMER is by no means mandatory to offer services as a fertility centre, although it confers prestige and peer and patient recognition. It is, in this way, different to the UK's High Fertility and Embryology Authority's (HFEA) licensing system.

Buenos Aires Assisted Reproduction Act (discussed below) and the preliminary passing of a bill to widen access to ARTs (currently awaiting discussion in the Chamber of Senators).

According to the Argentine Register of Assisted Fertilisation (RAFA), in 2008[5] there were 4554 ovarian punctures[6] with own gametes[7], and 1959 cycles with transferred embryos from egg donation in Argentina (Mackey, 2011). Meanwhile, the Latin American Assisted Reproduction Network (Redlara) 2009 Report[8] states 9773 cycles for Argentina (a cycle being defined as each initiated procedure of IVF, intracytoplasmatic sperm injection (ICSI), gamete intra-fallopian transfer (GIFT) or transfer of micro-injected oocytes (TOMI) *plus* the transfer of frozen and thawed embryos, *plus* the transfer of frozen and thawed embryos from egg donation) (Zegers-Hochschild et al., 2009)[9]. Compared with statistics from a country like the UK, where there were 50.687 ART cycles in 2008, these numbers might not seem high, but their full significance is better appreciated when compared to those of other Latin American countries.

In effect, Argentina has consistently remained the second country in Latin America (after Brazil and before Mexico) with regard to number of cycles, in 2009 representing a quarter (25.7%) of the total number of cycles initiated in the region[10] (Zegers-Hochschild et al., 2009). Yet with its 40 million inhabitants[11],

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[5] This is the last year for which data is available in the RAFA.

[6] 'Ovarian puncture' refers to retrieval of the eggs from a woman's ovaries. Separate data for the year 2008 for initiated cycles is not available in the report, although it is believed that the number of initiated cycles is similar to that of aspirations.

[7] 'Own gametes' refers to treatment carried out with reproductive cells from the person or couple seeking conception.

[8] The Register records data on assisted reproduction treatment in the Latin American region since 1990. Centre participation in the Register is voluntary.

[9] Although there is a considerable difference between the figures provided by the Redlara Report and the RAFA, it should be born in mind that the Redlara Report presents results from 22 reporting centres, while the RAFA gives data only for 15 centres (reporting to both registries being voluntary). Furthermore, both reports measure cycles in slightly different ways (the Redlara Report accruing IVF/ICSI/GIFT/TOMI initiated cycles with their transfers and transfers of embryos from gamete donation, while the RAFA reports *aspirations* with own gametes and transfers of embryos from gamete donation). Finally, the figures correspond to two consecutive years, where the number of initiated cycles is expected to have increased.

[10] Brazil and Mexico perform the 41.6% and 12.1% respectively (Zegers-Hochschild et al., 2009).

[11] *Census 2010. Provisional results: charts and graphs.* (2010). Retrieved December 5, 2012 from Instituto Nacional de Estadística y Censos website: www.censo2010.indec.gov.ar/preliminares/cuadro_totalpais.asp.

Argentina is the *fourth*[12] largest country in the region in terms of population, way below Brazil (190 million[13]) and Mexico (112 million[14]), a fact that points to the salience assisted reproduction has acquired in Argentina in relation to the number of people affected by infertility, as a measure of total population. These statistics show that in Argentina 24.4 ART cycles are initiated every 100.000 inhabitants, while in Brazil this proportion is only 8.2, and in Mexico even lower, 4 cycles every 100.000 people[15]. Furthermore, these results are based on twenty-two reporting centres in Argentina, fifty-four in Brazil and twenty-five in Mexico, showing that Brazil and Mexico have a considerably lower use of ART in relation to total population, although availability is better.

Currently, fertility centres in Argentina supply the most common assisted reproduction treatments, including conventional IVF and ICSI with embryo transfer to the womb, and GIFT/TOMI, when gametes are transferred to the Fallopian tubes[16]. The bulk of treatments are, however, either IVF or ICSI, the latter not only being the most predominant intervention, but also showing a notorious increase in the period 2004-2008[17]. Intrauterine insemination (IUI) with (DI) or without (IUI) sperm donor is also performed, while IVF and ICSI

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[12] Argentina is the fourth largest country in terms of population in Latin America, below Brazil, Mexico and Colombia. Nevertheless, Colombia's proportion of ART cycles per year in relation to total population is much lower than those of the three countries above (0.003 cycles per 100.000 inhabitants).

[13] *Census 2010: Brazil's population is of 190.732.694 persons.* (2010). Retrieved December 5, 2012 from Instituto Brasileiro de Geografia e Estatística website: www.ibge.gov.br/home/presidencia/noticias/noticia_visualiza.php?id_noticia=1766.

[14] *Number of inhabitants.* (2010). Retrieved February 15, 2012, from Instituto Nacional de Estadística y Geografía website: http://cuentame.inegi.org.mx/poblacion/habitantes.aspx?tema=P.

[15] For comparative purposes, the UK had in 2008 a ratio of 81.4 cycles initiated every 100.000 people (calculated using the HFEA Fertility Facts and Figures 2008).

[16] The Fallopian tubes are a part of the female reproductive system where fertilisation takes place. GIFT/TOMI are two ART techniques in which gametes are deposited in the tubes rather than the embryos transferred to the womb, as in IVF/ICSI.

[17] ICSI increased from representing the 68.7% of all treatment in 2004, to representing the 86% in 2008, while IVF decreased from 30.5% to 13.7% in the same period (Mackey, 2011). These figures contrast with those from the UK, where ICSI represented 48% of all treatment in 2008 (HFEA, 2010). Originally devised as a technique to deal with male infertility, it is obvious that ICSI is the preferred technique in the greatest number of cases and independently from which is the factor of infertility (female/male). This is probably the result of the greater control that ICSI allows over the fertilisation process, which produces higher success rates than in the case of IVF.

are also carried out with donated sperm and eggs[18]. Increasingly common genetic screening procedures like Pre-Implantation Genetic Diagnosis (PGD) are also available at a handful of centres in Argentina, while the Argentine state has recently funded a number of initiatives to carry out embryonic stem cell research, presumably with human embryos, although the source of these has remained undefined[19].

The above illustrates that for the more than twenty-five years during which they have been accessible in Argentina, ARTs have not only firmly increased their reach and established themselves as one of the most sought after responses in the event of unwanted childlessness, but also gained a preponderant role in Latin American practice, at least in terms of number of cycles carried out per year and in relation to the country's population. Due to the good quality of care and renowned professionalism of the sector, Argentina is today also a frequent destination for people from both border and developed countries seeking to undergo treatment, especially from places where there is not a substantively developed market (such as Ecuador, Colombia and Peru), or where restrictive legislation, heavy demand and high costs make it difficult to access certain treatments (like the US, Canada or Italy)[20].

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[18] Apart from those quoted above for the case of egg donation, there are no available separate figures for DI.

[19] A news article in the science portal Science and Development Network announced in March 2011 that Argentina would co-fund with Brazil embryonic stem cell research, stating that while Brazil has regulated stem cell research, Argentina has not. Brazil's legislation allows limited human embryonic stem cell research (hESCR) and has been opposed, among other actors, by the Catholic Church (García, L. (2011, March 18). Argentina will fund stem cell research. *Science and Development Network*. Retrieved February 27, 2012 from *Science and Development Network website*: http://www.scidev.net/en/news/argentina-launches-fund-for-stem-cell-research.html.). According to Shawn Harmon, 'Argentina is one of a handful of developing countries taking steps to build a competitive domestic market [of regenerative medicine and stem cell solutions to health problems]' (2008: 139), yet I would add that the extent to which this might be a governmental project sustained in time remains to be seen.

[20] Besides being commented upon by practitioners, this situation has been reflected in the media. In an article in BBC Mundo, an academic from the University of Montreal is quoted as saying 'We think that there is the need to establish national regulatory mechanisms in countries like Argentina which are promoting fertility services to local and international publics' (Heads Up on Reproductive Tourism. (2009, October 8). *BBC Mundo*. Retrieved February 24, 2012 from the BBC website: http://www.bbc.co.uk/mundo/ciencia_tecnologia/2009/10/091008_turismo_reproductivo_men.shtml).

Numbers, however, can be misleading. Although the figures mentioned above may show how many ART treatments are used as a measure of total population, they do not say *who* has in fact access to them, while they also probably reflect the repeated use by some patients[21] who try a second or even third time in the same year, after treatment has been unsuccessful. Of eminently private character, ARTs are not generally available in Argentina either as part of care provided through the public health system[22], or that provided through private health insurers[23]. Treatment is in actual fact almost always accessed by payment of usually high fees to private centres[24]. Argentina may proportionately have a high number of cycles initiated per year in relation to population, yet those who in fact access treatment are members of the middle and upper classes who can afford to pay the fees, sometimes at great personal and family expense[25].

The situation above has slowly started to change, however, in recent years. In December 2010 the Province of Buenos Aires passed a bill to widen access to treatment to those who cannot afford the costs, both compelling private health insurers to provide treatment to those diagnosed with a reproductive impairment, and ensuring services are supplied through the public system for those not insured. Although having a limited geographical impact the Province of Buenos Aires Assisted Reproduction Act has only reached a small portion of those affected, the measure is remarkable both for being the first

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[21] The measure in effect is that of initiated cycles, not of number of patients.

[22] There is currently very limited access through the public system at the Hospital de Clínicas, Buenos Aires City.

[23] ART treatment is not included in the Medical Obligatory Plan (MOP), the instruction stipulating which medical services private health insurers are compelled to cover. This absence has been the main argument used by private companies to deny treatment to those diagnosed with a reproductive impairment, while it has also been the main reason behind civil society demands to regulate the practice (Ariza, 2011).

[24] In 2009, these figures were of the order of U$S4000-U$S5000 (£2600-£3200) for a single cycle, and can be contrasted with the setting of the minimum monthly wage in approximately £200 for the same period (Minim wage fixed on $1400 [Electronic version]. (2009, July 28). *Perfil*. Retrieved October 10, 2012, from Perfil website: http://www.perfil.com/contenidos/2009/07/28/noticia_0039.html).

[25] Stories of people having to sell their cars, refinance their mortgages or move to a smaller dwelling to afford treatment are common among Argentine ART patients and have been often reported in the media (see for example Lema, C. (2011, January 9). Assisted fertility: keys of the new law. *La Nueva Provincia.Com*. Retrieved October 9, 2012, from La Nueva Provincia website. http://www.chicagomanualofstyle.org/tools_citationguide.html).

piece of legislation concerning ART in Argentina, and for underscoring the significance that issues of access to treatment have.

In addition to the above, as this thesis was being finalised during June 2012, the Chamber of Deputies of the National Congress preliminary passed a bill to include 'procedures and medical-welfare techniques of Medically Assisted Reproduction' within the MOP. If also passed by the Senate, this is a move that will compel private and public health providers to supply assisted reproduction at no monetary cost for every person who needs it, without access being limited in accordance with sexual orientation and marital status being. The measure, hailed as having an 'inclusive, fair and responsible scope that does not leave any group outside'[26], is noticeable for its permissiveness (allowing a wide range of procedures including gamete donation and cryopreservation), yet it is likely to be opposed by the most conservative sectors of society, as I discuss below.

Such is the reproductive medicine scenario on which this thesis was based. It was characterised, until a few months ago, by limited access to treatment due to the high costs and exclusively private supply, together with a well developed and highly professionalised field with institutions, annual conferences and journals, yet one which has remained so far largely unregulated, and whose procedures thus lack wider and international recognition. Assisted reproduction was until very recently somewhat of a luxury commodity, a form of consumption restricted to the middle and upper classes who, descendants of European immigrants, feel distant from the problematic of the rest, like the population in indigenous and malnourished Tucumán. In the next paragraphs, I provide a more detailed account of the specific assisted reproduction practice that will be reviewed in this thesis.

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[26] Améndola, S. (2012, June 28). Fertility treatment, a right [Electronic version]. *Página/12.* Retrieved June 28, 2012 from Página/12 website: http://www.pagina12.com.ar/diario/sociedad/3-197406-2012-06-28.html.

Egg and sperm donation: the origins of a field of exchange

Egg and sperm donation, the two reproductive practices on which this thesis focuses in more detail, are both currently practised in Argentina, yet the history of their respective development is widely different. Starting with the case of egg donation, I recount in the following paragraphs the process of their emergence and consolidation as a reproductive practice, providing a broader picture of the implications of their emergence in the Argentine context.

Argentina has consistently had low regional indexes of fertility[27], having initiated its fertility transition[28] at a comparably early time in relation to other countries of the Latin American region (Pantelides, 2002; Pantelides & Moreno, 2009). With its high indexes of female literacy, high participation of women in paid work and high maternal age at first child[29] (Mazzeo, 2004), Argentina seems reasonably predisposed to an extended use of egg donation. In effect, as the media reports[30] and many practitioners in this research have continued to emphasise, 'ovodonation' is increasingly in demand, boosted by the consolidation of the medical supply, its appealing high rates of success, and the rise in the average age of women seeking treatment.

To give an idea of these catalysts, while the general (IVF/ICSI) success rate for 2004-2008 is 26%, it reaches 41.02% in the same period for the case of

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[27] According to Pantelides & Moreno (2009), Argentina showed indexes of fecundity lower than the Latin American average until the end of the 1990. Since then, its rates have been equal or only slightly inferior to the regional mean. However, it is unquestionable that low and late fecundity is still a trend in Argentine middle classes, as is proved by data in footnote 29.

[28] Fertility transition refers to the decline of birth rates as a result of development and industrialisation. Argentina's fertility transition took place earlier than that of other countries of the Latin American region (except Uruguay), and was almost contemporary with many European countries (Pantelides, 2002).

[29] According to Mazzeo (2004), the average age of women at first union (legal or consensual) in the City of Buenos Aires increased from 26 years old in the 1980s, to 28 years old in the 1990s, and it has been higher than 30 years old in the 2000s. This rise of age at first union is corroborated by average female age at first child, which was between 26 and 28 years old between the 1980 and 1990 decades, and is above 29 years old in the 2000s. In Mazzeo's analysis, based on life statistics, the fecundity rate by age rose from being higher in the 25-29 years old group in 1991, to being higher in the 30-34 group in 2001.

[30] For example, Sainz, C. (2006, July 18). Special Report: Egg Donation [Electronic version]. *Clarín*. Retrieved July 11, 2008 from Clarín website: http://edant.clarin.com/suplementos/mujer/2006/07/18/m-00611.htm.

egg donation (Mackey, 2011)[31]. Likewise, during the same five-year period, while the percentage of women under 35 being treated decreased from 46.83% to 38.90%, that of women between 35 and 39 increased from 35.39% to 41.3%, and that of 40 or over between 17.78% and 19.8% (Mackey, 2011)[32]. Probably taking the above as catalysts, 'ovodonation' increased from 281 transferred cycles with fresh embryos in 2004 to 1136 in 2008, and from 26 transferred cycles with frozen embryos in 2004 to 323 in 2008 (Mackey, 2011), a 400% rise and 1200% rise respectively.

The figures mentioned above suggest that although female age is not the only medical indication for egg donation, there seems to be a relation between the increase in the percentage of women over 35 using some kind of reproductive technology[33], and the increase in egg donation. Or at least it should be pointed out that this is the link spontaneously made by several people interviewed for this research, an association that was frequently followed by a statement about the reduction of female fertility with age[34]. These statements need to be thought as part of the pathologization of the 'aged' female body and consistent with the increasing medicalization of the aging reproductive body.

Yet this increase in the amount of women over 35 resorting to reproductive technology is possible in Argentina due in part to a characteristically local phenomenon, namely, the large availability of donors. Why are there so many women donating in Argentina? For one thing, fees paid as compensation for the donation are usually very high, doubling the monthly minimum wage in

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[31] Informally, many practitioners interviewed for this research stated that general ovodonation success rate is 50%.

[32] It should be born in mind that the period between 35 and 39 years of age is medically held to be the time when female fertility starts to 'decrease' more abruptly. This leads medical statistics to be presented accordingly, for example general success rate is 32.99% below 35 years, 28.31% between 35 and 39, and 12.13% in women over 40 (Mackey, 2011).

[33] According to one interviewee, the average age of recipient women at her centre is 42-43 years old.

[34] A doctor said that female fertility was like a 'cookie tin': 'When it's full, you tuck your hand inside and reach easily for a whole cookie, yet when the tin is almost empty it's difficult to find a cookie, and the ones you get are broken or in halves' (Gynaecologist 4). Such a story was only the most animated one in ubiquitous talk about the 'quality of eggs', their finiteness in a woman's body and the consequent decrease of female fertility with age. News and other media articles have frequently echoed such narratives with articles headlined as 'Putting back the clock' and the like.

October 2009[35]. Additionally, the lack of regulation implies that there is no legal obligation for the donor to accept the disclosure of her identity, as happens in other countries like the UK, where it is held as the main reason for the fall in donor numbers since the measure introduced in 2005[36]. In the face of no formal regulation, most centres (but by no means all) keep records of donors in the event that information about them might be needed in the future, a practice that is recommended by institutions like the American Society of Reproductive Medicine (ASRM)[37].

Yet this wide availability of donors (which distinguishes Argentina from some developed countries like the UK, where there is rather a shortage of gametes[38]), is a relatively recent phenomenon. In effect, as some interviewees recount, 'in the beginning' of egg donation in Argentina, around 1988-90, ova were not easy to obtain, as they were mainly sourced through patients undergoing treatment who agreed to donate some of their ova to another patient. According to some doctors, the fact that ova were procured from patients impacted upon the quality and quantity of eggs, since these were donated by donor-patients who usually had some kind of reproductive impairment themselves[39].

It appears that at this early stage, donations were not organised upon the basis of exchange but, rather, of 'spontaneously' altruistic acts, although it is highly probable that medical recruiting or 'coaching' were also important factors. Patients would donate part of their ova 'cohort' to other women in need without receiving money or other incentives in return (for example, a reduction in the

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[35] As a measure for comparison, in the UK compensation for egg donation is usually around a quarter of the minimum monthly wage.

[36] *Shortages of Egg and Sperm Donors*. (2011). Retrieved October 10, 2012 from HFEA website: http://www.hfea.gov.uk/6190.html#shortages.

[37] See for example ASRM (2008).

[38] London Bridge Fertility, Gynaecology and Genetics Centre. (2010, April 12). Gamete Donation in the UK: Time to Think Again. *Bionews*. Retrieved October 10, 2012 from Bionews website: http://www.bionews.org.uk/page_58241.asp?hlight=shortage+of+gametes.

[39] Although most practitioners interviewed argued the historical need to switch to a 'pure donor' system on the basis of the 'poor' quality of ova sourced through patient-donors, one practitioner reasoned that in those early days those donating were either healthy women with an infertile partner, or women with a diagnosis (usually of 'mechanical' cause) that did not interfere with the production of ova.

treatment fees, medical care, medical interventions, etc)[40]. These donations can be characterised as 'spontaneously altruistic' since, although probably encouraged by medical staff, they were not the result of an institutionally produced altruism like the one I examine in Chapter 5.

This previous scheme, where patient-donors donated the 'excess' ova 'in a free and anonymous manner', as one of my interviewees, Gynaecologist 7, stated (see Chapter 5), was based upon a few sociotechnical and biological specificities. First, insofar as there was no available technology that would allow eggs to be cryopreserved and – most importantly - safely thawed[41], the system was built upon the premise of 'waste'. Eggs that were not used during a single cycle had to be used to form embryos or wasted. Although at this stage reproductive clinics appear to have been preserving most or all of the embryos they produced, it is clear that even the most conservative practitioners would have been reluctant to preserve an extraordinary number of embryos, especially if these had an unclear future (for example if the person or couple seeking conception already had children). Having these surplus ova donated would have appeared then as an attractive solution. Second, because in many cases patient-donors would have been healthy women with an infertile partner, or women with a diagnosis not affecting their production of ova, there was arguably a good number of eggs being produced in each cycle, with identical surplus as above. Third, at this stage (the final years of the 1980s), stimulation schemes were very 'aggressive' (Gynaecologist 7), with high numbers of ova being produced due to the elevated doses of hormones being administered, a fact that must have induced the search for alternative destinations for the ova produced.

The progressive generation of a field of exchange where, if ova did not have a 'price' (as they do today) they were certainly increasingly regarded as the product of labour, the object of a desirable exchange, and the reason for offering compensation, appears to be the result of a convergence of somewhat

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[40] It seems that a system of non-monetary incentives (medical care, gifts, etc.) was unusual, although the extent to which it might have been used occasionally remains to be researched.

[41] Until recently, when vitrification techniques have started to be more common, ova were characteristically more difficult to cryopreserve than embryos and sperm, as they did not survive the thawing process, or survived it with a considerable 'decrease' in their quality.

contradictory factors. On the one hand, in contrast with the present demands of the current global markets in ova, there was a need to reduce the number of ova available for generating embryos with an uncertain future. On the other, the 'biological model'[42], with the realisation that donated ova exponentially boosted the success rates of IVF, which resulted in an increase in waiting lists and the generation of an imbalance between supply and demand. And in the middle, sociotechnical changes such as the moderation of hormonal induction schemes (with the double consequence that patients produced fewer ova and that 'pure donors' could be more safely stimulated), and the improvement of cryopreservation techniques (with the result that more patients would be interested in preserving embryos formed with their own ova), both of which produced a considerable reduction in the availability of ova from donor-patients.

All the above helped to configure the need for an easier, safer and, fundamentally, 'more productive' way of sourcing eggs so as to boost the discovered potentialities of egg donation. This was in fact the beginning of a proper field of exchange, when centres started to monetarily compensate 'pure donors' – that is, women who 'only' donated – and thus to encourage the expansion of egg donation based on the transaction of ova between a donor and a recipient, mediated through a fertility centre. As far as I have been able to establish in this research, money is currently the most important form of compensation for egg donation in Argentina, with no other schemes such as 'paid to share' or similar used for example in procuring ova for stem cell research in the UK (Roberts and Throsby, 2007). Non-monetary donations between relatives or friends are rare (although they do take place occasionally) and are discouraged on bioethical and psychological grounds by the institutions in the field[43]. In addition, most fertility centres operate on the basis of 'shared donor'

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[42] According to one interviewee, patient-to-patient donation worked as a 'wonderful biological model', insofar as it enabled comparison of the ways embryos formed with eggs from the same woman produced different results in two or more women (Gynaecologist 7).

[43] 'Conflicts of interests', including contested prerogatives over the donor child, are the most frequent potential problems quoted by practitioners as arising from intra-family or friend-to-friend donation. SAMER's Code of Ethics in Assisted Reproduction (2012: 9) states that 'It is advised that anonymity between the donor and the recipient is sustained, and that donor and recipient are not joined by any type of bond'. SAMER's 2006 Counselling guidelines on gamete donation also assert that 'in donors recruited by patients it is necessary to assess if there is any

schemes, where a single ova cohort[44] from one donor is 'shared' among two or three recipients, an arrangement designed to increase the productiveness of the donation.

As the foregoing shows, egg donation developed in Argentina not many years after the first successful IVF treatment took place in 1985, and following a first development on the basis of patient-donor eggs, the field became established more firmly through the exchange of ova for monetary rewards. Today, the previous two-year waiting list has been replaced by a fast response system, and a person seeking conception through donor eggs may expect to have a very short delay of fifteen days to a month. The old scarcity of donors appears thus to have disappeared, and a constant flow of donors is a characteristic feature of the field.

Sperm donation, on the other hand, shows a different picture altogether. As in many other countries around the world, it is a much older practice than egg donation, the first attempts worldwide having been made as early as the 19th century. Although heterologous sperm insemination[45] might have been practised very occasionally with fresh sperm and at private practices in the care of andrologists, the history of sperm donation is tightly tied (in Argentina and worldwide) to that of changes in the available IVF technology, as well as to changes in the socio-cultural context of its use. In Argentina, the vast majority of sperm donations are managed through fertility centres, which source sperm through the few established sperm banks (most clinics do not hold a private bank internally as part of their organisation). During the interviews carried out for this research, however, there were the testimonies of doctors who stated that they had used fresh sperm in the past and that they had sourced it directly from the donor, although these arrangements seem to have been very rare and by no means customary.

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type of financial or emotional coercion' (Fernández et al., 2006: 29). The website of an important sperm bank also states: 'Traditionally, anonymous donors have been used, and this is the practice encouraged' (*A sperm bank in Argentina: 15 year of experience.* (2012). Retrieved October 10, 2012 from Cryobank website: http://www.cryo-bank.com.ar/doc_revis.htm).

[44] An 'ova cohort' is the total amount of eggs that are retrieved from a donor in a single extraction.

[45] This is, the use of sperm from a man to inseminate a woman who is not his partner.

More frequently, sperm banks developed their niche in Argentine fertility economy by being in charge of procuring, testing, preserving and distributing sperm. They are responsible for supplying fertility clinics, who outsource their need of sperm for gamete donation procedures. Established by a doctor who had qualified in the US and who imported the model for the local public, the first sperm bank was founded in Argentina in 1988, almost contemporary to the emergence of IVF. From this point, at least two important phases in the local development of sperm donation can be distinguished.

The beginning of the first stage coincides with the commencement of IVF in the country during the mid-1980s, when the first fertility centres were being established and the field was starting to consolidate itself. What is now the most important sperm bank (Cryobank Banco de Semen) was set up at the same time as these centres and developed by sourcing the clinics with sperm for cases of male infertility, which was difficult to solve with the available IVF technology. At this stage, sourcing sperm was vital for fertility clinics where there was a severe male factor (male infertility), insofar as conventional IVF relied heavily on the availability of adequate quantities of 'good quality' sperm. Where these satisfactory quantities and qualities were not present, fertility clinics needed to procure semen somewhere else, and the role of the sperm supplier was crucial here.

However, with the advent of ICSI, donor sperm became somehow outdated, at least to the extent that it no longer provided the one and only solution to severe male infertility. (By using micromanipulation techniques, ICSI facilitated the insertion of a selected sperm cell into the egg and hence made some male infertility treatable in the laboratory.) Consequently, sperm suppliers saw their demand decrease. This was the beginning of the second phase, when sperm banks started to slowly diversify the public they served. Currently, sperm banks have re-targeted their services to less traditional audiences like single women and lesbian couples, although treatment to these groups is by no means provided by all centres, due to the previously-stated moral reasons.

Unfortunately, the lack of a national regulator of IVF in Argentina means that, as in the case of egg donation, there are no official figures that can provide a quantitative idea of the incidence of sperm donation in the country. In 2011, SAMER presented the results of the RAFA, but this does not provide separate data for the case of donor sperm use. Similarly, data referring to ICSI presented in this report cannot provide an accurate idea of the amount of sperm donation in Argentina, since as indicated above, ICSI is the preferred technique used in the majority of cases and in that sense not used specifically for the treatment of male infertility.

As in the rest of the world, donated sperm is used in Argentina both in the case of low complexity (IUI and intracervical insemination (ICI)), and high complexity techniques (IVF, ICSI and GIFT). Most treatment with donor sperm is, however, made viable through IUI and to a lesser degree ICI, especially since ICSI has considerably reduced conception failures with the sperm of the future father. Indication to use more sophisticated technologies than DI occurs only in the event of combined (female and male) causes of infertility, which in Argentina are around 31% (Mackey, 2011).

As with all other ARTs more generally, the use of donor sperm remains largely unregulated in Argentina, and 'good practice' follows from the local adaptation of global guidelines which are not, however, binding agreements. SAMER recommends that centres follow ASRM/SART guidelines regarding issues like anonymity and payment. In relation to the first of these matters, although most sperm donation is anonymous with confidential preservation of a donor record, some doctors interviewed for this research said that in some cases records had not been kept, and that the identity of the donor was therefore irretrievable. In relation to the second one, most DI performed in Argentina is financially rewarded, although being about a third of a monthly wage in October 2009 the amount of the pecuniary reward is largely lower than that offered in the case of egg donation.

The legal-ethical-cultural debate

As Argentina is a country with a Catholic majority, the legal, ethical and more widely cultural panorama in relation to ARTs has been characterised by often sharply opposed visions regarding what reproductive technology should aim to do and how should it be regulated. As was mentioned above, the recent passing by the Chamber of Deputies of a bill proposing to widen access to IVF was argued on the basis of an inclusive and non restrictive reasoning according to which fertility treatment should be made available to all those that need it. Part of a form of progressive politics heralded by the present government[46], reforms like this one have encountered, and will most probably go on encountering, intense opposition from more conservative sectors of society. As in many other aspects concerning issues of personhood, rights, identity and the human body, the debate around ARTs in Argentina has frequently taken the shape of an opposition between science and religion. And although this thesis is not focused on the relation between religion and ARTs, it is worth noting that the frequent opposition between scientific and religious views has also been framed as a conflict between nature and that what falls outside it, or is non-natural, a point which is highly significant for the arguments made in this thesis.

As it is widely known, the Catholic dogma opposes IVF[47] on the basis of fertilisation taking place outside the body, and of the consequent manipulation of an embryo which is granted the status of a human person before implantation in the womb has occurred. The Instruction *Dignitas Personae* also opposes most forms of high complexity reproductive medicine on the basis of the selection and discarding of embryos[48]. Although these arguments have a complex and not

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[46] Most of these interventions attain the proposals for reform of the Argentine Civil Code, which is the legal directive regarding civil matters. Recent amendments and projects for change include the 2010 passing of the Egalitarian Marriage Act, granting the right to marriage between same-sex couples, and the current (2012) debate concerning the Gender Identity Bill, granting persons the legal right to change their gender. The still illegal character of abortion remains the central aspect of this process which is difficult to transform.

[47] Treatments like GIFT or IUI, where fertilisation occurs inside a woman's body, are the subject of a different kind of objection by the Catholic Church, insofar as they rely on masturbation for the procurement of a semen sample, and they are generally considered a substitution for the 'conjugal act' of sex.

[48] Congregation for the Doctrine of the Faith. (2008). *Instruction Dignitas Personae on Certain Bioethical Questions*. Retrieved February 22, 2012 from the Vatican website: http://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_20081208_dignitas-personae_en.html.

straightforward incidence in a country with a majority of observant Catholics[49], they constitute the core of the confrontation between religious and scientific views.

In effect, Catholic doctrine has informed most of the more radical actions against the expansion of assisted reproduction. It has explicitly underpinned, for example, a number of bills banning IVF/ICSI altogether[50], or the legal action initiated in 2003 against fertility centres by lawyer Ricardo Rabinovich, who called for the protection of 'the lives and/or physical or psychical health of un uncertain but determinable group of incapable[s][51]' (Calise, 2011). Although the recent passing of an Act widening access to treatment, together with the fact that an increasing number of people choose to undergo treatment, may make such measures appear somehow redundant, their recent occurrence testifies the importance that such matters have in Argentina[52].

In the face of such initiatives, institutions like SAMER have argued their positions in explicitly oppositional terms, officially stating (for example in the case of cryopreservation) that 'this Society cannot support expressions saying

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[49] Elizabeth Roberts's (2007) ethnography of IVF in Ecuador presents an interesting discussion of the complexities entailed in the recourse to reproductive technologies in a Latin American country with a strong Catholic tradition, like Argentina. See also Ariza (2008, 2010).

[50] One bill proposes, for example, that 'Artificial fertilisation or medically assisted human fertilisation is forbidden (…) Technical means that do not substitute the sexual act, but which help to achieve its natural aim are allowed (...) The practitioner or technician who applies any artificial fertilisation method will be punished with an imprisonment of six months to two years', while making explicit recourse to the Catholic dogma as its justification: 'I will read one extract from the Bible, bedside book of many legislators, and I will then proceed with the issue' (Avelín de Ginestar, N. (2005) *Bill 'Protection of the Human Rights of Persons to be Born'*. Retrieved December 4, 2007 from Argentine Senate website: http://www.senado.gov.ar/web/proyectos/verExpe.php?origen=S&tipo=PL&numexp=582/05&nro_comision=&tConsulta=3). It should be noted, however, that many bills addressing the issue of reproductive technologies presented to the Argentine Senate aim at regulating what they consider already established practice, rather than banning it altogether.

[51] Rabinovich's action led an Argentine court to name him guardian of all embryos cryopreserved at Buenos Aires' fertility centres, alluded to in his demand as [those] 'incapable', a figure used in Argentine law to refer to children and to the mentally disabled.

[52] Lay comment on current developments in Argentine law has been burgeoning in recent months on websites run by conservative and Catholic sectors. See for example Pérez Bustamente, L. F. (2102, August 1). My mother sold me. *InfoCatólica*. Retrieved October 10, 2012 from InfoCatólica website: http://infocatolica.com/blog/coradcor.php/1208010539-mi-mama-me-vendio.

that “the embryos are children”’[53]. They have also attempted to level the debate by voicing scientific views of the commencement of the human person, such as the statement that ‘it is impossible to ascertain when the person begins’ (emphasis omitted), arguing from evidence such as, in this case, the fact that the not-yet-implanted ‘pre-embryo’[54] can ‘become two different individuals, become a tumour, and carry a number of genetic abnormalities’.

Ubiquitous as a way of framing the debate, the opposition between religious and scientific views also gives away other narratives that underpin the discussion on ARTs in Argentina. For example, arguing in general against the mentioned proposed reforms to the Civil Code, the current Metropolitan Archbishop of La Plata City, Monsignor Aguer, warned that ‘their long-term consequences will be dreadful, particularly taking into account that the Argentine Civil Code was a juridical model founded *on the nature of things*’[55] (my emphasis). He further qualified his remarks by indicating that what in the proposal for change is called ‘*human* assisted reproduction’ should be better called ‘*artificial* procreation’ (my emphasis). Entailed in the concerns expressed by the Archbishop are thus both the status of things, whose *nature* seems to be challenged by the proposed reforms to the Code, and the status of the human, whose subsistence could be questioned once it no longer describes a single organic process. This type of discourse is illustrative of the forms acquired by the debate in Argentina. Importantly, it depicts how both the challenge posed on the nature of things, and that thrown upon the human appear to be linked by the same kind of intervention which fosters both technical and legal artificiality, one with de-naturalising and consequently de-humanising effects.

This thesis is organised as an enquiry into this particular framing to which science and religion, progressive and conservative views and, significantly, the

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[53] SAMER’s Position Regarding Cryopreservation of Pre-Embryos. (2012). Retrieved February 22, 2012 from SAMER’s website: www.samer.org.ar/publicaciones_normativas_preembriones.php.

[54] As E. Roberts (2007) notes, the use of the term ‘pre-embryo’ has a specific significance in the Latin American context, where it is used to refer to the fertilised egg across its different stages of differentiation and *before* the implantation in the uterus. The specificity of the term aims at disputing the Catholic Church’s position on the commencement of life.

[55] Aguer, H. (2012, April 21). Reforms to the Civil Code: its grave consequences. *Aerópago*. Retrieved June 23, 2012 from Consudec’s website www.consudec.net.

artificial and the natural, seem to gravitate. In particular, it asks what is the role, status or place granted to nature by those involved in providing what figures frequently in the public mind as '*artificial* procreation'. If 'the nature of things' seems to be in danger once conception achieved via laboratory procedures is allowed, this thesis seeks to address how the reproductive field responds to such concerns, and what significance – if any – it still confers on nature, and on the nature of the human, as domains whose relevance needs to be upheld.

Chapter 1: Introduction

An active and satisfactory sexual life is fundamental for achieving a pregnancy, and this must be maintained during and between treatments.

Unless there is a total lack of sperm (aspermia) or blockage of both tubes, [the couple] has chances of getting pregnant during the diagnostic phase or, even, during the resting periods between treatments.

¿What are the treatments' success rates?
(...) In general, it is around 30%. It is an encouraging number if one considers that the rate of natural pregnancy is 20%.

In the natural cycle, the woman has only one egg, that is why any treatment needs [hormonal] stimulation (...) In high complexity [treatment], many eggs are used.

Pregna Medicina Reproductiva

What is the 'nature' of conception? How does it exist? Is such 'nature' good? What should such 'nature' be? Is the 'nature' of conception relevant and how? Is such nature in danger, does it need to be sustained? What does the nature of conception imply for the human? How do natural and human domains relate?

Above are some of the questions addressed in this thesis. They are instigated by a certain contemporaneity, while they appear especially pertinent for a study of procreative technologies in Argentina. As I write these lines, I repeat the usual inspection of Argentine fertility websites that has been part of my research routine in the last years. I may expect – wish – to be surprised, yet the result states itself once more. It is hardly an unsuspected one, having been stated previously, convincingly and profusely by a number of scholars in the English-speaking world (cf. Strathern 1992b; Edwards, 2000).

In effect, among the many meanings, scenarios and references that after almost thirty-five years of existence ARTs are still able to convey, two are especially noteworthy: their semantic and practical association with nature, and – complementarily and/or exclusively – their simultaneous association with artifice. The extracts I have more or less randomly chosen above (a sign of their ubiquitousness), speak patently of this doubly (overly) determined existence of reproductive technologies. In them we learn that there is no fundamental discontinuity between natural and technical reproduction, insofar as both an active and satisfactory sexual life, and the chances of getting pregnant can – must – be realised both while in treatment and not in it. Yet at the same time artifice is invoked as an improvement, consolation or transformation of natural processes: the 30% treatment success rates are 'encouraging' if one considers that the rate of natural pregnancy is 20%, and high complexity technologies demand many eggs while a natural cycle only produces one.

The examples are anecdotal; the underlying argument is not. The informative and pedagogic discourse of reproductive technologies in Argentina (as in many other parts of the world) inextricably mixes representations of these technologies as part of nature, an extension of what nature does (what Sarah Franklin [1995, 2005] called the narrative of giving nature a 'helping hand'), with depictions that emphasise their *technical* quality, the degree to which they can perfect, enrich or upgrade nature. Both sets of associations are of course at times mutually enabling (ARTs can help nature precisely because they are an extension of it), and mutually exclusive (nature is sometimes not good enough, so that is why technical artifice is needed), while their very opposition and complementarity were characteristic of ARTs early reception by publics of the Western world.

Prominent among the institutional and commercial discourses of the reproductive field, yet common also in the popular media (as studied for example by Franklin, 1995; Hartouni, 1997), the first set of associations represent ARTs as being very close to nature. Technology here plays the role of an aid to otherwise fundamentally natural processes; it is a hand that helps nature achieve its inherent, pre-established aims. ARTs may *help* nature fulfil itself, yet many things remain the same: women are able to carry out normal pregnancies, childbirth ('natural' or otherwise) is just the same as in natural conception, genes are naturally passed on from parents to children. As fundamentally enabling a project which is still one intrinsic to nature, technology has been depicted in this set of representations as helpful, promising and, in countries like Argentina where religious discourse is still very important, also something to be thankful for (Ariza, 2008).

Yet the second set of meanings, the artificial (as opposed to natural) quality of ARTs, has given way to a widespread, public and principled expression of concern for how nature may be in the process of being lost (cf. Strathern, 1992a), one which I suggest has followed its own characteristic paths of naturalisation and normalisation (cf. Thompson, 2001, 2005; Franklin and Roberts, 2006) in the *developing* – and specifically Catholic Church-influenced – world (see also E. Roberts, 2007). As a human *intervention into* nature, ARTs have been often talked about in the Southern Cone as an interference with nature's intrinsic purposes, particularly in the discourse of those voicing religious concerns. Here, conception has been depicted as worryingly de-naturalised, as have those who achieve it via these means, complicating the narratives under which people with reproductive difficulties resort to ARTs (Ariza, 2008). From the resistance to undergoing IVF treatment if it involves 'extracorporeal' fertilisation[56], to the fear of carrying an 'alien' in one's belly, to the characterisation of fertility doctors as 'little doctor Frankenstein'[57], to embryos that are 'thrown into the Thames' (Gynacologist 4), stories of not-so-natural reproduction populate Argentine patients and practitioners everyday discourse on ARTs. This has not meant that people in this part of the world do not resort to – or practise – ARTs. As I showed in the Preface, Argentina is an example of a middle-income country with a high diffusion and favourability of ARTs. Rather, it means that people who use and practise these techniques do so in the context of complex, and inherently local, ethical and religious dilemmas (Ariza, 2008, 2010).

It is precisely this ability of ARTs to evoke, complementarily and/or alternatively, nature and artifice, or nature and culture, that has been singled out by Marilyn Strathern as making more explicit what could be called the mutual belonging of ARTs and kinship. The link between these two (or, more accurately, the fact that each of these terms has been made into a productive 'ethnographic window' [Edwards, 2000] to examine the other) has for long been a set feature of

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[56] 'Extracorporeal fertilisation' is a term sometimes used by Catholics to reject IVF on the grounds of fertilisation happening 'outside the body'. The expression was used by a Catholic woman refusing IVF treatment during research I carried out in 2005-2007.

[57] Examples collected during the research work presented in Ariza (2008, 2010).

studies of ARTs in the British context, almost to the point of becoming itself a local idiom. Moreover, this interest in kinship has often been driven by a wider feminist ascription of those propelling it. In fact, to think and discuss about reproductive technologies from within the social sciences in Britain necessarily implies encountering the great variety and significant contribution done by feminist thinking on the matter, notably represented by the work of Marilyn Strathern (1992a, 1992b, 1993), Sarah Franklin (1993, 1995, 1998, 2000, 2001a, 2001b, [Franklin and Roberts, 2001, 2006]) Jeanette Edwards (1999, 2000, 2004, 2005, [Edwards and Salazar, 2009]), Celia Roberts (2006, 2008, [Roberts and Throsby, 2008]) and Karen Throsby (2004, 2006), among others.

Kinship is, thus, an 'obligatory passage point' for the study of reproductive technologies, at least from a British perspective, yet the opposite is also true: those whose work is better defined as a critical consideration of kinship cannot obviate the important contributions done in studies of the new reproductive technologies (see for example Carsten, 2000). Yet such by now almost inextricable imbrications of kinship and ARTs are due not only to the fact that the latter 'defamiliarise' (Franklin, 1998) popular and anthropological understandings of kinship, but also to the fact that, as Strathern has so rightly asserted, kinship offers 'an [already] established parallel' (1992b: 3) for thinking about the relations of the human body and the machine, or more broadly, of ARTs. It is in this sense that the study of assisted reproduction technologies is doubly determined by its interfaces with kinship: ARTs denaturalise taken for granted assumptions and practices of family relatedness in the West, yet they also re-instate, in a manner characteristic of its object, the coming together of the natural and the artificial for which an established analogy lies already in kinship thinking.

The framing of the study of ARTs in terms of the analogies the latter enable, or further circulate, about the (variable, emergent, contingent or merographic[58] [Strathern, 1992a]) coming together of nature and culture, has

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[58] Strathern (1992a) defines a connection as 'merographic' when the parts that come together partake simultaneously of other 'wholes'; this is, a merographic connection is one which only engages parts *partially*.

proved to be indeed a very successful strategy. It prepared the theoretical path that was to be traversed between a consideration of how ARTs defamiliarise established conceptions and practices through which family relatedness is enacted in the West, and the slightly more radical claim that Western understandings of what a life form is are increasingly dependent on what that life form can do (Franklin, 2001b). Such a reconfiguration is part of the specialised attention that is being devoted to reflecting upon ARTs as part of a wider set of innovative technologies characterised by their ability to intervene in the very molecular processes through which a living entity comes to be a particular 'thing'. Here, although the term 'embryo research' has been present in the debates over ARTs since the very early days (Mulkay, 1994, 1996; also Augst, 2000), its practical procedures and overarching ethical implications have been in many ways made more concrete in reference to somatic cell nuclear transfer (SCNT or 'therapeutic cloning'), human embryonic stem cells (hESRC), and PGD. In fact, as Franklin and Roberts suggest in their book on PGD, '(...) the expansion of IVF throughout the 1980s and 1990s was driven (...) by its potential to be used both to prevent genetic disease and to enable research on human embryos that might lead to stem cell derivation' (2006: 6). This fact, it can be argued, has continued to haunt the project of normalising IVF both in the developed and the developing world.

Thus, in addition to the now more 'traditional' ways in which ARTs have been thought about in the last twenty-five years as challenging established ideas about kinship, parenthood and 'the facts of life' – examples of which are the work of Riviere (1985), Stanworth (1987), Cannel (1990) and Haimes (1990), together with the accounts by Strathern, Franklin and Edwards mentioned above – there is now the added difficulty of their technical proximity to forms of intervention into nature that are being reflected as having the potential to 're-author' life (Franklin, 2001b: 5; also Edwards, 1999). These new capacities, which have become possible by the confluence of different specialised knowledges about the molecular properties of the living (like embryology, molecular biology, microbiology, etc.) include the creation of novel types of living entities (what Franklin [2001a: 303] calls 'new biologicals') as a result of the manipulation of previously existing and thought to be unchangeable entities like eggs and embryos. The latter can be used to form stem cell lines, 'cloned', biopsied or so-called 'spare' embryos, which are the object of a complex 'rhetoric fabric of hope, health, and an improved future' (Franklin, 2005: 59) that is constructed around their capacity to prevent disease (in the case of PGD) or cure it (with the use of SCNT/hSCR in 'regenerative medicine').

Key in the now almost commonsensical association between these developments and IVF is the fact that the latter does not only involve technical procedures that provided a 'platform technology' (Franklin and Roberts, 2006: 6) for the development of the former, but also that processes such as hESCR and SCNT are fundamentally dependent on IVF as they require eggs and embryos produced during IVF cycles[59]. In this landscape, the political controversy and moral uncertainty that is now an 'old' prerogative of IVF in the developed world, appears thus to resurface in 'public discourse' due to the latter's technical, ethical and biological proximity to current developments in the life sciences that are not only aimed at human reproduction but also at human 'regeneration'. Similarly, 'while adding a genetic dimension' (Franklin and Roberts, 2006: xx) PGD was a technical development *enabled* by knowledge acquired through IVF, and as such its '"designer" connotations' may be thought to resonate and re-signify the otherwise 'normalised' status of IVF, at least in developed countries.

The above is particularly important given the way in which ARTs can be said to be 'naturally' implicated in contemporary (both popular and critical) accounts of the re-making of (human) nature, and this notwithstanding their normalisation, naturalisation and favourability. In many of these recent accounts, technologies of reproduction have been reflected upon taking into account their proximity to practices increasingly able to transform the way life works (see for example Franklin, 2001b, 2005), a proximity that further complicates IVF's status as a mere continuation, or 'helping hand', of nature. This has produced the

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[59] Of course, embryos are not the unique source of stem cells. Sources of *adult* stem cells (as opposed to *human embryonic* stem cells) include bone marrow and umbilical cord blood. Additionally, an Argentine laboratory was able to obtain blastocysts (five-day embryos) using parthenogenetic division of cryopreserved oocytes, which the authors claim can further be used to create stem cells (Polak de Fried et al., 2008).

general effect of depicting ARTs as ultimately implicated in further losses of nature that are now not only linked to the dissociation of sex, fertilisation, conception and birth accounted for in early critical accounts of reproductive technologies, but also to the very constitution of unprecedented forms of life (like cloned embryos and stem cell lines). And if amid these analyses it has been rightly claimed that 'Ideas of naturalness, the inherent, the inherited, and the predetermined are still central vectors of assumed causality in contemporary biotechnological innovation' (Franklin, 2000: 60), the consideration of such 'ideas of naturalness' has been less frequent than the focus on the cultural and biological implications of the technical transformation of nature. This focus, which converges with end-of-century narratives about the loss of nature's *a priori* value 'as referent or authority' (Franklin, 2000: 190), the loss of ontological difference with culture (Haraway, 1997; Rheinberger, 2000), and the fact that it is ultimately modelled on culture (Rabinow, 1992), have had the effect of postponing the examination of the relevance that nature may *still* have for different audiences.

The point about nature's relevance, however, remains in question. If nature is something in the process of being rewritten, modelled on human interest, and if reproductive technologies are at least tangentially part of the constellation of practices that are said to have the potential to do so, then it may be asked in what ways, if in any, nature is still pertinent as a 'force in itself' (Franklin, 2000: 190). Is nature something that needs to be taken into account or, given its fragile state, maintained? To ask these questions ultimately means to enquire into the ontological status of nature in ARTs, what can it be said to be, and how this being informs social arrangements, like sexual partnership and family, believed in the West to incorporate 'natural' aspects, in particular situations such as, in this case, Argentina. In the following paragraphs I account for the ways in which I have provided answers for such questions here.

Gamete donation: assembling an empirical object

To answer the questions above, this thesis has focused on one particular practice among the many that are currently performed as part of ARTs. This is gamete donation, a form of reproductive treatment where gametes from persons who will not perform as parents are used to achieve a pregnancy. As a medical service devised to tackle the infertility of those who cannot reproduce with their own gametes, gamete donation is a promissory terrain to explore what is happening to nature and, because nature is always merographically implicated in 'Euro-American' models of relatedness, to explore what is happening to kinship. And this is so for at least three reasons that illustrate the sort of 'anxieties' over the potential loss of nature that can be said to be part of both its cultural and medical understanding.

First, the conception of a child with the use of gametes that do not come from the person or persons who will perform as parents logically implies that the information contained in the parents' DNA will not be passed on to the offspring. Moreover, the genetic information inherited by the child will partially or totally come from persons who will not act as parents, depending on the type of donation(s) that take place (only sperm or egg, or both). Hence in gamete donation one or both parents do not contribute their genetic information to the child, and the child inherits genes from someone who will not act as its parent.

In this sense, gamete donation produces a rupture with the expectation implied in Western models of kinship that parents and offspring are biologically connected, or that the latter inherit genes from the former, hence challenging what in these models is the prioritisation of genetic parenthood over alternative means of becoming a parent. More clearly than other IVF techniques, where there is no break in genetic continuity, gamete donation further undermines sexual reproduction as nature's way of passing on genes from one generation to the next. And hence it makes more obvious, as it were, the disruptions that IVF has made possible between sex, fertilisation, conception and birth, introducing an extra layer of disorder in Western ideas about nature, or about the 'the facts of life', by enabling that sex, fertilisation, conception and birth take place without the inheritance of the parents' traits[60].

Second, gamete donation also evokes the anxiety connected with contravening 'nature's norms' with regard to what I will discuss as the issue of biological variation. It conjures the possibility that siblings unknown to each other but who have been conceived using similarly originated gametes meet in the future and have a sexual relationship and/or procreate together. Such anxiety stems from, as Jeanette Edwards (2004) has observed, the cultural proximity of incest with practices where specific bodily substances (heterosexual and reproductive) are exchanged between the 'wrong people' (father and daughter, brother and sister). But it arises also, I will suggest, because procreation between genetically related individuals is thought to *biologically* threaten the survival of the species. Thus, it is not only because incest may be morally wrong that the union between persons who share an immediate genetic ancestor should be tried to be avoided (in fact, for many practitioners interviewed for this research, 'there is no incest' [Gynaecologist 6] and mixing cannot be seen as contravening a social norm, insofar as those involved 'would not know the genetic relation' [Gynaecologist 1]). More appropriately, certain persons should not mix because their mixing is thought to be 'unnatural' from a strictly biological point of view, insofar as endogamy can threaten the health of the species and, as Edwards's interviewees noted, incest 'will show in the offspring'.

Third, the use of donor gametes to seek conception in a person or couple who will perform as parent(s) raises the question of the mechanisms through which gametes are procured, a problematic which acquires its significance in the context of questions over whether the exchange of gametes needs to be, or should be, financially compensated. Fostered by the widely problematised (see for example Almeling [2007] and Tober [2001]) and highly publicised development of 'a market for gametes' in proudly neoliberal economies (most

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[60] In Argentina, the term usually employed to refer to the break of genetic continuity given in gamete donation is 'genetic mourning' (*duelo genetico*). The term features prominently in expert accounts of gamete donation, while it is sometimes replicated by the mass media (see for example Fernández et al., 2006; Abraham de Cúneo, 2004; Luisa Barón (n.d.). Aspectos psicológicos de la infertilidad [Blog post]. Retrieved from http://www.luisabaron.com/?page_id=133).

typically, the US), an ongoing 'bioethical' debate has engaged a number of different actors across the Western world, many of them self-addressed as opponents to 'the commodification of the body' and guarantors of bedrock principles like 'altruism'[61]. Importantly, the temporary resolution reached by these debates in specific and local contexts can be said to have significance for the ways in which nature and kinship are enacted in relation to the extensively different possibilities for characterising the exchange of gametes contained in such debates. And this is because it would appear that once 'natural' substances like gametes are entered into economic valuation networks (but also, equally, in moral, non-economic ones) they lose in a sense some of their 'naturalness', further affecting their 'use' in family networks and with the purpose of doing and undoing kinship.

Above are some of the scenarios and 'issues' raised whenever there is talk of 'gamete donation'. In all of them, technology (or 'too much culture' [Strathern, 1992a]), seems to pose some kind of threat to the nature of conception and, because such nature is always merographically implicated in kinship, to kinship. It is this very fact that makes 'gamete donation' a privileged site of exploration when the questions that are to be addressed are those concerning what is happening to nature and kinship, in the context of ARTs, in a 'peripheral' – yet also to a certain extent 'Western', or 'Euro-American' – country. And these questions seem to be even more imperative when, as it is the case, the study of gamete donation, or of ARTs more broadly, has hardly been addressed at all in this particular locale[62].

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[61] Professor Lisa Jardine, Chair of the HFEA since 2008, stated for example that 'We are all committed to the altruistic principle' during on Open Authority Meeting on 13 October 2010, leaving no doubt about the need to enforce altruism with regard to gamete donation. Jardine's intervention can be more broadly understood as part of ongoing debates regarding the character of gamete exchange (i.e. altruist, paid, non-paid, etc.). These debates tend to oppose more pure market-centred perspectives (like those more predominant in the US), with typically 'European' visions, where feature largely France's anti-commodification tradition (Rabinow, 1999), and of which Jardine's avowal is an example (see also Dickenson, 2007).

[62] The study of ARTs in Argentina is still in its infancy. Theoretical and bioethical approximations have been contributed by Sommer (1991, 1992, 1993, 1997, 1998, 1999) and Luna (2002). A feminist anthropological discussion of the role of gender in IVF in Argentina has been provided by Garay (2004a, 2004b, 2008). Raspberry (2008) has produced an ethnographic analysis of assisted reproduction practices, while Kemelmajer de Carlucci, Herrera

Yet it seems a critically naive move to assume that ‘gamete donation’ could be studied in its ‘effects’ or ‘implications’ (for nature or kinship), without it itself being opened up to inquiry as a term. In fact, the two words that give this thesis its empirical object (‘gamete’ and ‘donation’) are, in their apparent ordinariness and direct replication of medical and everyday terminology, indeed very opaque terms. On the one hand, due to the detachability and manipulability made possible by molecular knowledge, the term ‘gametes’ obscures the fact that these are never already out-there entities easily approachable, manipulable or instrumentalisable, found and capturable ‘in nature’. On the contrary, as a good science scholar would hastily underscore, they need to be produced as such, detached, classified and re-inscribed in order to be actually identified as gametes. And it is this detachability and circulability that makes gametes both ‘less natural’ than the apparent direct replication of biological terminology would suggest, and capable of being entered into associations with, and dissociated from, other gametes and hence people, movements through which I argue they become enablers of particular normative orders.

On the other hand, the term ‘donation’ also appears to disguise the complicated processes through which the donation of reproductive material can come to be practised as altruistic, selfless and, in the particular case examined in this thesis, also non-paid exchanges. Since if the term ‘donation’ can be said to be linked to ‘money’ in several senses (most notably in the form of monetary aids culturally identified as non-repayable gifts conferred from those who have more to those who have less), it is also true that ‘donation’ is usually attached to a sense of philanthropic, charitable or more broadly ‘humanitarian’ acts. Such spontaneous associations characteristic of the ways in which the term ‘donation’ is understood in the West have the effect of rendering less visible the material processes, enabled by sociotechnical arrangements, through which an exchange of money and, in this case, of body parts like gametes, can come to be performed as altruistic, ‘free’, anonymous, etc. even while monetarily compensated.

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and Lamm (2011a) have contributed to the legal debate in regards to filiatory concerns over those born from IVF.

It is this inherently problematic character of 'gamete donation' that further specifies it as a relevant empirical object. There are two main reasons why 'gamete donation' needs to be critically examined. First, the donation of gametes seems to entail a sense of the 'loss of nature' in conception, and with this, of the 'natural' element always merographically implicated in 'Euro-American' kinship; second, in addition, critically accounted for, 'gamete' and 'donation' entail complex sociomaterial processes with implications for nature, kinship and the human. Yet if such an object is able to complicate simultaneously the 'naturalness' of body parts, the ways in which their sharing, circulation, entanglement and disentanglement informs and transforms kinship, and the pecuniary compensation of their exchange, through what a productive 'optic' could such a capacity to make problematic certain 'givens' be undertaken? I argue it is norms, which follow almost 'naturally' from the sense of destabilisation that I have shown stems from focusing in an object like 'gamete donation'. I say more about this in the paragraphs below.

Norms: a methodological lens

I have pointed above to a heightened sense of being witness to irreversible changes in the ways in which the nature of conception is to be understood in the West, a sense stemming from both popular and critical accounts of ARTs, and which can be said to be even more poignantly exemplified by the case of gamete donation. One way of approaching the construction of the latter as a 'site of concern' is, then, to enquire about the role that 'norms' play in *making sense* of the disquiet that such a practice inspires, in a particular social context such as Argentina.

What do I mean by this? In a broad sense, I mean that norms seem to be at issue in the reproductive practices of gamete donation, in great deal as a result of the unsettling and risky scenarios fantasised by those involved, including 'genetic mourning', the prospect that gametes are 'paid for', and the possibility of incest and/or endogamy. Such scenarios are frequently imagined by the medical practitioners I interviewed in ways that seem to request the involvement of norms following their precedence, transcendence, or externality to the situations they come to be concerned with (i.e. paying for gametes is unethical, therefore gametes should not be paid for). Yet my analyses show that rather than external, norms are implicated in practice in a much more immanent and emergent way, one which entails their constant iteration, and one which involves their materialisation with the help of sociotechnical devices. It seems important, therefore, before moving on to this, to make two important clarifications with regard to how norms are to be treated.

The first one is that, in a very general sense, the study of how norms are performed in reproductive medicine in Argentina is not the study of how medical practices *normalise* a patient population, in the classic Foucauldian sense (Foucault, 1977, 1979). Although I am ultimately inspired by a Foucauldian understanding of the norm, particularly by characterising it – via Pierre Macherey (1992) and Judith Butler (1990) – as an immanent performative 'absent cause', my overall aim is not to illustrate once more how contemporary reproductive medicine disciplines and normalises its subjects of intervention by way of producing them as docile, prolific, homogeneous, etc. A consequence of this refusal to restrict attention to this set of problems is that this thesis is not based on the premise that the only, or most poignant, politically relevant question in regard to the use of donor gametes is the issue of how women's bodies get exploited in (transnational) arrangements organised to procure eggs for the wealthy, wealthier, stronger, men, male doctors, etc. While I certainly pay attention to the technical ontologies that sustain the making of the reproductive female body as a site of altruistization, stimulation and extraction, I nevertheless refrain from materialising such attention in the form of an exclusive concern with the 'exploitation' of women's bodies, as has been common in research conducted on IVF around the world (see for example Nahman, 2011).

The second proviso I want to make is that my consideration of norms is not a typically *normative* one, insofar as my intervention does not aim to clarify ways in which gamete donation *should* be governed in Argentina, particularly in the face of lack of formal state regulation of its practices. In this, and despite the aspiration that the research presented in this thesis will eventually inform public debate over the forms in which gamete donation is currently offered in Argentina, I disengage my work from more typically legal and bioethically oriented contributions which have informed the debate over *how* should ARTs and gamete donation be regulated in the future (see especially Luna, 2006; Kemelmajer de Carlucci, Herrera and Lamm, 2011a, 2011b).

Rather, my take on normativity is designed as a lens through which to explore how the Argentine reproductive field performs, and – given the fragile state in which the nature of conception has been judged to be – what is the importance it confers on such nature. Its overall aim is to account for the various ways in which norms seem to be implicated in the sociotechnical arrangements of the clinic, thus starting from the initial presumption that norms are enacted in ways that necessarily incorporate the material and are, in this regard, not only linguistic, while also not having a transcendental or 'unconscious' form (as, for example, in psychoanalytic understandings of norms).

With the above aim stated, the thesis focuses analytically on norms across three sets of 'problems': first, how what are considered to be dignified body parts, like gametes, can be traded in a form that presupposes their monetary compensation while avoiding such trading being conducted as a *commercial type* of exchange; second, how the 'natural continuity' between parents and offspring, culturally understood to manifest itself, among other 'proofs', in parent/offspring physical likeness, is reproduced in the clinic for the case where genetic continuity is absent, such as gamete donation; and third how the mixing of those who are deemed to be genetically 'too close' is prevented as a form of ensuring the 'survival of the species'.

In examining these three areas, the thesis illustrates the material ways in which norms are at issue in gamete donation in Argentina, thus showing – in a manner that differs from legal or bioethical thinking in terms of transcendental principles – how the practices of Argentine fertility clinics *materially* act *normatively*. In doing so, I account for how in their own particular ways three sets of practices are concerned with regulating how reproductive medicine *should act*, while also showing that such imperatives are emergent in practice rather than the result of abstract and detached values. These are: to what extent technical practices should interfere with nature's random genetic recombination; how such practices can best ensure natural variation within a donor children population; how it can be guaranteed that there is no confusion regarding the altruistic, voluntary, free and anonymous character of human nature. In all these examples, norms and nature come to be related, yet the thesis shows not only – as many studies have done before – that nature is not a given but rather something constructed, but also that this performing is (in this case) highly normative, and that, moreover, norms that regulate nature would not exist were it not for such enactments. I say more about this in the paragraphs below.

Chapters

As a study of what happens to the nature of conception and kinship in gamete donation, this research focuses on two areas of practice that emerged as sites where nature was straightforwardly involved. Concerned with how biological traits are genetically passed on or not, and with what such passing on implies for the biology of the individual, the family and the population, these two areas of exploration are the physical appearance of people born from donated gametes, and the production of natural variation among the population. These examples appear to enact a preoccupation with nature, with how it is preserved (or not) between generations and with the consequences of this preservation. The study of this is the object of two of the three empirical chapters of this thesis.

The three empirical chapters are accompanied by four other chapters. Chapter 2 is a review of literature purposively constructed to allow the discussion of core contributions to the thinking of norms and normativity that structure this thesis. In it I consider previous contributions that help to frame the focus on norms and how they have been theorised in connection with nature, medicine, technoscience, biotechnologies, gender and kinship. The review is structured in three parts. In the first part ('Technology, science and norms') I examine forms of thinking about norms in the context of reproductive technology and technoscience. Here I consider on the one hand Donna Haraway's and Sarah

Franklin's accounts of the transformations undergone by nature in the context of technoscience and of new forms of technologically assisting genealogy. On the other hand, I discuss two feminist anthropological accounts of lay understandings of kinship in the context of the increased social significance of ARTs in Britain during the 1990s, that of Marilyn Strathern and that of Jeanette Edwards. I show that although in these accounts norms and normativity have not been theorised explicitly, they have implicitly been so as part of a discussion of kinship reckoning in everyday contexts and in the wider cultural arena.

The second part of the literature review is devoted to understanding why norms are central to Foucault's characterisation of biopower, and how this centrality can be made further productive via Pierre Macherey's interpretation of Foucault's work. By reviewing the work of Macherey, I highlight how Foucault's understanding of norms was that they were neither negative nor transcendental, but rather productive and immanent. This acknowledgment makes clear how, in a Foucauldian framework, norms cannot be equated with universal, detached and permanent laws, but rather how they need to be acknowledged as something that is immanently made insofar as their objects of intervention are materialised. A norm with no object does not work as a norm, in the same way that such an object can hardly be said to exist before the very intervention of the norm that controls it.

Finally, the third and last section of the literature review discusses the work of Judith Butler in connection with her conceptualisation of normativity as a matrix of gender and kinship. Here, I show how Butler follows the work of Foucault by understanding norms as both productive of its objects and immanent, that is, performative. In this thinking, from which I derive my own conception of norms, norms are conceptualised as something that needs to be both enacted and repeated in order to perdure. Working norms are norms that are continually practised, and hence, in Butler's terminology, they are performative insofar as their repetition brings about the entities that are thought to pre-exist them. Thus, although I critically assess Butler's restriction of normativity to the domain of the human, particularly the achievement of human gender identity, I align with the other element that she most clearly inherits from

Foucault and that is encapsulated in her idea of performativity, that is, the fact that while being practised norms immanently create the objects they regulate.

The literature review chapter is followed by Chapter 3, which provides an epistemological discussion which grounds the empirical approximation to the object. Here, I review the main epistemological and methodological commitments of the qualitative approach – if such an overarching term can be applied to the variety of trends that are usually encompassed within it – and I contrast them with some of those made by representatives of science and technology studies (STS)[63]. On the basis of this, I argue why STS offers a finer research strategy to address the research questions that concern this research. I also explain how I understand normativity and its relation to emergence and agency.

Chapter 4 recounts my fieldwork experience in reproductive centres of the City of Buenos Aires, Argentina. I describe how this research was empirically carried out, including the difficulties I found in fulfilling the self-imposed methodological command to account for the work of sociotechnical devices. I also recount different field research experiences that I have found significant with the benefit of some hindsight. These include a discussion of my impressions after two experiences at the fertility laboratory, the strategies I used to recruit and connect with the people that participated in this research, and a final reflection on the gendered dimensions of doing fieldwork with medical experts.

Once the literature review and methods chapters have introduced key theoretical, epistemological and methodological terms, the thesis progresses to the three analytical chapters, of which the first one is Chapter 5, entitled '"We don't talk about payment": the normative exchange of gametes and the non-economy of moral characters'. This tackles the normative performation (that is, their enactment in socio-technical ways)[64] of gamete exchanges as not-for-profit. Based on the contributions of STS scholars who have tried to understand

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[63] Although I employ the collective appellative 'STS' as it is frequently used to refer to this field of studies, I do so in a manner that relies more on some of its representatives (whose work is referenced in this section) than on making claims about the field as a whole.

[64] As I explain in the Chapter 3, I use the term 'performation' following Callon (2007) to refer to *material* performative arrangements, that is, performative processes that are characterised by their socio-technicality.

processes of economization, the chapter shows that the emergence of moral, altruistic, anonymous and voluntary characters needs to be understood as the result of sociomaterial arrangements (characterised most prominently by the use of Informed Consent Forms) whereby persons are performated to act in particularly non-economic ways. Further, while illustrating how the production of persons as moral characters is concomitant to the performation of the clinical environment as a *moral* type of environment, the chapter functions to introduce the reader to the clinic as a space strongly normatised and characterised by the circulation of moral types, among which is the doctor as a figure who ensures wellbeing, safeness, health, and who is more broadly in charge of attaining the good.

After this introductory analytical chapter in which I discuss the clinic and its subjects as strongly normatised to act in *moral* ways, I go on in Chapter 6 to examine the production of physical similarity between parents and offspring. Here, I show how clinical devices like the portrait picture and the phenotypic data form are enrolled to record the appearance of persons and thus produce similarity between those who are to perform as kin. This enrolment produces as its result different types of persons. On the one hand, the dissimilar treatment given to the photographs of donors and recipients enables the performation of the latter as two very distinct kinds, one characterised as general, giving and disconnected from the future child, the other, on the contrary, enacted as singular, receiving and related to the future child. On the other hand, the analyses of the use made of phenotypic data forms makes it possible to show how these help to performate the nature of future bodies also as specific (and distinct) kinds. Here, I show how the ordering and complexity-reducing capacities of the phenotypic data form work to produce the bodies of donor children (and, also, of donor and recipient), as a nature that comes in different kinds and, specifically, in the case of Argentina, as a form of (White) nature whose difference needs to be preserved.

Finally, after showing how in the practices of Argentine fertility clinics nature is performed as part of the enactment of kinship, Chapter 7 focuses on the same problematic by addressing it, this time, through the optics of population rather than (as in Chapter 6) of the family and the individual. The chapter is entitled '"Lest they meet and marry". Numbers, registers, and the material (re)production of the same persons'. It addresses the growing concern of the medical community that donor children with a common ancestor start to 'meet and marry' (and procreate together), exploring how the management of such a potentiality implies the construction of biological risks. Such construction enables the emergence of variation as a norm of nature, yet one which is materialised in ways which are very specific to Argentina. In effect, although the normative enforcement of variation purportedly seeks to produce *diverse* individuals, the chapter shows that the particular way in which such norms are enacted ultimately implies the reproduction of a concrete kind of individual, namely one whose phenotypic traits comprise a certain version of Whiteness. The chapter explores this production alongside that of figures, like the donor, the sibling, the recipient and the offspring, which are emergent in the investment that aims to produce variation.

The three analytical chapters described above enact different facets of 'gamete donation' as a research object. They focus on distinct issues that stem from the ways in which gamete donation is structured as a medical service, yet they also clearly construct 'gamete donation' as a research problem whose study needs to be empirically undertaken. These chapters do not exhaust other possible paths into the study of the exchange of gametes, yet they are unique in the way they show how normativity is enacted in the case of ova and sperm donation. Chapters 6 and 7 have a clear continuity in that they tackle the ways in which kinship is managed according to a normativity of the natural that both stabilises what nature is and how it should be understood, while re-instating the centrality of nature amidst the purportedly technical, artificial, 'anti-natural' procedures of procreative medicine. Chapter 5 draws a different angle of approximation by studying the ways in which persons are characterised, yet it partakes of the interest of Chapters 6 and 7 in describing the immanent workings of the norm, their continual dependence on iteration, and the way in which the production of certain moral orders is entrenched in the sociotechnical arrangements of the clinic. The three analytical chapters also show how normativity is a result of a practice that has as its consequence the stabilisation of the very forms under which medical procedures are carried out, showing in this their emergent and thus potentially subversible character.

By treading the paths whose convergence helps to enact 'gamete donation' as an empirical object which deserves specialised attention, this thesis widens the scope of analysis of IVF, adding an understanding of the modes in which reproductive medicine is supplied and governed in a Latin American country. In doing so, however, this work contributes not only to illuminating the difference and local character contained in practices that often pass for global, anywhere 'reproducible', mechanical and unchangeable. It also illustrates how the different types of nature involved in Argentine IVF conception need to be understood as the result of inherently normative practices. Such practices entail the enactment of norms regarding nature, that is, the instantiation of ideals regarding what nature should be. Yet as this thesis shows, such normative ideals are nevertheless not pre-existent to the formation of such a nature but, rather, immanently produced. They sustain the relevance of particular versions of nature without however inhabiting any reality prior to their conjoint materialisation with it. Thus, they need to be conceptualised as both the present absence that organises the production of nature, and as the result of the forms in which nature comes to be.

Chapter 2: Literature Review

This literature review is organised around a discussion of norms. It proposes a theoretical frame to understand how norms are *progressively* rendered part of the real; the emphasis is put on 'progressively' because the point of departure is that norms are never *already* part of the real, even if they appear to be so. Such an appearance is, rather, a performative effect; the result of constantly repeated practices, of the gradual accumulation of agency enabled through unstable associations of humans with nonhumans.

This thesis is critically concerned with norms or, to be more precise, with a provisional, fluctuating, inessential, local and regulative domain of normativity, and shares some of the features of its matter of interest with an already coherent and stable body of literature. For this reason it does not abandon, but rather, builds upon this corpus gradually, strategically and, undoubtedly, even if also to some extent very partially. It aims to show that certain accounts have already in some way or other traversed the paths that configure this thesis' problems. Yet these accounts have not visited *all* of these paths. And some have done it in slightly, and sometimes considerably, different ways. In the following paragraphs, I reconstruct one of the many possible routes into a consideration of norms.

The chapter is divided into three parts that review corpuses of literature deemed important when the normative production of nature in medicine is the problem of this thesis. The first part examines theories of kinship and norms in the context of feminist thought on reproductive technologies and technoscience. The second part reviews the Foucauldian notion of 'biopower', the centrality given to norms and how their characterisation as an absent cause anticipates Butler's conceptualisation of norms as dependant upon their materialisation. The third part discusses Butler's conception of performative normativity and how it can be deployed to understand the empirical object of this thesis. The chapter ends with a reflection on how the approaches reviewed help to theoretically frame – both in what they propose and what they leave blank – the present project.

Technology, science and norms

This section explores the work of selected feminist theorists on reproductive technologies, technoscience, and their interfaces with kinship. I aim to show how in this corpus of work, norms and the normativity of nature have been frequently theorised in relation to kinship in the context of reproductive technologies and technoscience, even if this analysis has not always been conducted under the rubric of 'normativity'.

A core disciplinarian concept in anthropology since the late 19th century (Carsten, 2004), kinship re-emerged as a relevant category during the '90s and early to mid-'2000s, amidst an interest in the 'new' reproductive technologies and what was perceived as their re-articulation of the 'natural facts' thought to be a core feature of Western models of family. The reasons for the decline of kinship as an analytic category during the '70s and '80s lies in the waning of the functionalist and structuralist schools in anthropology[65]. Its revival was linked to the works of Marilyn Strathern (1992a, 1992b, 1993), Jeanette Edwards (1999, 2000), Sarah Franklin (2000, 2001a, 2003), Sarah Franklin and Susan McKinnon (2001), and Charis Thompson (2001, 2005), among others. In the following, I discuss some of these contributions together with Donna Haraway's (1997) understanding of kinship as a technology, which I use to introduce the problem of the normativity of nature.

Inherent and extraneous nature

Theorising about nature as a domain of mixture and recombination, Donna Haraway (1997) states that nature (together with race, sex and kinship) represents the paradigmatic domain of the impure, a realm of cross-fertilisation and hybridisation that has always evolved, even before the collapse of science

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[65] Two milestones stand out as exceptions in the relative decay of interest in the study of kinship. They are the publication of Schneider's two books on the subject (*American Kinship: A Cultural Account* [1968], and *A Critique of the Study of Kinship* [1984]), and the compilation book by Jane F. Collier and Sylvia J. Yanagisako (eds), *Gender and Kinship: Essays toward a Unified Analysis* (1987).

and technology into each other two hundred years ago, on the basis of contamination and mixing between species, orders, genera, etc.. Beings of different orders have always co-evolved on account of inter-species assimilation and recombination, exchanging genetic information unaware of and unregulated by taxonomic systems of organisation. This is (was) nature's natural order, one whose capacity for mixing orders makes industrial recombination pale beside it. In Haraway's words:

> History is erased, for other organisms as well as for humans, in the doctrine of types and intrinsic purposes, and a kind of timeless stasis in nature is piously narrated. The ancient, cobbled-together, mixed-up history of living beings, whose long tradition of genetic exchange will be the envy of industry for a long time to come, gets short shrift (1997: 61).

The above suggests that for Haraway pre-technoscientific nature had an inherent normativity, one characterised by the underlying kinship of all natural living beings, and one where the human lacked any precedence over the nonhuman. This inherent normativity might be called non-social or 'natural' in the sense that it opposed what for Haraway may be a characteristically 'moral' (and racist) normativity, one concerned with human affairs in the form of modern political projects of classification and depuration. Haraway refers to the latter as the 'arguments about purity of natural kinds', and they entail what Rosengarten has termed the 'suggestion that all creatures have their rightful place' (Rosengarten, 2001: 169). These projects, Haraway maintains, predate modern biology in the form of classificatory regimes, and paradigmatic examples of it are Linnaeus's taxonomic system of kingdoms, orders, genera, etc., and Mendeleyev's periodic table[66].

In this sense, Haraway shares with Bruno Latour (1993) a characterisation of modernity as intolerant to impurity and infection, and sees it as consequently attempting to make distinctions where orders seem to be confused or contaminated. This project entails a typically modern and moral form of

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[66] Carl Linnaeus was a Swedish botanist who invented the binomial nomenclature for naming species, thus recognised as the inventor of modern taxonomy. Dmitri Mendeleyev is recognised as the creator of the periodic table of elements. In Haraway's view, Linnaeus's and Mendeleyev's classificatory systems allowed to order nature according to criteria that became the source of hierarchies, inclusions and exclusions.

normativity, one where the human is produced, detached and elevated as part of the categorisation of all 'natural' elements, as in Linnaeus's and Mendeleyev's attempts. It is a work of depuration that distils nature as its product while producing new normative forms of natural kinship and disambiguation. By ordering creatures and elements and according them a place in an orderly nature, (kin) relations are built between some elements and entities and a purity of lineage normatively enforced, while other 'impure' connections (for example, inter-species, inter-kingdoms, inter-'races', intra-family, intra-sex), are discouraged. Significantly, Haraway calls 'kinship' these normative (and moral) modern devices whose material and semiotic effect is the production of 'natural kinds':

> Kinship is a technology for producing the material and semiotic effect of natural relationship, of shared kind (…) The periodic table is a potent taxonomic device for what my people understand as nature (1997: 53-54).

Yet it can also be said that there is at least one sense in which Haraway's work can also be thought as involving a certain form of (political) normativity. In effect, Haraway's politics can be described as one which opposes critical theory projects which feature prominently a critique of technoscience as a form of domination and instrumentation of nature. So she affirms:

> In short, technoscience is about worldly, materialized, signifying and significant power. That power is more, less, and other than reduction, commodification, resourcing, determinism, or any of the other scolding words that much critical theory would force on the practitioners of science studies (1997: 51).

Her political vision entails giving technoscience the historical mission of continuing the original self-referential, creative force previously held by nature. If pre-technoscientific nature was capable of ever novel combinations and hybridisations, technoscience's ability to mime nature's ways of reproduction by increasingly enhancing the mixing of orders and the production of contaminated kinship needs to be promoted rather than 'critiqued'. Haraway sees in this project the possibility of countering racist ideologies based on the classification and disambiguation of entities, and problematically opposed to the mixing of the wrong kinds.

In Haraway's view then, nature is now a 'natural-technical order of knowledge' (1997: 54) insofar as it is the product of technoscience. Yet the benefits of that generative matrix of hybridisation once held by nature need to be preserved in the work of technoscience. Such is Haraway's normativity of technoscience, one where the latter is identified as a promise, and where technoscientific activities feature as the heiresses of pre-technoscientific nature's ability to assign kinship to beings and elements of different orders without ever categorising them or limiting the ways in which such orders related to each other, as it is done in the moral projects of modern biology. Far from being pure domination over nature, contemporary technoscience provides in Haraway's view a new political project, one which enables new conditions for that original and a-moral normativity of nature, realised inherently and uninfluenced by the external racist projects of modern biology.

Also conceptualising kinship as mixture, the account by Sarah Franklin (2000) has points in common with Haraway's, although their understandings of the normativity of nature are different. Franklin (2000) explores how nature is being re-conceived in the context of thinking about the new forms of genealogy that are emerging as a result of the work of biotechnologies. She examines what she alternatively calls 'technologically assisted genealogy', 'artefactual genealogy' or 'respatialisation of genealogy' as a result of a series of reductions in the understanding of nature (from nature to biology, from biology to genetics, from gene to information). Sustained by the 'information analogy', new ways of producing genealogy have materialised the 'literal and metaphorical prospect of reprogramming biology' (2000: 190). I will argue that this is something that may well be understood as a new of form of 'extrinsic' normativity of nature.

In Franklin's view, once the gene begins to be understood as 'information, message, code or sequence' (2000: 190), its flexibility is also enhanced, affecting directly its reproductive capabilities. A technologically assisted type of genealogy results from mastering knowledge about how to reprogram the information contained in the gene, so that it now fuses laterally –

and not only vertically – with information coming from other species. This information reproduces itself now as a new hybrid, a mixture of codes once statically duplicated only within a given species, but now recombined not only diachronically within the same species, but also synchronically and between species. The significance of this 'detonation', which has made possible mice that express human genes and plants which have genes from fish, is that it has transfigured

> (...) familiar models of kinship and descent, by demonstrating that patterns of filiation and succession once considered irrevocable because they are fixed by nature can be transcended by technology (2000: 224).

Thus Franklin refers to a new genealogical time and space which are, respectively, faster than the conventional brachiations of familiar descent, and post-arboreal. This new 'artefactual' kinship shares with Haraway's an acknowledging of the blurring of boundaries between the well-differentiated and solid families and species through which modern biology traditionally organised its understanding of living beings. Yet what characterises Franklin's re-spatialised genealogy is the fact that it is specifically technoscientific (that is, it is different from the principle of cross-mixing and shared co-evolution of living beings that for Haraway is only *re*-produced (and not produced for the first time) in contemporary technoscience). Franklin's technologically assisted genealogy is specifically post-Darwinian in that it implies both a decrease in time and a re-spatialisation of genealogy, while Haraway's industrial recombination matches nature's own capacity for mixed evolution only with difficulty. Significantly, close to Rabinow's (1992) 'biosociality', Franklin's technoscientific post-arboreal genealogy implies imprinting on nature extraneous purposes, predominantly guided by the search of commercial gain, while Haraway's principle of transgenic border-crossing is already inherently contained in pre-scientific nature itself. The reconstruction of nature as defined by the purity of lineages is for Haraway a post-factum political (and racist) project that does not acknowledge the fact that nature was always inherently cross-mixed.

Haraway's and Franklin's accounts of technoscience can then be compared with regard to their understandings of the normativities that control nature. Both authors see that what counts as nature has been transformed by different types of intervention into life processes and into the discourses about such interventions. For Haraway, modern biology's Darwinian narrative about the purity of natural lineages (the closeness and distinctiveness of kingdoms, genera, species), fails to acknowledge nature's inherent tendency towards hybridity and cross-mixing. And because these are the intrinsic characteristics of nature, technoscience does not do much more than mimic this inherent capacity for mixture. Thus, Haraway does not see in technoscience a radically new way of producing natural kinds. For her part, Franklin sees that what counts as nature in this specifically postmodern era is an intervened upon, modified life. Here, 'post-Darwinian' nature is nature that no longer exhibits inherent traits. It is a nature controlled from the outside, hence whose forms of genealogy and relating are imposed extraneously by technoscience. The latter is not a continuation but a rupture with pre-inherent nature.

In Haraway's case then, it is the political, racist projects of modern biology which, by imposing external rules and re-categorising its elements, manufactured a new nature which allowed only certain forms of kinship. Such projects resemble what Rabinow (1992) has termed 'socio-biology', a set of (eugenic, philanthropist, liberal and moral) operations upon the social that constructs it using the language of biology. For Franklin, however, the projects to which pre-scientific, self-referential nature subsides are similar to those that Rabinow has identified under the rubric of 'biosociality', the reprogramming of nature's own intrinsic norms on the basis of an extrinsic normativity that enabled new, lateral and fast forms of kinship, and one mostly geared towards the making of economic profits.

Modern English kinship and lay knowledge

Focusing closely on the increasing social significance of the new assisted reproduction technologies, Marilyn Strathern (1992a, 1992b) and Jeanette Edwards (1999, 2000) investigated during the 1990s the impact that the latter may have for the lived experience of kinship. Their accounts also make sense, as do those of Haraway and Franklin, of the changing ideas and ontological status of nature in the face of growing intervention into the life processes. But their chief concern is to examine forms of lay knowledge about kinship in England once ARTs became more common as a way to have children. Understanding that such knowledge does not attempt to evoke rational or abstract sets of (moral) principles that define how ties between kin are to be established and maintained, but refers rather to concrete and frequently unspoken understandings about what constitutes relatedness (Edwards, 2000), Strathern and Edwards point to how knowledge about family connections frequently entails forms of normativity. Their objective is to make explicit these normative assumptions embedded in ordinary senses about English kinship.

In her analysis of kinship in late modern England (19th and 20th centuries), Marilyn Strathern (1992a) suggests a way of theorising the normative workings of kinship. According to Strathern, central to English understandings of kin relationships are the concomitant tropes of diversity and individuality. During the 19th century, the diversity of the stock was thought to ensure the true unique character of the descendants, insofar as more plurality at the outset increased the potential for novel combinations in the progeny: 'Kinship delineated a developmental process that guaranteed diversity, the individuality of persons and the generation of future possibilities' (Strathern, 1992a: 39). In a version of this model, the uniqueness of the English character was thought to be a resultant of the slow amalgam of races that took place in the early formation of its population:

> The greater the genetic diversity, the more rugged the offspring (…) If England formed the basis of a hybrid nation, it was a vigorous hybrid, created centuries ago by waves of conquerors each of whom added their genes and skills to the stock (Strathern, 1992a: 36).

In these accounts of English kinship, a normative ideal emerges about what 'better nature', and thus 'better kinship', are. This ideal normatively enforced frequent genetic exchange, one which, if realised, had the potential to influence culture, the character of a nation or group of people. Thus the more mixed nature was, the more diverse the genetic pool, the better the cultural prospects of a group. According to this, nature was graded with regard to its degrees of mixture and its potential to foster novel combinations. Not all nature had the same value, but nature which had been submitted to successive waves of genetic exchange was in a sense normatively preferred as a model of both kinship and nation.

Genetic variety was also conceived as a foundation for personal individuality, and the latter ensured the reproduction of new diversity, achieved over time and as a result of procreation. This suggests that for English kinship the uniqueness of the person, enabled through genetic exchange and mixing, also performed as a normative core. Those not sufficiently 'mixed' were deemed not sufficiently 'unique', and thus actual and eventual kinship links were graded, preferred or avoided on the grounds of their ability to foster mixing, diversity and individuality.

Writing at the beginning of the '90s, Strathern saw that the morally praised individuality that had so far been seen as the result of mixing natures was increasingly represented in the 'public mind' as disappearing. English and European publics evinced a progressive anxiety over new means of assisting nature, or of reproducing people, perceiving them as possibilities that hampered the potential for more differentiation in nature. Thus Strathern identified a 'postplural' nostalgia (1992a) in the paradoxical fear that more choice for artificially assisting nature eventually entailed less diversity in nature:

> It is now individuality that is under assault from the over-exercise of individual choice, from innovations that reduce variation. 'More' choice seems less 'choice': with the engineering of genetic stock, the potential for long-term future variation may be reduced rather than enhanced. When diversity appears to depend literally on the vagaries of human individuals, it suddenly seems at risk; variation may not ensue (Strathern, 1992a: 43).

Directly connected with a sense of reduction in human genetic diversity, the paradigm of these fears was the use of gamete donors and surrogacy to create persons who would be genetically connected to a number of unknown others[67].

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[67] Strathern claims: 'These new images [of Donor Insemination] introduce the further idea that a fusion of materials is also a fusion of identities. Persons who pride themselves on individualism,

Strathern sees that tinkering with nature and its random and vast potential for recombination infused a sense of alarm in populations whose individuals saw themselves as increasingly connected with each other and yet unaware of those genetic connections. This fact threatened Western understandings of kinship as a domain inextricably concerned with (the knowledge of) biological connections. The image of the clone, which in Strathern's view is colloquially associated with eugenics and the reduction in genetic diversity, fully expresses the apprehension attached to such increases in culture that imply ultimately a loss of nature and of the very nature of Western kinship: 'The present anxiety concerns interference with natural relations. Civilisation is not so much under threat; Nature very much is' (Strathern, 1992a: 41). This social feeling of being in a world where there is less nature than before is powerfully associated, Strathern suggests, with the notion that less nature implies less diversity, or less individuality, or less of both.

The above shows that in Strathern's analysis, English and European publics were attached to certain normative ideas about what nature *should* be (diverse, allowing for individuality, etc.). The stability of these ideas was threatened with the new possibilities brought by ARTs, infusing a sense of loss and nostalgia for what nature once (but no longer) was, raising fears about the potential prevalence of clones and their irremediable loss of variation. The latter was more painstakingly felt once it was sometimes unsuspected, as in the case of people born from donated gametes who might be unaware of their connection.

Jeanette Edwards' ethnography of narratives of conception in an English town also focuses on the importance of knowledge of biological connections for modern English kinship. Her fieldwork leads her to affirm that '*knowing* is central to what constitutes a person in late twentieth-century English kinship' (Edwards, 2000: 243). According to her interviewees, knowledge about one's roots implies that one is connected (and, in opposition, not knowing one's origins conveys a danger of being unconnected, as in offspring from donated gametes who are denied the chance to know the identity of the donor). This suggests that 'knowing' (what a person's roots are) becomes normative, a requirement to be

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as English do, are right to be suspicious: for the fantasy supposes a creature who is no longer an individual.' (1992a: 180).

completed as an individual and to be connected with others, insofar as to be connected one *has* to know. Those who do not *know* are considered to be less related; knowledge of roots becomes thus a (normative) way of establishing relationships per se.

Yet what 'things' are known in this knowledge about connection? Relying on an English idiomatic expression, Edwards (2000) talks of being 'born and bred' as a specifically English form of knowledge about kinship and connectedness. With this expression Edwards refers to forms of creating connections among people that involve both 'shared substance' (idiomatically expressed in the term 'blood') and effort and care; they include simultaneously biological ties *and* social bonds. In *Born and Bred* (2000), she explains that the roots that connect a person to others are never exclusively circumscribed to the biological aspects of substances that get transmitted in the genetic recombination of the fertilised egg, through sexual intercourse and pregnancy. They also involve the knowledge of places where one's family has lived and where one grew up; the ties created through frequent visiting of relatives, and the bonds sustained through care and love:

> A person's background – a particular upbringing, childhood experiences – plays a part in reproducing persons. Both genes and values perdure; they are passed on to children, and to children's children (Edwards, 2000: 37).

The fact that for Edwards to have been 'born and bred' defines connectedness, also speaks of the different forms of the normativity of kinship in Britain. If the having been born and the having been bred are sometimes evoked together so that one doesn't sufficiently connect without the other, other times they are evoked separately, in a manner that makes their distinction significant to the enabling and disabling of certain types of kinship. That is why Edwards notes that kinship 'is a mode of thought which orders and organises immediate social worlds' (Edwards, 2000: 27), and as such 'elicits notions of persons and places, and formulates categories of, for example, tourist, incomer, and migrant' (2000: 34). Kinship normatively orders the world. If connections are sometimes drawn or rejected based on shared nature, other times they are based on shared experiences, and yet other times both nature and culture are taken together as grounds for creating, sustaining or refusing relationships. In all these cases, however, different combinations of nature and nurture function as ordering normative criteria that classify the world and name the relationships each individual establishes with others in such a world.

Strathern's and Edwards's examinations of lay English understandings of kinship and nature in the face of the emergence of new technologies of reproduction show that both authors see a normative component to them, even if they don't cast their analyses in these terms. For Strathern, increased intervention into nature has produced what could be called a kind of normative anxiety about the possibility of losing nature, an anxiety that focuses on a perceived threat to nature's variation once technological possibilities maximise the exercise of choice. This shows not only that nature was subject, in English 19th and 20th century culture, to normative valuation (the more mixed nature was, the more it was preferred), but also that a loss of variation was met by 20th century publics with a normative fear taking the shape of moral disapproval.

Based on a more ethnographical account, Edwards also shows how the new advances in biotechnologies highlighted previous normative assumptions about what kinship and connectedness are or should be. In her view, knowledge is a constitutive part of kinship, and therefore lack of knowledge might lead to a lack of kinship. If one has to know how one is related so as to actually be related, then it is not so much a fear about nature (as in Strathern) that structures a response to an spread of ART, but rather the anxiety that the impossibility of knowing (as in donor conception) might lead to a lack of a related identity.

Biopower and norms

This section reviews the notion of biopower, as conceptualised by Michel Foucault (1979) and more recently by commentators such as Nikolas Rose (2001) and Rabinow and Rose (2006a). Although this thesis is not centred on a discussion of 'biopower', it makes occasional use of the category and it acknowledges it as one of the most deployed categories in social studies of the life sciences. 'Biopower' describes the intense involvement of, among others, modern medical practices with norms and disciplinary regimes of normalisation, augmentation and homogenisation. Key to the concept of 'biopower' is the centrality with which the vital characteristics of human existence have been invested by modes of intervention, administration and organisation of individual bodies and bodily collectives thus making life a political object. Moreover, such centrality granted to life has been the chief force behind the sciences of life becoming a paradigmatic mode of knowledge in modern rationality (Foucault, 2001, 2003). This characterisation of modern political regimes, including modern regimes of health, as focused upon the management of life, has had a powerful influence on the sociology of medicine. Indeed, some studies of reproductive technologies take biopower as a core analytical category for the understanding of the disciplining of women's reproductive bodies through technologies (see for example Sawicki, 1991), further proof of the need to acknowledge this as one of the most common approaches in the study of the sciences of life.

A historical, local, power over life

Biopower – or power over life – was defined by Michel Foucault (1979) as a qualitatively different type of power from that which, for the classical era, he conceptualised as being concerned primordially with the defence of the existence of the sovereign. The essential characteristic of the latter form of power lay in the form of a threat or an absence of action: it was a power that took life or let it live, for the time being and always in an open-ended, revocable manner.

But, according to Foucault, the power that is pervasive in the modern era is not this juridical power. Modern power has a different object as its privileged site of intervention, and that is life: 'life itself'. Wars, social structures and cultural institutions are no longer organised in the name of the defence of the invested figure of the sovereign (the king or the head of a state), but in the name of the defence and promotion of the species being, of the human as a quality shared by everyone. It is the biological existence of being that is at stake in Foucault's characterisation of modern power, and that is why he called 'biopower' what he saw as the specific historical appearance of a radically distinct form of power.

Domination is now established over life itself, which hence becomes incorporated in the political organisation of society:

> (...) one would have to speak of *bio-power* to designate what brought life and its mechanisms into the realm of explicit calculations and made knowledge-power an agent of transformation of human life (Foucault, 1979: 143).

This domination over the species being no longer operates as the power to kill or let live, but as a power to *make* live. Biopower re-organises society upon the basic premise of fostering, taking charge of, promoting and propagating life. It does so according to a number of strategies, knowledges and practices that Foucault structured conceptually as a 'bipolar technology': the anatomo-politics of the human body and the bio-politics of the population.

Acting upon the individual human body, the chronologically earliest of these forms of biopower sought to increase the efficiency of the body, to squeeze out of it to the utmost its forces and capacities for production and to situate the body within productive and disciplinarian networks of labour. The anatomo-politics of the body acts in conformity with a representation of the body as a machine, as an instrumentalisable compound that can be used to increase productivity, to augment life. And insofar as modern biopower is exercised less in conjunction with the juridical law whose 'arm *par excellence* is death', and more as a form of increasing life, the law 'operates more and more as a norm' (Foucault, 1979: 144). The historical outcome of this process is a 'normalising society', a society where, for Foucault, the norm comes to occupy a privileged position in relation to the maintenance, production, and augmentation of life.

Parallel to this form of biopower Foucault theorised the emergence of a biopolitical management of the population, which he described as a power that operated on the species body, the site of procreation and death, of ageing and life expectancy. It is around this body now conceived on a collective level that a number of regulatory controls came to bear, giving rise to what Foucault termed biopolitics. Key in the term biopolitics is, on one side, the characterisation of biological life as it operates at the level of the population and not only at the level of the individual and, on the other, the pinpointing of the knowledges that will develop to manage the species on a collective level (demography, biology, medicine and psychiatry). As Rabinow and Rose put it, 'biopolitics' can be used

> (...) to embrace all the specific strategies and contestations over problematizations of collective human vitality, morbidity and mortality; over the forms of knowledge, regimes of authority and practices of intervention that are desirable, legitimate and efficacious (2006a: 197).

Moreover, as Rabinow and Rose suggest, such strategies of intervention have operated since the 18th century on the basis of a division between the normal and the pathological, categories themselves which Foucault, and Foucauldian commentators, inherited from the critical attention they received in the work of Georges Canguilhem (Canguilhem and Delaporte, 1994)[68]. This division has worked to connect 'the molecular and the molar, linking the aspiration of the individual to be cured to the management of the health status of the population as a whole' (Rabinow and Rose, 2006a: 212). Thus, biopolitics functions on the basis of an opposition of the normal to the pathological, and the investment of the norm as a privileged technique of power, which functions to enthrone the protection, promotion, increase, etc., of life, processes through all of which the individual and the population are conjointly produced.

Furthermore, aiming to update the concept of biopolitics in order to harmonise it more with present-day realities, Nikolas Rose has suggested that 'contemporary biopolitics is risk politics' (Rose, 2001: 1) and that 'for over 150 years, risk thinking has been central to biopolitics' (2001: 7). By this Rose points to how 19th and early 20th centuries' biopolitical projects of eugenics and preventive medicine that aimed at maximising the health of the population, have more recently reconverted into interventions for preventing the risks of sickness or ailments that could potentially affect such population. Rose sees these projects as characteristically not carried out by the contemporary state, which 'is no longer expected to resolve society's need for health' (2001: 6). Rather, such activities are taken up by individuals subtly induced to do so by health-promotion strategies,

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[68] Although I do not use Canguilhem's work in this thesis, it is clear that his is not only a significant contribution to the philosophical thinking of the norm, the normal and the pathological, but rather in many senses one of the central forces shaping such philosophical objects in the history of philosophy.

while capitalised by organisations ranging from pharmaceutical companies to food retailers, and endorsed by a series of intermediary associations (pressure groups, self-help groups) that inhabit the space between 'the will to help and the experience of its absence' (2001: 6). For Rose, such experiences are characteristically biopolitical insofar as they still target the collective, yet the way in which they materialise no longer as appendixes of state activity gives them their characteristically non-modern guise.

Biopolitics is relevant to this project insofar as the latter examines in Chapter 7 the concerns of the medical community over the health of a population which is in part composed of individuals born from donated gametes. Measures for controlling the number of times that a donor is allowed to donate have the objective of reducing the chances that people with the same ancestors 'meet and marry', yet the absence of a national registry regulating the functioning of particular registers, and the concrete way in which numbers are deployed, hamper the success of such efforts. As a 'strateg[y] for intervention upon the collective' (Rabinow and Rose, 2006a: 197), gamete donation regulation may be cast then as characteristically biopolitical, and the chapter takes this cue to discuss the specific productions that result from such interventions.

Furthermore, I acknowledge the importance of Rabinow and Rose's (2006a) and Rose's (2001) contributions to a specification of the concept of biopower in relation to two aspects. First, because biopower is always embedded in particular contexts, realised through local strategies and according to specific knowledges, contemporary biopower cannot be reduced to a single logic of operation (beyond the fact that it is a power that takes life as its object, and that it is a modern phenomenon). This proposes a different route to understanding biopower than that promoted by Hardt and Negri (2000) and Giorgio Agamben (1998, 2005). According to Rabinow and Rose (2006a), these philosophers tend to produce a universalist narrative of the operations of modern biopower by using the term in an expanded version that encompasses substantive different forms of biopower and therefore impoverishes the critical capacity of the term. They propose instead that the value of 'biopower' in describing political configurations of the present be tested in different contexts. They suggest that 'biopower' needs to be a resultant of empirical approximations to political realities, and I agree with this way of conceptualising biopower since it provides an important cue to a research program like the one undertaken in this thesis.

Second, also stating their differences with Agamben's and Hardt and Negri's renderings of Foucault's 'biopower', Rabinow and Rose propose that rather than describing an expropriation, domination and exploitation of life (ultimately, the threat over other's lives), biopower is more accurately exemplified in the present by the practices of *making* live, *giving* life. I embrace this specification of the concept of biopower since it conveys a more accurate understanding of the operations of biopower that frames the work of this thesis. In effect, this research is focused on gamete donation as a very specific type of reproductive technology which is centrally concerned with fostering (the propagation of) life by aiming to facilitate pregnancy among those whose gametes cannot help them reproduce.

Part and parcel of this theorisation of biopower as inhering intensively in life are the 'strategies for intervention upon the collective' and the 'truth discourses about the vital character of individuals' (Rabinow and Rose, 2006a: 197). Yet if this research follows Foucault, Rose and Rabinow and Rose in acknowledging the reflection of life upon the political organisation of Western societies, it does so not by exploring 'truth discourses' but *knowledge practices*. The latter expand Rose's and Rabinow and Rose's emphasis on human discursive activity and discourses of truth, to encompass both discursive and non discursive, human and nonhuman forms of agency, while focusing on knowledge as practice (and not only discourse). In doing so, it does not counter that with biopower life becomes a central object of political consideration and manipulation, but focuses rather on how medicine inherits discourses born with modern political administration and materially redeploys them in its performation[69] of nature.

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[69] I discuss the term 'performation', taken from Michel Callon (2007), in Chapter 3.

In his analyses of modern power/ knowledge regimes (1973, 1977, 1979) Foucault characterised devices of political administration as centrally concerned with the operation of norms. In this depiction of historical societies as exemplified by different forms of the exercise of power, modern biopower is the reign of action of the norm, insofar as, concerned with life rather than with death, it needs to 'distribut[e] the living in the domain of value and utility' by way of imposing 'continuous regulatory and corrective mechanisms' (1979: 144). Moreover, as I have already pointed out, the norm is a central concept in Foucault because it is the element that, in a 'normalising society' concerned with life, circulates between 'a body one wishes to discipline and a population one wishes to regularise' (2003: 253).

Yet the fact that Foucault emphasised discipline and regulation when discussing the operation of power in modern Western societies does not mean that he adhered to a negative conception of power. In fact, the opposite is true, as he himself made clear in some of his lectures (Foucault, 2003). In one, for example he claimed that

> It is (...) a mistake to think of the individual as (...) struck by a power that subordinates or destroys [it]. In actual fact, one of the first effects of power is that it allows bodies, gestures, discourses and desires to be identified and constituted as something individual (2003: 29-30).

As Pierre Macherey (1992) points out, Foucault's conception of modern power, and with it norms, is not restrictive. Norms are basically productive, they have a constitutive effect. Norms produce the objects upon which they act, which are then not external to the action of the norm but rather something which is shaped insofar as it is mastered. This conceptualisation of norms as being productive of the entities they control (and, additionally, as existing only to the extent to which they constitute their objects of intervention) partially influenced Butler's understanding of the performative working of the norm. In the following, I use Macherey's[70] discussion of Foucault's immanent and productive conception of norms to highlight the ways in which Butler re-elaborated biopower's functioning through norms into her distinctive consideration of normativity.

In his discussion of the influence Spinoza's thought had on Foucault's conceptualisation of norms, Macherey (1992) explains why a restrictive conception of norms leads only to an acknowledgement of the entities controlled by the norm as pre-existent to its actions[71]. Macherey indicates that abandoning such a conception implies opening up to the immanency of norms. He clarifies:

> Of what would this thesis of immanency consist? It introduces the following consideration into the relationship which defines the action of the norm: this relationship is not a relationship of succession, linking together separate terms, *pars extra partes*, following the model of a mechanistic determinism; but it supposes the simultaneity, the coincidence, the reciprocal presence to one another of all the elements which it unites (1992: 186).

Following this depiction, Foucault's concept of the norm appears as one where the norm and its effects need to be understood as simultaneously present; that is, it becomes impossible to think of the norm 'in advance of the consequences of its action, as being in some way behind them and independent from them'. Rather, 'the norm has to be considered such as it acts precisely in its effects' (Macherey, 1992: 186). A concrete example of this is of course the historical analysis of the emergence of sexuality. As Macherey notes, 'there is not such thing as sexuality itself (...) since what we call sexuality is a sociohistorical phenomenon, depending on the objective conditions which 'produce' it' (1992: 186).

According to the above, there is no such thing as a pre-existent normative order that would rule over the social and that would be immune to the different historical manifestations of such order. On the contrary, such order exists only

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[70] Macherey claims to clarify this conception by way of specifying the influence of Spinoza on Foucault. In the following, I do not claim to present an Spinozian understanding of norms, but rather to acknowledge the way in which Macherey's explanation illuminates the continuities between Foucault and Butler on the question of norms.

[71] Insofar as, in a restrictive conception, norms only dominate, repress or restrict a previously formed entity.

insofar as it is 'situationally' actualised, iterated, repeated. And it only exists in and by its effects. In the context of this research, this means, for example, that only when a specific family resemblance (as in the 'matching' of phenotypes between donors and recipients) or a specific population connection (and disconnection) (as in technically produced diversity) are achieved, can it be said that a regulative order (for example, of nature) exists. The Spinozian absent cause is only present in its effects. On the basis of Macherey's rendering of Foucault's productive and immanent concept of norms, it may be possible to suggest then, as this thesis will, that if nature is a norm or, following Butler, an 'ideal construct that is forcibly materialized through time' (1993: 1), nature is not something in itself until it is materialised through normative practice. Nature as a norm is nothing but its materialisation; or, in Spinozian guise, is an absent cause that only appears in its effects, Butler's ideal construct is a normative immanent cause.

Affirming the inexistence of both 'nature in itself' (as a transcendent order, prior to the human and technology) and 'a law of nature in itself' (norms that would govern – order, restrict, repress – a previously shaped nature) has a number of important consequences. The most obvious and relevant for this project is that examining the local materialisation of nature, the effects that show it as an absent normative cause, is pertinent insofar as time/space-specific materialisations enact different natures. That is, examining how nature is actually performed in the context of assisted reproduction in Argentina shows some of the modalities that effect the normativity of nature. Following Foucault's (and Macherey's interpretation) of sexuality as 'nothing more than the ensemble of historical and social experiences of sexuality' (Macherey, 1992: 187), one can affirm that nature is nothing more than the historical and social performances of nature. If so, it follows that to know what nature 'is' in/for reproductive medicine in Argentina, one needs to understand how nature *is performed* in Argentina, a performation that I claim is highly normative.

The second important consequence of this way of thinking, and one which converges with Butler's appreciation of the instability of the norm, is the inessential character of the norm. In effect, if the essence of a norm is fundamentally tied to its manifestation, then the phenomenal has the power to affect the essential. Or, to put it differently, there is no 'essence' of a norm and its object beyond the differences through which it is manifested; the norm changes according to its manifestation, the norm is unstable with regard to its manifestation. As Macherey puts it:

> This is the nature of Foucault's positivism: there is no truth other than the phenomenal and there is no need for reference to be made to any law which would anticipate the realty of the facts to which it is applied (1992: 187).

Thus, what in this thesis is to be considered the normativity of nature is not definite but depends on how it is materialised. This is exactly what is implied in Butler's statement that 'a norm does not have to be static in order to last; in fact, it cannot be static if it is to last' (2002: 37). This shows that an immanent conception of the norm is also an affirmation of the unstable character of the norm, of how the norm changes according to how it is performed, while such change is fundamental to its permanence in time.

The third consequence that can be drawn from this understanding of the normativity of nature is that although what nature 'is' might change according to how it is done, this does not underestimate the normative character of the production of nature, the fact that in the context of the clinic nature is a normative construct. The very iteration of the normativity of nature, the fact that among the professional practices that this thesis examines nature as a norm is repeated once and again in slightly different ways, points in the first place to its regulative character, since if something needs to be repeated is because its occurrence cannot be left to pure randomness.

This thesis shows that nature as an ideal construct regulates the practices of gamete donation in Argentina. As a norm that only exists in its effects, nature achieves its regulating capabilities by constituting objects (populations, family resemblance, the genetic make-up of individuals, the altruist, anonymous, voluntary individual, etc.) that come to pass for natural kinds. The performation of certain entities will thus be shown as being inseparable from the actualisation of the norm, as it is precisely these productions that provide the locus for the solidification of the norm. The regulative character of the Foucauldian norm, understood in an immanent way via Macherey's interpretation, is hence indissoluble form its *productive* role (Foucault, 1979). Moreover, such an understanding of the norm highlights how – 'if the norm is not exterior to its field of application' but rather 'it produces it' (Macherey, 1992: 187) – nature needs to be thought as both the norm and that which the norm produces, the effect of the norm; that which affects and what is affected.

The last consequence of this mode of thinking about the norm is that it provides a way to conceive of what is contingent and what is stable *together*. In effect, by being able to explore how norms concerning nature are iterated once and again, and by also examining how such iterations always displace the literal in favour of the creative, such theory of norms tackles two problems. First, those associated with understanding nature as a given (for example, in early British anthropology's association of kinship with a domain of 'natural facts'). Second, those related to understanding processes that happen without rationale, as in some accounts which by reifying the occurrence of the contingent (for example, by certain uses of the term *assemblage*, as in Law, 2004) fail to explain the constraints posed on specific situations so that they develop in certain ways and not in others. Such tackling opens up the pertinence of empirically studying the current forms in which nature is normatively produced in Argentina, both contingently and stably.

The performativity of the norm

I have reviewed above the way in which some exponents of feminist thought have considered the normativity of kinship and nature in relation to technoscientific (and specifically assisted procreation) interventions, and examined how Foucault's understanding of biopower's norms can be better acknowledged by highlighting their immanent and productive power. In the following, I discuss Butler's conceptualisation of the performativity of the norm, arriving at a concluding clarification of how normativity will be operative in this thesis.

The materialisation of sex

> *In other words, "sex" is an ideal construct*
> *which is forcibly materialized through time.*
> Judith Butler, Bodies That Matter

The conceptualisation of normativity used in this thesis stems, with some modifications, from Judith Butler's understanding of sex and gender as performed through a regulative apparatus of heterosexuality (Butler, 1993, 1990), as well as from her analysis of kinship as that domain whose normativity is instituted in cultural and social practices rather than being a pre-normative, pre-symbolic domain (Butler, 2000, 2002).

After presenting in *Gender Trouble* (1990) her conception of gender identity as the result of ritualised normative performances of gender, Butler responds to some of the critiques to her theory of performative practice by exploring the formation of material bodies. In *Bodies that Matter* (1993), she problematises the reception of her previous work in terms of a voluntaristic account infused by a linguistic type of monism. Using this critique as a resource to strengthen her own theory, she discusses how it is possible to conceive of material bodies bearing physical sexes as constituted through performative discursive acts. In continuity with the ideas expounded in *Gender Trouble*, and expanding the Foucauldian notion of power and the subject, she states that the binarism of physical sexual difference is produced as the result of the operation of regulative discourses that progressively *materialise* sex.

Butler thinks of materialisation as a process, as a progression towards the achieving of a sex which takes place through time. This temporal dimension of materialisation is key to her understanding of the existence of sexed bodies and to her theory of performativity. The materiality of all (legitimate) bodies is the product of a process of materialisation; matter is never a pre-existent surface onto which culture is imprinted but, rather, an achievement that has taken time. Thus, if matter (sex) is a temporal accomplishment rather than a previous given, sex is not prior to gender or the practice of culture[72], but both sex and gender are the result of normative discourses and 'sex (...) will be shown to have been gender all along' (Butler, 1990: 8).

In effect, for Butler this temporal materialisation of sex/gender is regulated through discourse; it is not an open or ungoverned process that occurs randomly, nor one that happens only 'in matter', but something which takes place through very specific discursive constraints that she will name 'obligatory heterosexuality'. The latter is a normative apparatus that regulates the materialisation of sex – the binarism of sexual difference –, with the effect of making certain bodies appear, and foreclosing the materialisation of others (those which fail to do so according to a binarism of sexes). The failure to materialise of certain bodies is the proof that materialisation is a regulated process insofar as only some materialisations will be avowed. Given her 'poststructuralist rewriting of [Derridean] discursive performativity' (1993: 12), the unsuccessful appearance of certain bodies, their failure to enter into the domain of cultural intelligibility, is inextricably tied to the triumphant materialisation of the other bodies; they are their 'constitutive exterior'.

By describing the materiality of sex in such a way, Butler aims to show that her theory of performativity is neither voluntaristic nor 'somatophobic'. If the materialisation of the binarism of sexual difference is governed by a normative apparatus of heterosexuality, then acquiring a sex is not a choice, and the manners in which one acquires such sex are far from being decisional. Rather, a matrix of normativity regulates such acquisition – something that, following Lacan, Butler calls 'assumption' – in a way that makes it inescapable. To assume a sex becomes then 'vital' insofar as no subject emerges without a sex. To be is to be sexed to the point that the regulating apparatus controls the emergence of the 'I' that assumes either a masculine or feminine sex. The subject emerges in and through the regulating power of discourse, and the rejection of

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[72] Taking into account the immanent causality that, as was shown above, shaped Foucault's conception of the norm, Butler's rejection of the priority of sex can equally be said to be founded on an understanding of the relationship between cause (norm) and its effects as immanent. The cause/norm (heterosexuality) is not chronologically pre-existent but rather exists only insofar as it produces its effects (dichotomic sex).

the terms in which it has been constituted is a possibility contained in a performative practice that takes place only in further instances of constitution.

At the same time, with *Bodies that Matter* Butler sought to clarify why her theory of sex as a result of performative discursive acts was not a 'linguistic monism' that excluded the body or proposed that one acquired a sex only by repeating a set of discursive rituals. By trying to refocus on how the normative matrix of heterosexuality produced both bodies *that matter* and bodies which *fail to materialise*, she aimed to give an account of the matter of bodies as produced *partially* through discourse. In effect, Butler states that

> To claim that discourse is formative is not to claim that it originates, causes, or exhaustively composes that which it concedes; rather, it is to claim that there is no reference to a pure body which is not at the same time a further formation of that body (1993: 10).

If discourse does not 'exhaustively compose' the body it is because it configures it together with something else; that is, it configures it partially. At the same time, Butler claims that a discourse about a 'pure body' is constitutive of it. It is by being instated by the normative discourse of gender that the body partially comes into being as sex.

The elements described above are central to Butler's theory of performativity as formulated in her 1993 work. Discourse is understood as a regulative regime with the capacity to materialise, in a process that happens across time, sexed bodies (and presumably other types of matter). Because Butler's interest is to account for the emergence of physical sex, the regulative discourse through which sexed matter emerges is identified with obligatory heterosexuality. If discourse is that which constrictively allows the formation of a sexed, material subject, then the emergence of such gendered subject is different to an act of volition.

One more element is central to Butler's theory of performativity. This is the 'citationality' of discourse, a point that links both to the lack of an original will that assumes the possibilities of discourse, and to the temporal element of materialisations. Arguing together with Derrida and his 'critical reformulation of the performative' (1993: 13), Butler states that the subject that appears to control its discursive effects (for example by declaring her having a certain gender) is in fact produced by a 'citational practice by which he/she is conditioned and mobilized' (1993: 13). For Butler, then, performative acts are always recursive; their efficacy is dependent upon their repetition in time, where each repetition is a citation of a previous act and the forebear of a following citation. The solidification of the subject and its veneer of authority are a possibility created in the iteration of the norm, while each iteration represents the possibility of a miscitation and therefore of subversion of the matrix of normativity.

The normativity of kinship

In her analysis of Sophocles's play *Antigone*, Butler switches the focus of attention from gender to kinship. Butler begins by criticising Hegel's, Lacan's and Luce Irigaray's understanding of Antigone as a figure who, representing the ties of kinship, exists within a pre-symbolic, pre-normative space which is opposed to the law or the state. By insisting on giving her brother Polynices a proper burial against the orders of her uncle and ruler of the city, Antigone has been cast in the Hegelian and structuralist accounts as a figure who has not properly entered the domain of language (Lacan and Irigaray), or politics (Hegel). She is pre-linguistic and pre-political (pre-ethical in Hegel's terms), but nevertheless her act of insubordination, defying the orders of Creon, is necessary for the existence of the state or the law, as in a sense it mimics the founding of the (social) norms of the state which rely on the pre-symbolic in order to exist. Yet this 'relying on' is a form of repression, insofar as Antigone and her claim on kinship need to be (violently) excluded from the state in order for the state to found its norms.

Butler does not find these interpretations satisfactory, since they lock kinship, represented in this example by Antigone, into a domain which being *before* culture is fixed and subordinated to the state. Once the blood ties represented by Antigone are conceptualised as either not symbolic (by structuralism) or not ethical (by Hegel), they pertain to a sphere which in such accounts is not susceptible of modification and occupies a subsidiary space, as all change happens in the domain of language and politics. For Butler, Antigone might be a metaphor for something different, a figure to represent not the mutual exclusion (or dependence based on exclusion) of blood and law, but their unavoidable mixture.

Demanding a proper burial for her brother, ‘Antigone emerges in her criminality to speak in the name of politics and the law’ (Butler, 2000: 5), as her claim needs to be made in a language which is intelligible by the state. In this act she is already superseding, for Butler, the confinement to kinship, insofar as her voice breaks the homogeneous character of the law by posing a demand which is strange to it. This breaking into the public is also a fissure of the laws of gender, since although she is a woman Antigone embodies the manhood of those who are allowed to speak the language of the state. But there is another sense in which Antigone is a figure of mixing, and this is that she is also breaking the laws of kinship (or the laws of the gods which she invokes as being above the laws of the state) by mourning her brother in public, an act which is prohibited. In this, Antigone is not loyal either to (the laws of) kinship or to the laws of the polis, and this is the difference that Butler’s reading sees as constituting the significance of Antigone.

For Butler, Antigone’s double (or triple) insurgence (towards kinship, towards gender and towards the state) proves that kinship is *also* (like language and the state) a normative regime, one in which (in this case) the dead should not be mourned in public. Furthermore, if these norms can be violated, it is because (unlike Lacan), such norms are not immovable, they are vulnerable and (unlike Hegel), they occupy a space as important as that of the state.

With this singular reading, and by paying attention to the details that in Sophocles’ play speak of a disobedience *also* towards kinship, Butler proves a point that is at the heart of her political vision, and that is that kinship (and with this she makes clear she does not refer to any particular form of the family) is both a normative *and* unstable domain. As such, kinship regulates acts which nevertheless can be disobeyed or, to put it another way, the normative power of kinship is limited and contingent. At the same time, by relying on a novel interpretation of the metaphors embodied by Antigone, Butler asserts that kinship is not safely engraved in the pre-symbolic or the pre-political, but rather inhabits the same coordinates as language and the state.

Normativity, an operative concept

The elements above described make up the crux of Butler's theory of normative performativity. They are also important in providing a framework within which to think about the organisation of normative regimes that this thesis explores. Although Butler does not offer a definition of 'normativity' per se, that conceptualisation is clearly implicit in her work. In the following I particularise those aspects of Butler's theory of normativity which are used in this thesis, and those which are not.

First, if for Butler performativity is a quality of normative practice whereby materially sexed identities come into being, it is clear that each citation of the norm is partially constitutive (and subversive) of the norm itself. That is, the iteration of the norm that is at the core of a performative type of agency defines the possibilities of survival of the norm. I take such an understanding of the existence of the norm to mean that norms exist only to the extent that they are instantiated.

In effect, contrary to structural, psychoanalytic[73] and juridical understandings of the norm where norms like the incest taboo and the law of the father pertain to a transcendental, universal or unconscious domain which is unaffected by social practice, in the theory of performative normativity norms come to inhabit an immanent plane of social practice. The norm exists (and is remade) insofar as it is enacted in practice, instead of acting 'on the social' from a transcendental and inaccessible point. Here, norms are showed to have a much closer relationship with practice than that acknowledged by structuralism, including Lacanian psychoanalysis; they are both contributory and dependent upon how they are practised. This insight resonates with Actor-Network

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[73] This point against psychoanalysis may well be understood as another legacy Butler gains from Foucault. As Macherey says: 'What Foucault criticises in psychoanalysis (...) is that in its way it reintroduced the grand myth of origins, relating this to the law itself, *constituting it as an unalterable and separate essence*' (1992: 188, my emphasis).

Theory's[74] (ANT) characterisation of an actor only as that one which becomes associated in a network, and is central to this thesis in providing a reason to explore how normativity is enacted in practice, how norms are dependent upon their repetition in order to uphold their regulative power.

Secondly, in close relation to the fact that a norm is tightly dependent upon its instantiation in order to persist, I align with Butler's insistence on the persistence of the norm, with her characterisation of a normative regime as something achieved through repetition. In Butler's theory of social change, she ascribes to iteration the logical possibility of fostering mutation, insofar as each citation of the norm both asserts and subverts it. Yet in this research, the focus will not be on how the iteration of the norm is part of its deviation, but rather on how each time the norm is quoted, something – which I will provisionally call 'nature' – becomes constituted in various ways. By this, I understand that whenever a certain norm of nature is discursively and materially invoked, nature is enacted, performated, produced.

These two aspects, the dependence of the norm upon its enactment and the reiterative quality of such enactment, are the two central elements of a theory of performative normativity that this thesis takes from Butler. However, there are some problematic aspects both implicit and explicit in Butler's normativity that prevent me from taking on her work as a whole.

First, insofar as Butler's main aim in *Bodies that Matter* is to account for the gradual materialisation of sex as the result of the operation of a discursive and normative apparatus of heterosexuality, she doesn't explore how materialisations occur also through the participation of material formations, distancing herself from Foucault, who was interested in the material apparatuses that facilitated the enactment of the norm. Throughout her 1993 work, Butler consistently accounts for how discourse helps to partially enact sexed bodies, yet her study leaves unexplained how *material*-semiotic arrangements which may well be called normative also partake in the formation of matter. As an example, Butler has not looked at the effects that material bureaucratic arrangements, such as the ones

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[74] In Chapter 3 I discuss some of ANT's contributions to the thinking of agency as part of my discussion of the epistemology proposed by Science and Technology Studies.

which will be examined in this thesis, have on the constitution of bodies. This lack of recognition of the workings proper to matter or of material-discursive arrangements tinges Butler's work with the problematic submission of non discursive or para-discursive agencies to the linguistic monism that she tried to avoid in the first place.

Moreover, Butler's work is not able to locate a place for matter that is different from being either prior to language (the focus of her internal critique of feminist uses of the sex/gender dichotomy), or the performative product of discourse (her own theory), failing to account for the co-emergence or co-production of matter or bodies through other bodies and other concomitant materialisations. In this, Butler cannot account for how materialities like architectural arrangements, bureaucratic devices, legal frameworks and institutional guidelines also produce the matter of bodies and, more generally, of nature. By exploring some of the material-discursive arrangements of the fertility centre, this thesis proposes to fill the gap relating to the normative workings of an apparatus left by Butler's theory of normativity.

Second, Butler's lack of interest in how a matrix of normativity can also be formed of material elements clearly emanates from a restriction of agency to its human version and the exclusion of nonhuman agency in the sustainment of normativity. This omission is grounded in a series of reductions in which the overarching concern with 'matter' is rapidly condensed in a preoccupation with *human* bodies and specifically with human sexual difference. Although in recent work (Butler, 2010) Butler has started to take into account the operation of nonhuman networks, she considers these in relation to the possibility of performative action rather than of normativity. In her work more purely concerned with normativity (1990, 1993), however, the human (body) features as a privileged site for the materialisation of sex, even if this materialisation is crucial for the formation of the human as such[75]. While the priority of the matrix

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[75] This reduction of agency to a *human* type of agency may well be acknowledged as an offshoot of Foucault's influence on Butler. Although Foucault spoke of material apparatuses and paid attention to the concrete arrangements that made viable the operation of the norm (for example, Foucault, 1977), the chief product of the norm remained for Foucault, as for Butler, the formation of the (human) subject.

of normativity over the individual implies that no sex is assumed as part of an act of volition but is, rather, the product of discursive normativity, sex and gender only emerge for Butler restrictively as a prerequisite for the human and therefore the latter still figures at the centre of her account of normativity.

Although the nature whose formation will be examined in this thesis also emerges predominantly in the human, it does so through the operation of discursive *and* material, including bodily, arrangements that ultimately contribute to undermine the prerogatives of the human over the nonhuman. Hence, this thesis argues that the achievement of normative domains may also be acknowledged as the result of the operation of material and bodily devices, an approach which expands Butler's understanding of performative normativity towards the domain of the nonhuman and the material.

Butler's later work (2000) uses the story of Antigone as a parable, one which also yields important insights for this research. In effect, Butler utilises her account of this mythological figure to suggest that kinship may be considered as something other than an irrevocable foundation. She thus tries to unearth kinship as that which pertains exclusively and definitely to an unconscious, transcendental or pre-political domain. By returning it to the terrain of social and cultural practices, kinship becomes something *practised*, a lesson fundamental to this thesis insofar as the latter is concerned with the practices that enact kinship as a form of nature, assuming that kinship is never something already locked in the unconscious, or the pre-linguistic, or the pre-politic.

Finally, another fundamental insight from Butler's *Antigone* is that once kinship is done in the domain of cultural and social practices, it is done normatively, a normativity that is at once regulative and, because it is not grounded in a secluded domain, is vulnerable and can be changed. In the wider work of Butler, this is taken to signify that if heterosexuality is not locked as the resolution of the Oedipus complex, as in psychoanalysis, or the necessary outcome of the incest taboo, as in Lévi-Strauss, then the normativity of heterosexuality is also unstable (Butler, 2002).

As the above account shows, Butler's work offers a way into a theorisation of normative domains, even if for the purpose and object of this thesis some of its elements need to be reconceptualised or framed according to different demands. As will be discussed in Chapter 3, this endeavour can be fruitfully taken up by deploying some of the tools developed by ANT in its case studies (Law, 2007). In effect, Butler's effort is somehow unique in following Foucault's work by theorising the normative in combination with a theory of performativity and its insistence on recursion and iteration. The result is a robust understanding of normativity as a gradual, immanent, repetitive and inessential (contingent) domain. It differs, with Foucault (2003), from explaining norms as the domain of the juridical, of the written law. By criticising structural and psychoanalytic accounts of the formation of the gendered and related subject, it is also able to disengage normativity from a domain of transcendent, universal, unconscious and inaccessible or unchangeable laws. Further, when normativity is expanded through the contributions of STS, it is turned into a concept that engages both human and nonhuman forms of performative agency. Because of the above, Butler's work is able to innovatively combine the agenda of immanent and local forms of power and domination inherited from Foucault, with an interest in performativity and the enactment of things in (discursive) practice that speaks to work done in the field of STS, an approach which is discussed in the next chapter.

Bringing Butler's discursive normativity into dialogue with STS, I propose to explore how the former's affirmation that '"sex" is an ideal construct which is forcibly materialized through time' (1993: 1) can be productively applied to this thesis to explain the progressive emergence of nature in the practice of the fertility clinic. If for Butler normative discourse is performative in the sense that it materialises the ideal construct of sex into sexed bodies, this thesis examines how 'nature' may also be conceived as an ideal whose gradual and immanent materialisation is controlled by normative discursive-material practices. Instead of focusing on how 'sex' functions as a norm, I aim to show how 'nature' functions as a 'norm, (...) [and] is part of a regulatory [material-discursive] practice' (1993: 1) that has nature as its result. In this, nature is not only handled, manipulated or enhanced in fertility medicine but very much produced as such, a production that is tightly (although not intentionally) regulated, normatively idealised and which questions the common understanding of reproductive technology as an artificial, non natural, synthetic domain.

Discussion

The discussions above have accounted for the ways in which norms and different forms of the normativity of nature have been thought about in three corpuses of literature that are relevant to the empirical discussions undertaken in this thesis. The first part of this review showed the ways in which feminist authors discussing kinship, reproductive technologies and technoscience have reflected on nature and accounted for the different types of normativity to which it is subjected. Exploring English lay meanings of kinship, Edwards and Strathern examined how kinship has been associated with normative understandings of nature. Where Edwards showed that lay knowledge of biological connections among people is key to understanding who a person is (and, therefore, from a normative point of view, a person *cannot* be sufficiently connected without awareness of such connections), Strathern pointed to the normative preference for certain types of nature in English kinship. She suggested then that in the latter, 'mixed' nature has normally been preferred on the basis of its purported benefits to both the uniqueness of the individual and the cultural prospects of the group.

In addition, discussing the effects of technoscience on kinship, genealogy and nature, both Haraway and Franklin agreed that the latter have been substantially altered in recent times due to the development of (post)modern projects of the control of nature. This agreement seems to imply for both (more directly for Haraway) that nature had an inherent form of evolving prior to the intervention of technoscience and its paradigmatic types of knowledge, like molecular biology. That is, before the coming into being of these forms of control, nature developed on the basis of its own norms, unaware and unregulated by extraneous purposes. Yet technoscience or, more specifically, modern biology, imposed extrinsic purposes on that once self-referential nature which had so far self-regulated its evolution.

These modern projects which, in Franklin's view, comprised simultaneously the biologization of nature, the genetization of biology and the informatization (and instrumentalization) of the gene, entailed the rise of forms of control over nature according to two different strategies that can be rendered in terms suggested by Rabinow (1992). On the one hand, as Haraway proposed, the nature which once evolved according to its own inherent rules of contamination and cross-breeding was subjected by technoscience and modern biology to a normative and extrinsic reorganisation that allowed certain forms of kinship while condemned others. It was a project that resembled what Rabinow called 'socio-biology', the instrumentation of nature to produce certain forms of social life, certain forms of culture. Races, orders, classes, sexes, etc. were made 'natural' by repressing nature's original tendency to cross-mix and hybridise, while these classifications of the natural served social processes of domination. On the other hand, for Franklin the much more contemporary scenario she figures is closer to what Rabinow has termed 'biosociality', the reprogramming of a nature with a once inherent normativity according to now extrinsic 'cultural' goals and aims, predominantly shaped by the hunt of economic gain. In Franklin's view, this process implies the progressive undermining of the grounding or foundational function of nature, which has 'lost its axiomatic, *a priori* value as referent or authority, becoming instead a receding horizon' (Franklin, 2000: 190).

The accounts portrayed above are important for this thesis in that they illustrate how nature has been thought about with recourse to ideas of moral preference and social mandates (Strathern and Edwards), and intrinsic and extrinsic aims (Haraway and Franklin) that can ultimately be redescribed in terms of normativity. Such normativity shapes the ways in which nature is historically perceived, organised, and made to count in relation to the work of technoscience, by English and European lay publics, cultural critics and scientists. In focusing on these descriptions, the discussion set the frame for a consideration of nature in relation to norms, a task that was undertaken in the last section after an examination of Foucault's conception of norms.

In effect, the second section of this review expounded the Foucauldian characterisation of biopower as centrally concerned with norms, once it is a power that has life as its distinctive object of intervention and production. Here, Rabinow and Rose's and Rose's contributions proved relevant in showing – against overarching and universalising versions of the concept like Agamben's – the pertinence of probing the local manifestations of biopower, how it is very concretely and distinctly enacted in historically specific locales – in this case Argentina. Such clarification gives a cue to a project like this one, which undertakes the examination of the enactment of the norm in non-mainstream and studied settings.

Based on Macherey's clarification of how Foucault's understanding of norms differs from a restrictive conception, this review showed the productive character and immanent causality of the Foucauldian norm. In this sense, if norms, or to Butler's terminology, a regime of normativity, enact or produce subjects as part of their manifestation, this production needs to considered as co-extensive with the norm, as having an immanent character insofar as the norm does not have a transcendent, previous existence without the production of its effects. The norm acts on the object it produces and at the same it enacts itself as such. As an (absent) cause, it cannot be manifested independently from its effects.

In the third section, Butler's work was linked to Foucault's and his characterisation of biopower as a regime intimately concerned with the norm and its regulative, productive and immanent effects. Yet if Butler's contribution follows Foucault in terms of the dependence the norm has on its enactment, her contribution to a consideration of normativity was shown to pivot on the significance of performativity and its insistence on repetition. These elements are the basis for a consideration of nature as both instigating the normativity of practices, and as the result or materialisation of such practice. If nature, like Butler's sex, can no longer be considered as something occurring beyond or before culture, but rather as being the result of (or at least coextensive with) cultural (technological) practice, this thesis makes the particular claim that such production is highly normative, and that it takes place performatively. In the following chapter, I engage in a discussion that leads to a similar conclusion, yet I tackle the arguments in it from an epistemological point of view.

Chapter 3: How to understand reality? Epistemological questions and an approach to the empirical

In this chapter I provide an epistemological discussion of two set of theories, the qualitative paradigm and science and technology studies, producing a contrast between them based on their different understandings of what reality is and how it should be studied. I begin by introducing the qualitative paradigm, the two main currents encompassed within it, and providing a clarification as to why they are not suitable to studying the empirical object of this thesis. Basing my argument on this description, I then account for three 'deviations' that STS has produced from mainstream qualitative epistemologies. I use these deviations to introduce my own crafted method, which I shape by complementing an STS epistemology with a consideration of immanent normativity taken from Judith Butler.

The qualitative paradigm: interpretativist and realist visions

As a long-standing approach in sociological knowledge, the qualitative paradigm is internally heterogeneous and composed of many sub-streams. At the risk of over-simplifying its history, two main traditions are discernible. One is the tradition directly deriving from the 19th-century German historian, philosopher and psychologist Wilhelm Dilthey. Dilthey's work established a foundational division of labour between the natural sciences and the human sciences (or spiritual sciences, in Dilthey's terms). While in Dilthey's view both types of science should aspire to be scientific, that division implied that the human sciences were concerned with *comprehending* an object of knowledge, that is, they dealt with a world composed of historic, living interpreters. Natural sciences, on the other hand, invested in the *explanations* of the laws of a natural world (Dilthey, [1883] 1988). Interpretativist social sciences derive more or less directly from Dilthey's foundational division and the concomitant in-appropriateness of collapsing one form of knowledge into the other.

Although according to some commentators it is doubtful whether the interpretativist tradition managed to constitute itself as a homogenous and readily recognisable stream in the production of qualitative knowledge (see for example Reed, 2008), it is also true that a good deal of the work carried out under the label of 'qualitative' does indeed identify itself as somehow or other related to the interpretativist paradigm (cf. Hammersley, 1998; David and Sutton, 2004; Bryman, 2001). Qualitative methods have therefore been informed by different forms of interpretativism, like hermeneutics, phenomenology and ethnomethodology[76].

In effect, despite the differences between these three main currents of interpretativist methodology, they all share an explicit renunciation of the natural sciences' aspiration to observation-independent phenomena. For all three currents of interpretativism, phenomena to be studied take the form of a 'world-view' or an 'ethno-method' which is constructed through the active interpretations of the members of a given society, which in these approaches are exclusively human. In these philosophies, the human is centred as the creative axis from which social phenomena emanate. The main activity through which phenomena are constructed is interpretation, thus these philosophies reject a naïve (or even critical) realism such as that endorsed by naturalist qualitative methods. The foundational division between the human and the nonhuman, or between nature and society, further grounds the methods and techniques to be endorsed.

If this foundational division between the social as something which is characteristically produced by humans and the non-social as typically composed of nonhuman objects was the basis for the development of interpretativism, a different process occurred in relation to the 'realist' stream of qualitative methodologies. According to Clough (2009)[77], the latter tradition developed in

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[76] Garfinkel's (1967) ethnomethodology is arguably not an 'interpretativist' current, particularly given its emphasis on practices and ethno-methods that embrace more than solely the interpretations of members of a society. Yet ethnomethodology shares strong links with phenomenology and as such is considered here as an anti-realist paradigm, as opposed to the other, 'realist' stream of qualitative methods.

[77] Clough bases her claims regarding this point on the work of George Steinmetz on the methodological assumptions of U.S. sociology (Steinmetz, 2005).

the shadow of (and frequently in dissidence with) the strengthening of the empiricist, positivist and quantitative paradigm after the end of World War II which, especially in the U.S., was strongly linked to questions of governance and economy, or of how the Keynesian State which governed mass production and mass consumption could maintain control of the growth of the market.

Although, as Clough suggests, qualitative methodologists were often dissident and marginal in relation to quantitative sociology, they did not question the methodological positivism that in the opinion of Clough (2009) and Steinmetz (2005) characterised sociology in the U.S. during the Fordist era, when both quantitative *and* qualitative sociology privileged empiricism. Approximation to reality was then grounded on Symbolic Interactionism's 'naturalistic observation' as a way of investigating the interpretative processes of the participants in society. Yet the particular way in which 'interpretation' was characterised in this stream implied that such interpretation only conferred meaning to an otherwise independent and prior empirical world (Clough, 2009).

As such, this second tradition of qualitative thought was a form of positivist realism, or at least it shared key epistemological forms of understanding reality that were later taken in by a now 'post-positivist' (Reed, 2008) self-acknowledged realism. Both qualitative methodologies grounded on symbolic interactionism, and realism as an epistemology informing a great deal of the 1960s and '70s' qualitative approximations to the empirical, shared confidence in the efficacy and rationality of scientific methods of enquiry and explanation, and believed in an external reality as 'intransitive structures that exist independent of observation and regardless of their comprehension in this or that scientific paradigm' (Reed, 2008: 104)[78].

For realist qualitative methodologies, the nature/society division was not so important or foundational as it was in the interpretativist tradition. This was evinced by the fact that a number of the methods developed by realist qualitative methodologies were aimed at ensuring the achievement of objectivity, minimising the 'subjective' interference of the social researcher, and indeed

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[78] Reed reconstructs the core premises of a revised realism, or critical realism, as sharing many of realism's understandings of reality.

reproducing natural sciences' exteriority between the object of research and the researcher. This lead to an ontological conception of reality as something which existed prior to interpretation, and as constituted by internal laws that, like the laws of the natural world, are susceptible to discovery, deduction and explanation. This form of realism differs, as it will be shown below, from STS's realism.

As is now clear, both streams of the qualitative paradigm are anchored in the central role given to human subjectivity and to interpretative activity. In the interpretativist approach, human consciousness creates reality by interpreting it, whilst realist qualitativism sees reality as a prior stratum that is interpreted by human subjectivity. This focus on the human restricts attention to words and symbolic practice as privileged spaces to be examined. In both cases interpretation is granted exclusively to human consciousness. The possibility that phenomena are not only constructed in *human* interaction (as acknowledged by interpretativism) or merely *interpreted* by humans (as granted by qualitative realism), but produced also through human-nonhuman, material-semiotic exchanges, is heavily disqualified, together with the nonhuman capacity for producing semiotic outputs, and of human bodies for producing other than symbolic signification.

Moreover, in both qualitative currents 'data collection techniques' are subsumed as mute devices that merely record and silently witness human phenomena. The interpretative and observational capabilities of the methods, that is, their *performative* character, is usually minimised. Within line with a non-performative conception of ontology, in which so-called 'social' reality is conceived as prior to interaction, data collection techniques are expected to perform a restrictive role as 'collectors' of previously generated data; and since the important data to collect in 'qualitative' methods are 'interpretations' and 'opinions' and 'views', other collectors and inscriptions, such as surveys and statistics, clinical forms, medical guidelines and so forth, are underestimated as important sources of information.

Insofar as both types of qualitative epistemologies reviewed here stop short of a consideration of how reality is multiply enacted in ways that engage both human and nonhuman entities, semiotic and non-semiotic agency, this thesis makes use of some of the tools provided by STS to take into account how such forms of interaction are possible in the context of the fertility clinic. Taking into account the specific characteristics of the environment to be explored, where other than human entities like gametes, technical instrumentarium and clinical bureaucratic devices play an important role in the enactment of reality, this thesis will put forward a different epistemology. This epistemology acknowledges the varied entities that play a part in enacting clinical reality not only through symbolic signification and interpretation.

Deviations

The field of STS (in which I include versions of ANT, and which has productive interfaces with feminist epistemologies), has collectively produced a number of deviations from mainstream forms of understanding qualitative methodologies reviewed above. Broadly speaking, I anchor my research endeavour within this theoretical and methodological approach. Here I pick up some of these threads and situate them at the centre of my approach to the study of the *realities* of the fertility clinic.

Deviation 1: Reality as a multiple enacted entity: STS's realism

The first of the deviations in which I am interested is Annemarie Mol's assertion regarding the multiple character of reality, as it is produced in the coexisting but distinct environments of the clinic (Mol, 2002). Importantly, to say that a disease is multiple implies asserting that it is enacted, that it is never an object already given in its physical, material, psychological or other qualities, but rather that it is an object which is *practised.*

For Mol, diseases are multiply enacted, by which she means that they are enacted variously, in different clinical spaces, through diverse devices and forms of knowledge. Taking inspiration from this, my study explores the multiplicity of one of the many medical responses that are offered to infertility, thus ultimately accounting for the very multiplicity of infertility. 'Gamete donation' is thus examined in three of the many ways in which is it practised, and whereby it progressively acquires consistency as a readily identifiable medical service. Yet if Mol also suggests that diseases that are multiply enacted finally come to be one, there is a particular way in which I account for how the heterogeneity of the instances of enactment finally comes into being as one, into being coordinated and internally aligned. In effect, by considering the norm as an immanent domain that needs to be continually instantiated in order to persist, I describe how it is possible that a medical service that is variously performated[79] as moral, respectful of nature and of kinship, finally becomes one[80].

Furthermore, this first deviation regarding the multiple enacted character of reality is grounded in a specific understanding of how realit*ies* come to exist, and this is primarily a view concerned with realities not being purely the result of semiotic practices, but also of material, bodily and sociotechnical ones. In doing this, Mol and other STS representatives are not only stepping aside from interpretativist approximations that tend to restrict their interest to human symbolic practice and its predominant manifestation in linguistic acts, but also from a realist qualitativism exclusively concerned with the human interpretation of an otherwise still and objectified human world. On the contrary, Mol states that 'Bodies (...) do not oppose social performances, but are part of them' (2002: 40), and Callon (2007: 345) explains that all entities are shaped through 'material, textual, procedural, and other investments'.

This shift of focus to practice has been called the 'turn to ontology', a loose definition used to characterise recent commitments of, among others, STS scholars[81], to the study of 'practice', or of domains referred to as 'biology',

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[79] I explain the term 'performation' further below.

[80] I describe my use of normativity in more depth further below.

[81] The 'turn to ontology' is by no means a scholarly front restricted to STS. As van der Tuin (2008) comments, 'the new materialism' is an emergent move in feminist critique, embodied in figures like Karen Barad, that positions itself as a 'corrective' to so-called second-wave constructivist or culture-oriented renderings of the social. In terms of van der Tuin, the 'new materialism' represents an already contested approach within feminism, one which has been held to obliterate the significance of second-wave feminist scholarship on biology, the body, etc. As is clear, the 'new materialism' debate partially overlaps contributions coming both from STS

'matter', 'ontology'[82], etc. that are generally taken to be the opposite of 'discourse', 'the symbolic' and 'representation', to name a few. The 'turn to ontology' thus seeks to disavow a research strategy based on the prerogatives of the linguistic turn[83]. For example, Annemarie Mol (2002) claims that 'disease' (which is enacted through medical examinations, protocols and tomographers, among other 'practicalities') is significant in itself; that it alone – without recourse to any explanatory level of meaning – can be the object of enquiry.

Authors like Mol and Callon, then, problematise approaches like 'social constructionism', if this is to be understood as broadly based on interpretativist sociology. Yet by rejecting '*social* constructionism', they are not stating that the world is not in a sense 'constructed'. In effect this is, in essence, the claim posed for example by books like *Laboratory Life* (Latour and Woolgar, 1986), where the authors state that scientific facts are constructed through laboratory procedures (albeit this does not mean that they are *socially* constructed in the traditional sociological sense). In fact, ANT's and science studies' promotion of agencies of all sorts, which include the human but also the nonhuman as mediators (Latour, 2005) that make associations viable, places the attention *not* on the social as an enabler or prerequisite for the existence of a certain entity, but on the social as it transpires as the non-social gets associated in networks (Latour, 2005; Law, 2004). For ANT, what counts as an entity, an actor, materials, the human and nonhuman, and what is, in the end, *social*, is an effect of relationality and not an explanatory precondition established at the outset of the enquiry. The 'practicalities' that Mol sets to study are, then, brimming with 'sociality'; but this is not so much because they have a 'social history' that they retain even if they disguise it, but because they get entangled with other agencies in distinct

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and feminist production, as well as participating in Deleuzian re-workings of the empirical (Clough, 2009).

[82] I am not assuming that all these terms mean the same, but only referencing some of the terms through which this debate has been handled (cf. Mol, 2002; van der Tuin, 2008; Fraser, 2002).

[83] The 'linguistic turn' is a term designating a form of philosophy predominant during the last decades of the 20th century, for which language looses its valence as a medium, something that stands between the person and an objective reality, and becomes a vocabulary capable of creating that very reality and the person that describes it (Scavino, 1999). As I will discuss below, STS have made the critique of the linguistic turn a matter of disciplinarian definition, as is observable for example in debates around the concept of performativity (Callon, 2007).

epistemic settings, enacting then different medical objects. ‘Objects [and conditions] don’t exist by themselves. They are being crafted’ says Law (2004: 54). To say it in Latourian terms, it is in the *associations* that objects draw with other agencies that they become social, and this is the reason that defines them as legitimate areas of study in their own right (Latour, 2005).

The STS field has thus been paying attention to how scientific, medical, expert practices produce objects of intervention rather than merely intervening or describing them as pre-constituted objects. This is precisely what Annemarie Mol’s ‘enactment’ (2002) tries to address, together with Callon’s (2007) ‘performation’, or Latour and Woolgar’s (1986) ‘construction’: they are terms that point to the way in which ‘reality is not independent from the actions of scientists’ (Law, 2004: 140), or to how both the natural and the social sciences also enact the realities that they describe (Law and Urry, 2004; Callon, 2007). Such an insight is crucial to this research insofar as it allows me to problematise the ‘pre-arranged-ness’ of objects, of a disease such as infertility, of a medical service like gamete donation, of the ‘obvious’ risk of ‘inbreeding’, of the need that children look like their parents, or of the “biological need to help’ (Titmuss: 1997: 279). Such ‘givens’ are never so; they are always at least partially the result of the performative capacity of science and technology.

This way of understanding the coming into being of objects enables a distinct approach to concrete ontolog*ies*, one that starts from the premise that objects are not mute, uncontaminated entities that merely attend to or are passive intermediaries[84] in the staging of human interpretative agency, but that they are irremissibly engaged in the construction of clinical realities. These practicalities, attention to which Mol has called ‘praxiographic’, involve many forms of human-nonhuman entangling, and as their very name suggests, they frequently encompass textual and non textual activity. Practicalities involve highly routinised laboratory procedures, specific embodiments (such as filling out a form and signing an informed consent), medical examinations and so forth, all forms of

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[84] For Latour, 'An intermediary (…) is what transports meaning or force without transformation: defining its inputs is enough to define its outputs’ (2005: 39).

practice that are not exclusively concerned with expressing opinions, perceptions, or perspectives on a given, un-practised object.

Other authors have proposed, in similar terms, that objects need to enter the focus of attention. For example Haraway has discussed the ways in which technoscience engages agencies, elements and processes of different sorts. Technoscience connects, for example, 'institutions, narratives, legal structures, power-differentiated human labor, technical practice, analytic apparatus, and much more' (Haraway, 1997: 142). All these get entangled in technoscience, and therefore

> 'Reality' is certainly not 'made up' in scientific practice, but it is collectively, materially, and semiotically constructed –that is, put together, made to cohere, worked up for and by us in some ways and not others (1997: 301).

Likewise, Michel Callon (2007) has also argued in favour of looking at 'practicalities', which he understands as configured through processes of 'performation'. Like Mol's enactment, performation is no longer concerned with 'truth' or with the accuracy of the adjustment between description and referent, but rather with how scientific and expert objects are performated in practice, for example in academic, medical or engineering practice. As a variant of performativity, which in Callon's view still retains some trust in the magical capacity of language to produce what it describes, performation is a concept designed to 'make sociotechnical arrangements visible' (2007: 327). It allows the researcher to take into account materialities and it foregrounds the fact that performing is not about creating through an act of language, but about *making happen,* about providing the material, textual, institutional, procedural *conditions* under which a 'configuration of the agency' will take place.

A key point in Callon's definition of performation is that a certain configuration, enabled by an act of language, by the deployment of material devices, etc. works only if *certain conditions of felicity* are actualised *together with* the statement that is uttered, the artefacts deployed, etc. Such deployments are always contingent on the actualisation of the 'world' (Callon, 2007) they need in order to become *effective*. It is a similar point to that made by Butler (2010) when she clarifies the distinction between illocution and perlocution:

> Austin distinguished between illocutionary and perlocutionary performatives: the first characterize speech acts that bring about certain realities (...) The second characterizes those utterances from which effects follow only when certain other kinds of conditions are in place (2010: 147).

This is why for Callon 'performation' shifts the focus from the register of truth (does the statement properly describe the referent?) to the register of success or failure (did the appropriate felicitous conditions take place so that the perlocutionary statement could be successful in making possible what it purported to enact?). Importantly, for Callon such felicitous conditions are the appropriate 'agencements' that need to happen so that the configuration successfully takes place. Callon uses the term 'agencement' following Deleuze and Guattari (2002). The term describes 'the combination of heterogeneous elements that have been carefully adjusted to one another' (2007: 319). By contrast with the otherwise similar term 'arrangement', it has the additional benefit of avoiding reinstating the divide between human agents and the things that they arrange, annihilating the '"out-thereness" of the world and the innerness of subjects' (2007: 327). As Phillips (2006) pinpoints, *agencement* indicates the *priority of the connection* between agents and objects, between a 'state of affairs' and a statement, whose joint production exceeds them as parts.

'Perlocutionary performativity', 'enactment' and 'performation' are thus ontological stances that highlight how the empirical realit*ies* that scientific or clinical practices claim only to describe or handle are in fact something which *becomes possible* (Callon, 2007) through those very same scientific and clinical practices. They are relevant terminology in this thesis, one which allows us to think how a medical service like 'gamete donation' is gradually constituted as a specific and to a certain degree contingent answer to another not-given, but *practised*, object, like infertility due to the lack of own gametes. Moreover, terms like 'performativity' and 'performation' enable a commitment to a 'follow the actor' approach (Latour, 2005), which I favoured during my fieldwork experience, insofar as they help to capture how things *are being done* or *performated* by those actors whose actions the researcher follows.

In this move, STS re-introduces the question of post-humanism and materiality as a way to debunk the post-modern appropriation of the term ‘constructionism’, and denounce the hidden anthropomorphism that is imported by the linguistic turn (Sørensen, 2003). ‘Praxiography’ (Mol, 2002) will then emerge as STS’s interest in acknowledging the not-only-linguistic phenomena that enacts science’s realities, phenomena that will no longer be mute and amorphous, nor will be any more exclusively animated by the social conventions of the sign.

Deviation 2: Nature and society

The second deviation from the qualitative tradition that I want to pay attention to is the refurbishment of the nature-society *distinction* into a *similarity*. As was outlined above, underlying STS epistemology is a particular understanding of how realities come to be real. In effect, if the specific type of realism and agency promoted by STS is described by terms like ‘(perlocutionary) performativity’, ‘performation’ and ‘enactment’, it is because it has completed the passage – initiated in the social sciences by theories like hermeneutics – from positivist understandings of society and nature to *performative* understandings of nature and society.

Where the foundational division between the social and natural sciences established in the sociological tradition by Dilthey’s (1988) hermeneutic philosophy served to demonstrate how the object of study of the social sciences needed to be conceptualised differently from that of the natural sciences, it did not question the idea that nature was an already given strata that could be approached through positivist-informed methods. As discussed earlier, this is exactly the division of labour that still structures much of the work being done under the rubric of ‘qualitative methodology’, and which anchors the latter’s exclusive interest in words, meaning, and human subjectivity (cf. Hammersley, 1998; David and Sutton, 2004; Bryman, 2001). With this, hermeneutic sociology

– from which much of current qualitative approaches derive – was half-way between positivism and performativity. It sustained a positivist ontological conception of nature, but it claimed that society could not be approached as a prior and external entity, because it was in process and, crucially, it was enacted through the interpretative capabilities of its participants.

Yet going beyond this, scholars in the STS, ANT and feminist fields have acknowledged how the previously untouched objectivity of nature is *also* the resultant of practice, of specific apparatuses in local entanglements, and of the coordination of dissimilar agencies which do not reduce to the human (Latour, 1993; Haraway, 1997; Barad, 1998, 2003; Law 2004). These studies have shown that the same technologies (such as Robert Boyle's air pump) that instrumentalise nature through apparatuses that make nature knowable, adjusted to modern scientific modes of experimentation and demonstration, are the technologies that – in the very same act – construct nature as an autonomous, solid, out-there entity independent of human intervention. Nature as a prior and definite entity is, to use the words of British STS sociologist John Law (2004)[85] an in-here which has as its Other, or non-manifest absence, its own artefactual status. Both function together and depend on one another: without the conviction that Nature is an entity out-there (an entity in-here in Law's terminology), transcendent to human intention and design, the air-pump experiment (the paradigm of the operationalisation and performation of nature) would be totally ineffective.

Karen Barad (1998, 2003) is also clear about this: a particular version of nature emerges 'intra-acting' with the specific material-conceptual apparatus that is operationalised in each case. Different conceptual and material apparatuses materialise different realities (or natures)[86]. The nature that emerges through a

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[85] I describe what Law (2004) means by these terms when discussing 'method assemblage' below.

[86] Expanding what she calls Niels Bohr's 'post-Newtonian framework' (2003: 4), Karen Barad states that there is no inherent distinction between the object of observation and the agencies of observation (that is, between what is known and the agencies summoned to make that knowledge possible). Such a 'cut' (between agencies and objects) is the always specific result of a particular measurement process. In Barad's terms 'This particular constructed cut resolves the ambiguities only for a given context; it marks off and is part of a particular instance of wholeness' (2003: 4). This would mean that what gets 'cut' as nature in a particular

particular technoscientific apparatus has a fundamental, intrinsic relation with that apparatus. Thus, the generative interfaces between feminism and STS have long ago demonstrated this: nature is constructed, and this enactment takes place, for example, in technoscientific practices among other types of practices (Haraway, 1997; Butler, 1990; Barad 1998, 2003; Latour and Woolgar, 1986). Foregrounding a different type of realism than that of the qualitative tradition, feminist and non feminist STS have therefore problematised the performativity of social sciences (that, as an ontological practice *enacts* society by knowing it) (Law, 2004; Law and Urry, 2004; Mol, 2002; Latour, 2005) *and* the performativity of natural sciences (which, by localising specific apparatuses in technoscientific networks, or by enabling the embodiment of specific discourses, *produces* nature by experimenting with/embodying it) (Butler, 1990; Haraway, 1997; Barad 1998, 2003).

Thus, the crucial point contributed by STS is that nature and society are co-produced rather than the result of radical different processes. By producing 'nature' through, for example, certain technoscientific networks, inscription devices (Latour and Woolgar, 1986) and apparatuses (Barad, 1998, 2003), a certain society is also being produced (a society that is based on the types of associations that take place) (Latour, 2005). ANT has taken this cue to characterise the 'principle of symmetry' (Callon, 1999) as a 'methodological good'. This principle states that, since nature and society are co-produced, there is no point in inflicting *methodological* differences on the approach to their study. They need to be treated on the basis of symmetry, that is, as if both nature and society were the resultants of similar processes (which, in Callon's and Law's views, they are). In what is a key epistemological feature in many STS approaches to the empirical, 'proper science' and 'social science' shall not be divided but studied as if they were the same subject matter (Sørensen, 2003; Latour, 1999); there is the need, then, to understand how both natural and social phenomena define and associate elements in order to build their world (Callon, 1999).

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technoscientific context is a local and temporal resolution of the ambiguities surrounding what nature is in general. 'What is nature?' is a general question that only has particular answers.

The above contributions are key to this research in providing a framework through which to think how the nature that is supposedly only handled in the different epistemic environments of the clinic, is actually being performated by practice. As Karen Barad explains, the nature that is described (as when a biologist says that 'lack of biological variation is bad for the species') through scientific practice has an intrinsic, particular relation to the framework, the material apparatuses, the sociotechnical investments (Callon, 2007) or the practicalities through which that description becomes possible. The present piece of research makes specific use of such modes of understanding natural science insofar as they show how the normativity of nature is enacted through such scientific practices.

The research that is presented in this thesis also benefits methodologically from the insights discussed above insofar as they allow us to think about the performative character of social science research in which it takes part. By describing the performations and investments of scientists and doctors working in the domain of Argentinean IVF, it actively participates in the enactment of gamete donation as an empirical object of study. Moreover, because, as STS contributions have made clear, nature and society are necessarily co-performated in any scientific practice, the present research also collaborates, by describing it, in the programming of a certain type of nature. Specifically, it enacts nature as a domain normatively produced, a configuration that is both possible through the natural science and medical practice of biologists and doctors, and through the social science practice exemplified by this piece of research.

Deviation 3: Transitoriety, overflowing, misfires

The third and last deviation from mainstream qualitative methodologies that I want to briefly discuss here is the transient character that STS's epistemology attributes to the realities that they study. In effect, opposing the rather stultifying effects that qualitative approaches tend to produce in what they usually characterise as a single reality, STS's epistemology points out the ubiquitous ephemeral, the flux and in-process qualities of what is known or enacted, a character that is frequently acknowledged through the concept of 'assemblage'.

Based on diverse forms of producing presences or gatherings, Law (2004: 42) calls 'method assemblage' a movement of bundling or self-assembling 'in which the elements put together are not fixed in shape, do not belong to a larger pre-given list but are constructed at least in part as they are entangled together'. In a method assemblage, the links between materials and statements are 'precarious chains of relations' (2004: 83). Method assemblages, for Law, are gatherings by means of which such chains are made invisible, pushed into an invisible 'out-there', while creating on the other hand visible 'in-here' statements that describe a visible absence, which is an out-there yet visible object. A method assemblage is thus a gathering that makes something present (i.e. statements describing a disease; practices of phenotypic matching), while at the same time the very object that is described or enacted (and which for that reason is visible yet absent in what is made present) is made to count as a matter of fact, indisputable entity (a certain disease, the physical resemblance between parents and children), and at the same time something else is othered, or pushed into invisibility (for example, as I will show in this thesis, the preservation of certain bodies).

Precariousness, contingency and inessentiality are thus features of practice that are emphasised through the use of the epistemology presented here. Yet scholars in the STS field also point to the necessity of recognising the durability of that which has been constituted through mainly contingent progression[87], or else which is non-essential[88]. For example Latour (2005: 34) states that 'what has to be explained, the troubling exceptions, are any type of stability over the long term and on a larger scale'. In this view, the identity of, for example, an actor needs to be accounted for in terms of the processes that sustain their activity rather than taken for granted at the outset of the analysis.

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[87] I thank Celia Lury for pointing this out.

[88] I problematise what I consider the lack of conceptual tools to acknowledge the normative character of contingency in some STS versions in the following section.

As I will explain in my discussion of normativity below, the realities that this research explores need to be considered as both contingent *and* normative, and therefore enduring. The concept of *performative normativity* that I use is specifically designed to acknowledge such particular character of the medical realities studied, insofar as it encompasses both an idea of performativity, of something which is produced as long as it is done, and an idea of the normative, of ensembles that do not occur randomly or ungoverned. That is to say, although I embrace STS's claims regarding the transient character of realities, such transitoriness needs always to be understood in relation to immanent performative normativity.

Finally, I also want to make the proviso, together with Callon, that any configuration or performation of a certain kind, like the ones that this thesis studies, is necessarily bound to fail in some way, or at least needs to be assumed, in advance, to have a symmetric relationship to failure and success. This is what Callon terms 'overflowing' (1997, 2007), to suggest the impossibility of a total 'framing', or configuration. In effect, for Callon, agency always escapes the programme that tries to frame it, a situation to which he has recently alluded to as 'misfire':

> We can choose to call this misfire overflowing, when we equate perlocutionary performativity (i.e. performation) with a framing that, like any other, produces or, rather, ends up producing, its own overflowing (2010: 164).

For Callon, in fact, misfires are the rule, and they are exactly what appears once one broadens the timeframe between illocution and perlocution. This is because illocution – as an extreme case of perlocution, when the material conditions required for its success are met – seems successful only because it manages to momentarily hide the necessary misfires that comprise any illocution.

The idea of overflowing or misfire as necessary correlatives of performation and enactment will be used in this thesis to draw conclusions both about the possibilities of configuration, and about its limits. For example, while Chapter 5 explores the attempts made at equipping subjects with moral aims and enacting donation acts as moral kinds of acts, it also alludes to the always present possibility that such efforts are unsuccessful (i.e. that people are not configured as selfless, un-interested, etc. despite the investments made to produce this result; that people effectively act selfishly, for example out of the search for payment). Similarly, Chapter 6 and 7 propose to think of the donor, the 'sibling', the recipient and the offspring as figures emergent within particular sociotechnical investments. For the clarity of the argument the emphasis is put in these analyses on what the investment aims to performate, yet as Callon suggests investments are also bound to fail in some way, and in this sense it is always a possibility that the people who are aimed in such investments neither 'feel', nor act, like a donor, a recipient, etc. These concepts are thus fundamental in complementing the attention that this thesis pays to the co-formation of nature and society, signalling that such performations are always fragile and reversible.

A crafted method

I have discussed above three core deviations through which STS have presented an alternative epistemology to the one which sustains much of social sciences' qualitative tradition. I have done this so as to introduce my own crafted method, discussed in the remaining of this chapter. Although I embrace most of STS's innovations in the methodological field, I take particular issue with the question of normativity and whether or not STS's epistemologies make it possible to take into consideration the normative aspect of clinical practice. I also discuss why what is usually alluded to as 'meaningful' practice can be understood not as a prerogative of the human but as an emergent effect of human-nonhuman interaction.

I have crafted this method in accordance with the realities that are to be studied; that is, the methods are proposed as an epistemological approach coherent with the ontologies that are to be studied. If the clinical setting that is the focus of this piece of research is a world populated by words, it is also a material world, co-produced by artefacts and humans, by routine and innovation, by protocols and exceptions. It is a world where praxiography reigns, yet it is traversed, and held together by in-built, frequently blackboxed forms of normativity. It is in response to these realities that here I put forward an understanding of the material normative.

Towards a material thinking about the norm

Regarding the question of normativity, a certain demand for relevance arises. In effect, why is normativity important at all? My answer is that the question of kinship and the reproductive technologies has been referred to in the relevant literature as one contemporary juncture that conveys issues of risk, change and uncertainty, and thus normativity surfaces in the wake of this unpredictability of the new possibilities contained in procreative technology. For example, as I have already discussed, Marilyn Strathern speaks of the perceived reduction in choice that is a paradoxical result of the increase of choice due to reproductive technologies. She also points out the escalation in cultural perceptions of the loss of nature, which ultimately reflects upon assisted conception as a watershed between former and current reproductive models (Strathern, 1992a). Sarah Franklin speaks of the moral uncertainty and political controversy raised by increasing intervention into reproduction, emphasising the blurring of boundaries between human, plant and animal reproduction (Franklin, 1995, 2000). And Franklin and Roberts argue that the debate about a reproductive technology like PGD has 'often [been] primarily judgemental' precisely because of the pervasiveness of representations of medical technology 'racing ahead' of society (2006: 11).

It is in the context of these cultural critiques that I raise what could be read as a rather 'reactive' preoccupation with normativity, in terms of the resonance of the uncertainty that technology introduces in the established pathways of kinship reckoning and ultimately in what are believed to be the values of the community. Questions of the norms (or the 'elementary forms' Lash [2009][89]) flourish rapidly in contexts of change, like the present one in

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[89] Lash recovers the preoccupation with the 'elementary forms' as a concern of what he calls a positivist and rationalist sociology. In Lash's terms, classical sociology (Marx, Weber, Durkheim

Argentina in relation to reproductive technologies. It is precisely because of these associations with the preoccupations of positivist and functionalist social science that normativity does not enjoy a good press in the present of sociology. In effect, as Lash points out, concerns with norms and normalisation have more often than not been raised as conservative concerns, as slightly disguised social anxieties in the wake of perceived disintegration and fragmentation of the core values of society.

Nevertheless, I want to defer the conservative nuance that questions of normativity may have, to inquire about the valence of the normative to explore the enactments of the clinical realities of infertility. Rather than a question about social control or social cohesion, I want to pose normativity as being pertinent specifically in relation to what I see as an explicit, almost disciplinarian silencing of this issue in STS and ANT contributions (cf. Mol, 2002; Law, 2004; Callon, 2007), with the probable exception of the work of Bruno Latour[90]. As discussed in the previous sections, some scholars working in the STS field take issue with the elision of the question of normativity, since the ephemeral assemblages and the realities that 'hang together *somehow*' (Mol, 2002: 5, my emphasis) are believed to take place in explicit disregard of norms.

The reason for this oblivion lie, I believe, in the fact that normativity has been thought of in these accounts in a narrow fashion that equates it with questions about what is good and what is bad, and therefore with issues of rational decision, transcendental standards and universality. And since all these are ruled out as having nothing to do with the actual enactments and multiple

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and Simmel) was rationalist and positivist in kind, stemming from Kantian rationalist *a prioris* and branching into functionalism and phenomenology.

[90] In a 2002 article, Latour characterises technology and morality as ontological categories (or modes of being) which help the human to become as such, rather than being the products of human (material, symbolic) activity. Granting morality the same 'ontological dignity' as technology implies understanding the latter as different from means and the former as different from ends. In this sense, technology is not the means to reach moral ends, but both modes should be understood as assemblages of heterogeneous and unpredictable entities that constantly force transformations of the original ends. Morality, for Latour, is something very different from a form of human emanation that stipulates obligations (and ends), but rather something *inscribed in the things themselves* that prevents us from using them as mere means, that is, that 'oblige us to oblige them' (Latour, 2002: 258). Although his emphasis is different than mine, this conception in which morality ceases to be a prerogative of the human and is crucially entwined with materiality differentiates Latour from other STS-ANT scholars' (implicit) understanding of normativity.

ontologies that populate realities, then normativity is also ruled out. That is, even if the substantive epistemological contributions of the STS-ANT field would in principle allow for a conceptualisation of the norm as something enacted, tied to material events and dependent on the agency of other than human objects, such inputs have not been expanded to a reconsideration of the norm as something different to a standard in relation to which reality is measured.

The work of Mol, for example, paradoxically denotes a thoroughly non-performative conception of normativity, since in her thought 'norms' seem to be confined to questions about the good once and for all[91] (for example: is paying for gametes right or wrong?). Since this question does not have an answer, then normativity is irrelevant. In a similar vein, Callon states that 'the context [of enunciation, the felicitous conditions] is not reduced to institutions, *norms or rules*; it is a sociotechnical arrangement' (2007: 327, my emphasis), obviously partaking of a vision where norms are different from a sociotechnical agencement.

To oppose these versions of norms, I want to ask a different question: What if normativity is immanent in the sociotechnical realities that this thesis studies, and thus not universal or rational, or immaterial? What if it is not about transcendent, rationally deduced values separated from ontology that predicate universally on the good and the bad, but is rather about what is – and what is not – in an empirical enactment? What if normativity is about the actual shapes that ontologies acquire, and the *in*-actualized potentialities that are left behind? And what if it is not different from the sociotechnical, but ingrained in it, enforced through and in material arrangements as its predominant form of existence?

In these questions I am guided mostly by Butler's theory of normativity (1990, 2002) discussed in Chapter 2. As I have already made clear, Butler's theory

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[91] In her 2002 work she says: 'I want to stress that the growing interest in medicine's normativity has predominantly focused on *who* questions. Questions about *who* is being put, or should be put, in the position to decide what counts as good (...) [but] In contrast with the universalistic dreams that haunt the academic philosophical tradition, the world we live in is not one: there are a lot of ways to live. They come with different ontologies and different ways of grading the good. They are political in that the differences between them are of an irreducible kind. But they are not exclusive. And there is no *we* to stand outside or above them, able to master them or choose between them: we are implied. Action, like everything else, is enacted, too (…) I do not seek to confirm that all is well, but have argued instead that separating out right and wrong is only possible if one has a standard' (2002: 160; 181-182).

of performative normativity makes it possible to think of the norm as not being anchored in any transcendental level, whether this be the level of rational (human) deductions regarding the good and the bad, or the level of unconscious and universal (yet efficacious) structures that are also predicated on the forbidden and the acceptable. Moreover, (like STS) Butler's theory of performative normativity also provides space to theorise openness, process and change by disreifying norms as some symbolic, pre-social unconscious[92], and by emphasising the necessary instantiation of such norms in order to endure. For example, writing about kinship norms Butler has stated that

> (...) the task would be to take up David Schneider's suggestion that kinship is a kind of doing, one that does not reflect a prior structure but which can only be understood as an enacted practice. This would help us, I believe, move away from the situation in which a hypostatized structure of relations lurks behind any actual social arrangement and permit us to consider how modes of patterned and performative doing bring kinship categories into operation and become the means by which they undergo transformation and displacement (2002: 34).

For Butler, then, the so-called 'foundational' norms of society (the incest taboo, the Oedipus complex and heterosexuality) do not exist *but* in their instantiation; they do not belong to some foundational pre-social symbolic structure. However, they have a certain efficacy in sustaining certain cultural orders, an efficacy that operates through materialisations, embedded in particular situations, and thus always differently practised. That is, because they do not belong to a symbolic order but rather to the performative domain that Butler calls the social, norms have an efficacy that is not granted in any theoretical or immaterial space but in their ephemeral manifestations. And because such materialisations are always differently located and specific, Butler is able to show how realities are normatively organised, although in a manner that is always uncertain and contingent, or open to failure (Callon, 2007).

Although this thesis does not take Foucault's work as a framework, Butler's theorisation of performative normativity has points in common, as I have suggested in Chapter 2, with the Foucauldian norm. This is specifically true

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[92] Departing then from structuralist or psychoanalytic views of the Symbolic as an order of pre-social, foundational normativity.

of its emphasis on concrete enactment (a regulatory effect is only achieved through an operation on the social) and on strategic organising. As Rabinow (2003) points out, following Foucault, an apparatus is the network that can be established between heterogeneous elements such as institutions, architectural dispositions, texts and moral outlooks, and its aims are identifying and regulating targets, thus in a sense constituting a specific answer to larger problematizations. Foucault's understanding of an apparatus (here through Rabinow's rendition) is crucially concerned with aspects as concrete as the shape of a building, while Butler's understanding of normativity is more attentive to the inherent instability of a normative arrangement insofar as its constitutive repetition is always necessarily deviation. Yet crucially both understandings share a preoccupation with the *strategic* character of a configuration, while emphasising at the same time its contingent nature. That is, there is an apparatus in Foucauldian terms, or a normative organization in Butler's terms, whenever a concrete, material, bodily, strategic *and* contingent arrangement takes place.

Meaning, interpretation and the material-semiotic interface

A last issue that I want to pay attention to in my crafted method is the question of the material and the semiotic, and their relations with meaning and interpretation. In effect, in the method I craft I am interested in the *words*[93] that enact 'meaning', not because I want to defend them against their dismissal in science and technology studies (cf. Mol, 2002), or because I believe that the social sciences have a privileged access to them, but because, following the theory of performativity of Judith Butler (1990, 2002), I consider that by enacting meaning those words have performative qualities, that is, make entities and practices solidify in particular ways. Yet in the clinical realities that I study, words[94] are one of many ways whereby realities are constructed. Other forms include, as I have suggested, material performances of human and nonhuman

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[93] As both uttered and inscribed in texts.

[94] Words have a *material* existence given in their sound as a physical element. In what follows I treat words according to their commonsense understanding, that is, as carriers of meaning (and not as carriers of physical properties).

bodies, the actions mobilised in both artificial and natural entities, the possibilities and limits posed by spatial coordinates, and so forth. Thus, here I follow STS and particularly Latour's epistemology (1999) in ascertaining that realities are never the sole product of words (something which has already been well-established against the linguistic turn, for example in Latour [1999]), nor are they the product of human signifying action conferring meaning to otherwise 'dumb matter' (Massumi, 2002, quoted in Clough, 2009: 12). As Haraway has stated, 'the opposition of "knowing minds," on one hand, and "material reality" awaiting description, on the other hand, is a silly setup' (1997: 302). Hence, a different epistemology to this one is needed to acknowledge the creation and stabilisation of the clinical realities of infertility.

In effect, following Latour (1999), realities are made to appear through the *interaction* of words and materiality, where words comprise the full range of symbolic signification, and 'materiality' entails not the dumbness of the absence of signification *tout court*, but the potentiality of other than symbolic signification. Textual and oral words do not act alone in creating reality, but they act *in coordination* with (but also *in discordance with)* the material. So, for example, Latour's *inscription* (1999) is *one way* in which the material and the world of words are entangled and produce meaning conjointly. Thus, it does not make sense to say that a word has material effects (as do many forms of social constructionism), if this is scarcely true, or unlikely, or not provable. What does make sense, at least in the context of a clinical and scientific setting, is to say that the entanglement of words and the material world has effects of meaning. 'Meaning' is thus no longer something to be extracted from the opacity of reality, but a surface effect of the technoscientific enmeshing of human and non-human, material and semiotic entities.

In this chapter I have discussed the problems related to ascribing to what is routinely alluded to in social science as 'qualitative methodologies', and have derived from this critique a rationality for relying on the epistemological innovations suggested by STS. Through the identification of three core deviations through which an STS epistemology has distinguished itself from the qualitative paradigm, I was able to craft my own epistemological premises, which incorporated an idea of performative normativity. These premises take up elements of STS and Judith Butler's work, yet also differ from them in criticising Butler's focus on *human* normativity, and the failure of STS to acknowledge the issue of norms. In the following chapter, I provide an account of the encounter between my epistemological commitments and the field.

Chapter 4: On researching a clinical setting. Close encounters in the 'world/word'

This chapter is devoted to presenting how this research was actually carried out, and to recounting my fieldwork experience, making sense of it in the light of the previous ontological and epistemological commitments described in Chapter 3. I begin by providing a personal account of the time I spent at fertility centres during two fieldwork experiences in Buenos Aires, Argentina. I comment on how the sample of interviewees was composed, provide reasons for researching the Argentine setting and describe, more broadly, the field and the people I contacted. In doing this, I also give reasons for focusing on experts (rather than including other groups, like patients, who also inhabit the clinical space), and explain what I understand by the category of 'expert'. I then go on to account for how I sustained my interest in practicalities and the commitment to examining human/nonhuman interaction throughout the fieldwork experience. Before accounting for how I contacted the interviewees, I recount my experience at two fertility laboratories visited during work in the field. I finalise the chapter with a reflection on the gender dynamics that shaped my experience of doing fieldwork in a medical and scientific setting.

The research

The analyses I present in the following chapters are the result of two fieldwork periods, one lasting three weeks during November 2008 and the other three months during August-October 2009, spent exploring Buenos Aires's reproductive medicine field. Time and financial constraints meant that the periods of fieldwork could not last longer than they did. In addition, both spatial and disciplinary distance towards 'my' field implied that I could not easily go back and re-question some interviewees when I felt I needed to. This fact reinforced the apprehension of the fieldwork as an enclosed experience that started and finished, a non-renewable 'source' from which I have gradually fed this thesis. Although as I worked and re-worked my interviews and my writing I did of course find more and more layers of intermingled meaning and practice, I have also been haunted to some extent by the finiteness of my 'sample', its eventual exhaustion and irreplaceabilty. I have written this thesis against that feeling.

Yet because the actual qualities of time and space are relatively independent from how they are perceived by persons, although I experienced my time in fieldwork as short and stressful (brevity and anxiety reinforced each other: I was constantly worried that I was 'running out of time'), and cut-off from the rest of my academic life in London, the data that I gathered has proved able to persist and multiply. Thus I have also found myself at times 'swamped in data', unable to use, process, make sense of or include several sets of information that pointed in numerous irreconcilable directions, both in terms of subject matter and methodology[95].

That is, having encountered messiness, multiplicity, stress and obstinacy in the field, I have come across them again while sitting at my work desk; a somewhat painful experience that has led me to reflect on the difficulty of dealing with 'mess' and making space for multiplicity in the process of research, particularly if one is committed to a 'follow the actor' approach (Latour, 2005: 11) rather than trying to impose some order on the actors' actions. Surrendering to mess and multiplicity appears thus to require a great deal of control over the

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[95] Although this is partly the result of the anarchic conditions in which all fieldwork is necessarily and ultimately carried out, back in London I found myself with interviews that covered completely different topics even if performed to people trained in the same disciplines and following the same interview guide. For example, I have one single interview with a gynaecologist about the financial arrangements of a fertility clinic, and one single interview with another gynaecologist discussing training schemes at a clinic. Both interviews were interestingly difficult to articulate in the final shape of this thesis. I also have three interviews with researchers in basic science, one interview with a fertility activist (fighting at the time for infertility legislation), and five interviews with doctors who practice in a different city to Buenos Aires. To complicate things further, some of these categories overlap (for example, I interviewed two basic scientists in the other city where I carried out the short fieldwork). Although such variety may seem a good criterion to exclude some interviews from my 'sample' altogether and thus simplify it at once (leaving in it, for example, only medical and mental health practitioners who practice in Buenos Aires), the messiness of this data complicates such neat criteria on which I could in principle exclude some interviewees. For example, should I exclude the basic scientists, even if they were giving me crucial information about some technical procedures that I was interested in studying? Or should I exclude the people from the city which is not Buenos Aires, even if they share the same disciplinary training that the core of the sample? I decided to stay with my sample as it was (with the exception of the fertility activist), although I have drawn on some interviews more than on others.

types and degrees of messiness that one would allow to go into the thesis. This fact has led me to think about how much of what we now fashionably call process, multiplicity and complexity has not already been widely (and wildly) domesticated to be able to be called so.

During the course of fieldwork, I held thirty-four interviews with people performing as one kind of expert or another in Argentina's reproductive medicine field, yet for reasons that I describe below I analyse only twenty-eight of these interviews. There are a number of reasons why I have chosen Argentina for my case study. The first and foremost is that it is the place where I was born and raised, where I studied Sociology, progressed to graduate studies, and developed my interest in the field of technology and reproduction. It is thus the country where I developed a network of contacts that could help me carry out this project, a network that did in fact prove useful when initiating my research.

Another set of reasons for carrying out research in Argentina rather than, for example, in the UK, is related to how the reproductive medicine field has developed in the former. What makes Argentina an attractive case study is its unique combination of a number of factors, among which four are immediately relevant:

a) The dimensions of the field in terms of users/patients, the amount of cycles carried out and the number of practitioners working in it. As mentioned in the Preface, Argentina is the second country (after Brazil and before Mexico) in the Latin American region in terms of quantity of cycles started per year (Zegers-Hochschild et al., 2009), yet has a smaller population than those two countries. Furthermore, more than three hundred professionals practice reproductive medicine in Argentina;

b) The high standards of practice in regional terms, a fact that derives from the quality of medical training, and which is manifested among other things in the fact that the country is consistently ever more popular as a destination both for treatment, and for studying and training on the part of medical students from neighbouring countries;

c) The fact that in spite of having existed for more than twenty-five years, the field has remained largely unregulated, a situation that Argentina shares with all

other countries in Latin America and that is linked, among other factors, to the pervasiveness of religious understandings of the ethical status of the embryo;
d) The limited specialised attention that has been paid to assisted reproductive practice in Argentina by comparison with other cases (particularly those of the UK, the US, Australia and certain European countries), and especially in accounts shaped by an interest in STS and produced in universities of the Global North.

These reasons explain my decision to study the Argentine reproductive field, a project that I carried out empirically, as previously mentioned, by interviewing experts. Interviews with practitioners are, then, the one of the main sources of data on which I have relied to build up the arguments of this thesis. Although the interview is a heuristic device which clearly privileges the verbal, my way of using it tried to produce it as a device by means of which practice is described (and thus, to a certain extent, also performed), rather than as a mechanism for extracting 'deeply hidden meanings'. Hence, following Annemarie Mol's suggestions regarding the act of interviewing for research, I used my dialogues with experts to ask 'about what they do and about the events that happen to them, rather than about their thinking', insofar as I ascribe to the view that 'unraveling medical knowledge requires an investigation into clinical procedures and apparatuses rather than into the minds and cognitive operations of the physicians' (Mol, 2002: 14).

With regard to the group of people interviewed, the final sample of this research was composed of twenty-eight core interviews to medical doctors, biologists/embryologists and geneticists, and mental health practitioners in Buenos Aires. The rest of the interviewed persons were three scientists (two in the city which is not Buenos Aires, one in Buenos Aires) and three practitioners in the city which is not Buenos Aires (all of them gynaecologists). I do not analyse these interviews here, yet they were important in giving me a wider understanding of the field. I also carried out one interview with a fertility activist, but because the aims of my research were circumscribed to examine the practices of the expert field, I do not take it into account here. Among the twenty-eight practitioners performing in Buenos Aires, fourteen were gynaecologists, six were biologists and biochemists[96], two were geneticists, four were psychologists or psychoanalysts[97], and the remaining two were a gynaecologist with further specialisation in gynaecologic endoscopy and a specialist in general medicine, endocrinology and reproduction.

In making these distinctions, I am mostly following the practitioners' own professional ascription as it was formulated as an answer to my question regarding their formal training, rather than mine[98]. Biologists and biochemists are classified under the same category since in my experience these professionalisms carried out approximately the same job at the lab[99], whereas geneticists (who are listed following their self-ascription as a different category although usually trained initially as either biologists or biochemists), tend to perform a different job (largely involving genetic testing of the embryo). Many of the practitioners in the two last categories will also self-define as embryologists; since they possess a first degree in Biology or Biochemistry they contemplated their daily work as people who deal with embryos. Finally, all the participants were interviewed only once, with the exception of one interviewee (who was firstly interviewed by

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[96] I also count in this group one veterinary who practiced mainly as an embryologist specialising in animal cloning at a centre for human reproduction, and who frequently helped staff at the clinic with procedures relating to human reproduction.

[97] Mental health practitioners in Argentina have two main paths of professionalization. Many obtain a first degree in Psychology (usually after five or six years), and may (and frequently will) specialise in one or more Psychology specialism. Some of these may professionalize in Psychoanalysis by attending courses at one of several institutions offering them, the choice generally depending on the approach the professional sustains (lacanianism, freudianism, etc). This professionalization will usually take several more years, between three and four on average, and includes a taught component, conference and workshop presentations, and the requirement to be in psychoanalytic analysis for the duration of the training. Traditionally (during the '50s, '60s and '70), those self-ascribed and/or practicing as psychoanalysts would have studied the first six years of a medical degree, and specialised in Psychoanalysis at the Argentine Psychoanalytic Association (APA). This trend may be changing as nowadays fewer psychoanalysts are self-recruiting among medical students, and more among Psychology students. Many training institutions do not in fact require a first degree in Psychology any more. Psychiatrists would have followed a similar path but specialising at a medical faculty. Argentina, especially in its urban areas, has one of the highest numbers of practitioners of psychoanalysis in the world (Lakoff, 2005; Plotkin, 1998).

[98] In a limited number of cases, I did not ask this question because the interview started in a different way and it was thematically difficult to go back. I rely in those cases on the practitioners' overall role at the clinic where they perform, and/or on their CVs as published by their institutions, to name their professional ascription.

[99] Concerned mainly with the manipulation of gametes and embryos and aimed at achieving fertilisation.

phone and later in person). The interviews were carried out in Spanish, which is my native language and the quotes translated by me from Spanish to English[100].

By talking about 'experts', I am mostly referring to practitioners who have professionalised in different medical and biological specialisms and who practice in the field of reproductive medicine. They are people who both self-identify and are recognised by other key actors as members of the field, and who practice in technical and professional roles, in institutions accredited to work under the self-imposed standards of the medical field. I also include in the category of 'expert' mental health practitioners who are usually less institutionalised in the field, yet are generally acknowledged as belonging to it. All the interviews I carried out with practitioners self-ascribed as psychologists or psychoanalysts were with people who performed either *inside* fertility centres (in a Psychology Department, for example), or *in association* with one or more centres (although generally with only one). They were referred to by medical doctors and biologists as 'the psychologist [of this centre]', or 'the psychologist we work with'. I did not interview any mental health practitioner who, specialising in therapies and counselling for people suffering infertility, was working outside these two arrangements mentioned above.

This thesis is thus not based on interviews with patients. The decision not to interview users of reproductive technology in Argentina is based on the commitment to understanding the expert aspect of reproductive practice. Given the kinds of 'expert' knowledge that can be acquired, used and produced by those undergoing reproductive treatment, it is to a certain extent undeniable that the category of 'expert' does not fully demarcate, in the last instance, 'doctors' from 'patients'. However, I stick to the categorisation understanding that it describes a person recognised as possessing a type of specialised knowledge of technical and medical procedures that is the result of a particular kind of theoretical and practical training. Furthermore, although I occasionally draw on patients' concerns and stories so as to build up my arguments, those are always conveyed as part of the medical descriptions presented to me by the

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[100] I provide details of local connotations and other aspects to take into account in these translations in the chapter footnotes that follow the quotes.

interviewees. In this research I have thus not focused on how the medical field interacts with its patients, but on how it constructs certain normative realities by way of enacting its role as an agent of technological innovation and a representative of expertise.

Although given my overall epistemological approach I would problematise that ethics can be an 'aspect' of medicine itself transcendental to the practices that it aims to control from the outside, for example by way of bioethical committees and informed consent forms (for a relevant discussion see for example Greco, 2001; Michael and Rosengarten, 2012), I consented to use standard procedures for carrying out research in the social sciences. The research proposal was submitted to and approved by the Ethics Committee of the Department of Sociology at Goldsmiths, University of London. All the practitioners interviewed signed an informed consent form in which they were informed of the purposes of the research, and advised about the right to stop the interview at any point or to refuse answering particular questions. The delivery of the informed consent was an opportunity to invite participants to clarify remaining doubts regarding the purposes of the study.

As part of the research I also attended a number of *ateneos*, or weekly public symposia taking place at fertility clinics, at different centres. These encounters covered widely diverse topics, from PGD, to schemes for hormonal stimulation, to how to transfer embryos using a cannula, among many others. I also attended one 'Update Day' organised by a fertility centre, where a number of papers by staff from the clinic were presented, together with two public sessions at the National Congress where groups of fertility activists discussed with legislators and prominent doctors the demands and future outlook of ART legislation in Argentina[101], and a talk about infertility held for people coping with

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[101] Round table 'What should the Human Assisted Reproduction Act include (and what not), and why it shouldn't be restrictive', organised by patient's organisations Concebir, Nuestra Búsqueda and Sumate a Dar Vida and held at the House of Representatives (HCDN) on 20 November 2008; and a Public Meeting of the Social Action and Public Health Commission, held to discuss several bills related to infertility and reproductive medicine, HCDN, 29 September 2009.

it at the City of Buenos Aires's Legislature[102], also organised by a fertility activism group. These events were very different in character, involving varied actors (experts, lay groups, politicians, people affected by infertility, lawyers, infertility patients' families, etc.), and their occurrence during the time when I was carrying out fieldwork speaks of the high visibility of the field in contemporary Argentina. Although I have not relied heavily on these data in this thesis, taking part in these events was extremely helpful to identifying things like the issues at stake in the use of particular techniques or particular political debates, differences between psychological, medical and biological approaches to infertility, and to creating future lines of scholarly interest, to name a few.

Throughout the course of the fieldwork, I also collected other types of materials of which I make an extensive use during the thesis. These include informed consent forms used by fertility centres, medical, ethical and psychological guidelines, proposals for legislation, medical and psychology articles published in Argentina, institutional manuals, institutional brochures, pieces of advertisement, outcomes of institutional meetings (i.e. those held a SAMER), bureaucratic forms, etc[103]. Following my aligning with STS, in the course of this thesis I routinely refer to such items as 'sociotechnical devices'.

My use of such a diversity of materials is linked to the type of epistemologically informed approximation to the empirical discussed in the paragraphs above, and differs from traditional qualitative approaches in that such items are not treated as secondary data, but rather as agencies in their own right. Hence, these 'materials' figure throughout the thesis not as 'sources' of data, but as artefacts that mobilise and are mobilised, become *agenced* (Deleuze and Guattari, 2002; Phillips, 2006) with human practitioners, and whose operations in the clinical environment are ultimately traceable (Latour, 2005). In the following section, I discuss in depth the methodological use I make of such sociotechnical devices.

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[102] Public talk 'Infertility, a difficulty that grows. A medical-psychological approach', organised by patient group Nuestra Búsqueda, 21 October 2009.

[103] In the cases where these materials where not public, I have retrieved them with consent.

A ‘device-centred’ approach

In Chapter 3 I have discussed why a traditionally qualitative approach, with its emphasis on ‘interpretation’ and its overriding focus on symbolic action and the human at the expense of other forms of agency, was inappropriate for this research. In effect, I suggested that if normative domains that actualise immanently were sustained by human agency in the form of values and ideologies enactment, they were also made viable by apparatuses networked by devices of all sorts. In line with classic STS claims, such material networks should not be thought of as mere, mute, non/pre/post social domains but rather as *achievements* that need to be explained (Latour, 2005[104]), crucially enabled by gradually materialised formations.

With these ideas in mind, at the beginning of my fieldwork I was hoping that I could find relevant ‘moments’ during routine practice at fertility clinics where I would explore the human/nonhuman interface, specifically in relation to kinship and norms, my chief concerns at the time. In my mind, the devices I was more interested in were technological devices, concrete pieces of equipment like scans, microscopes, centrifuges, Petri dishes, pipettes, numerical counters, Makler chambers, etc. I knew of these devices second-hand, because I had read about their use in medical journals or in other technical descriptions of IVF procedures, or through previous interviews.

Despite the fact that I did visit two laboratories on a number of occasions, sat in waiting rooms and weekly *ateneos*, attended lectures and seminars, and carried out many interviews, I would not call this immersion an *ethnography* insofar as time limitations, among other things, prevented me from crossing that subtle yet critical line between being an insider and an outsider. Crucially, this line I did ‘not cross’ was defined by, among other things, not learning to work with the apparatuses that I wanted to study, but being restricted to observing others doing so (in a limited number of cases), and mostly engaging

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[104] I follow Latour in his assertion that ‘For the sociologists of associations, the rule is performance and what has to be explained, the troubling exceptions, are any type of stability over the long term and on a larger scale’ (Latour, 2005: 34).

in conversations with others about their engagement with the devices of their work. Hence, I did not learn to perform any technical intervention (besides practising a bit by looking through a microscope), although I did learn a great deal in my interviews about how *others* did these things on a daily basis.

So although my involvement with the persons and things of the clinic, and with the Argentinean reproductive field more broadly, did not imply becoming initiated in the handling of the devices whose interaction with humans I was interested in studying (and, in that sense, did not imply 'becoming native'), I had time to learn a bit about the relationships that my interviewees established with them. My access to this knowledge has been mainly through asking my interlocutors about their daily work. On a minority of occasions, I was able to witness such technical encounters as they happened 'in front of my eyes', and not as they were referred by the practitioners I interviewed, chiefly in the case of laboratory work[105]. As a result, the three analytical chapters of this thesis present empirical analyses of what Latour has termed *technical* (1999) ensembles, occasions of the human 'crossing over' to entities with different timing, space and properties; yet the way in which I have tracked down such interaction has been mainly through recourse to the discursivisation of such associations by the practitioners I interviewed.

Moreover, when I started my fieldwork I had in mind the human interface with technical devices that would more readily be described as medical and biological instrumentarium. However, as a result of the overall aims and interests of this thesis, in which I have been concerned with various forms of kinship enactment and the construction of moral characters in the clinic, I have ended up paying more attention to devices which, if displayed, mobilised and interactive in medical and biological settings, partake of other domains as well. These are legal dispositions, family and bureaucratic photographs, medical manuals and guidelines, pieces of advertisement, medical registers and forms, etc. In the context of this research, I have gradually begun to acknowledge that a device can be anything whose movement across a space is significant for some reason,

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[105] Below I give an account of my experience at the laboratory.

chiefly here because it is involved in the achievement and stabilisation of material normative domains[106], rather than restricting the interest in devices to technical instrumentarium.

So, in accordance with a perspective that refrains from adjudicating agency to a pre-given set of privileged entities, I have understood that many things *can become* relevant devices. Examples of these include pieces of data (datasets, forms, registers), pieces of equipment, pieces of legislation, etc. As is clear, these distinctions overlap, logically, since devices perform many functions and are never fixed identities. The important aspect, in the context of this research, is that I deal in my analyses with human/device interactions where I have detected that such interface is grounded in a relevant role acquired by devices. Hence, rather than sticking to my original idea of studying mainly technological pieces of equipment, I have expanded my conception of what a device is to explore the role of other types of instrumentarium, not necessarily medical, that have been identified as agential.

To be able to understand how such interaction between practitioners and their work devices takes place, I conducted many of my interviews by demonstrating an interest in the actual work that the practitioners carried out. This referred to all types of topics covered by my interviews, yet the sort of questions that I posed were (or so I thought) very straightforward, trying – following Mol's (2002) suggestions – to interact with/in the interview as if it were a *descriptional* device rather than a narrative device. This strategy helped me to dislocate the so-called 'in-depth' interview from its supposed role as an *intermediary* in the unearthing and expression of 'perceptions', 'attitudes' and 'ideologies', and to emphasise its capacities as a *mediatory* (Latour, 2005) mechanism so as to enact norms immanently, that is, to actually instantiate in the interview what is being done in the clinic.

Following the above, I have tried at all costs to avoid questions like 'What do you think of Y....?', 'How do you perceive X...?'[107] Such questions are usually

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[106] Some of these apparatuses are already themselves materialisations of normative prescriptions, particularly in the case of medical, psychological and ethical guidelines. Some others, like family photographs, are not straightforwardly so, yet I show how they become involved in the achievement of normative matrixes.

deployed in 'social' research to 'uncover' 'hidden' values and dispositions, with the aim of circumventing the usual restriction to the study of 'attitudes, motivations and knowledge of practitioners' that pervades much of the research carried out in the disciplinary domain of the sociology of health and related fields in my country. On the contrary, I emphasised, at every stage I could, my interest in the actual work that the practitioners do, and *how* they actually do it.

Hence during my interviews I was interested in producing them as a device for the description of very detailed practices and procedures rather than as mechanisms to display meanings and outlooks. As I have discussed in Chapter 3, meaning is of course never disentangled from practice; yet precisely because of this, exploring how the practitioners interact with their apparatuses is a better way of accessing 'meaning' than asking them what they think about what they do, a question that would have required a considerable effort of abstraction on their part.

As part of this interest in the circulation of devices, I also retrieved (always with consent in the cases where they were not publicly displayed) other elements from the clinic, mainly information brochures for patients and copies of medical papers from the *ateneos*. I also requested, and was offered in many cases, copies of the informed consent forms used in the clinic. Although I have used less the information brochures, medical papers and crafty diagrams retrieved from the clinics for my analyses, I focus extensively on the use of informed consent forms and other advertisement and informational material in Chapter 5.

I have also conducted extensive research on what is usually alluded to as 'secondary data'; yet my overall approach to the clinical ontologies that I study

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[107] This is not to say that I was at all times successful in trying this approach. My rather classical training as a sociologist and other dispositions betrayed me at several points during my fieldwork, and I incurred in some of the questions that I did not want to ask, oriented to 'unveil' concealed ideologies, for example:
'G: Because she is coming here to look for a child, she is not coming to look for a prototype of anything....
LA: *so this is more like an ideological thing*
G: sure
LA: *it's like you don't agree with what she is saying...*
G: no, that's not the point. *Personally, are you asking me personally?* No, personally I don't agree' (Gynaecologist, my emphasis)
The practitioner knowingly detects my emphasis and rightly asks 'are you asking me personally?' Yes, I was asking her about her *personal* ideology!

has meant that I did not use these data as supportive or contextualising material of an argument that is being made through recourse to other main sources of information. This is, I have not used statistical data, for example, to frame the question of biological variation as a matter of the appropriate measures needed to control the probability that two consanguines meet (as characteristically done by epidemiological studies, see for example Wang et al., 2007). Rather, I have understood that epidemiological statistics produce particular kinds of variation among people, which result from their deployment as regulating entities, and that they thus need to be understood as different from neutral devices that reduce the probability of consanguinity.

Thus, in studying devices like statistical data, pieces of legislation, medical registers, etc., I have paid attention to how the way in which they are performed enacts certain realities, for example when statistics are used to enact certain population risks and therefore certain population natures. At all stages, my attention to devices has focused on how they are *deployed* in particular settings, foregrounding the ways in which they entangle or *agence* with the activities of humans.

An experience in the laboratory

As part of my fieldwork and as an aid to interviewing, I also visited the laboratory on two occasions, at two different fertility clinics. Both experiences differed considerably in how they were conducted, owing in great deal to the different ways in which they were arranged. In one case, which happened towards the end of my fieldwork, when my contact network and my confidence in what I could do in the field had considerably strengthened, I was invited by the laboratory director to witness some of the processes. Hence, when I arrived on the arranged date, the staff at the laboratory knew in advance that I was coming, and one person had been designated to introduce me to the laboratory work. This was a fantastic opportunity to learn about the biologists' work, and to actually enjoy the field experience. During my time at this laboratory, the practitioners welcomed my interest in their practice despite our different professional adscription. More importantly, I was able to join laboratory practitioners in their interest in human fertilisation. During this visit, I was also shown the facilities and the second-in-charge at the laboratory explained every process that the staff carried out during the morning, including the reception of the ova, their analysis by a practitioner, the processing of the sperm (including centrifugation and 'swim up'[108]), the counting of sperm using a Makler chamber[109], the stabilisation of ova in an incubator, and the fertilisation in a Petri dish. I was able to ask questions (although not to record the encounter), and learnt a great deal about the procedures about which I had read so much in the past.

I accessed the other laboratory early in my fieldwork and in a sense 'forced my way in'. I arrived there one day with one of the doctors I had just interviewed at the clinic; she introduced me to the laboratory director, who was interested in my work but had not been given any time in advance to know or ask who I was. A few days later, I called the laboratory director by telephone and asked if I could visit his laboratory. After he accepted in a manner that was not reluctant but certainly cautious, I visited the laboratory on four occasions and without any formal arrangement[110], for short periods of time (thirty to forty-five minutes at the maximum). The reason for my short visits was that I never felt I could stay longer. There was no clear indication or suggestion of what I should do, except watch others do things that I did not understand, or could only follow vaguely. Although during my time at the laboratory I tried hard to unite in my mind the theoretical knowledge I had of IVF procedures with what I was watching, this is clearly a difficult task when the procedures are highly technical, one lacks background information and training, and there are no explanations

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[108] Sperm centrifugation is a technique used to separate sperm cells from the seminal plasma in which they lie, and increase the concentration of sperm cells. Once sperm has been spun, it is put into a tube and covered with a culture medium, through which sperm with the highest motility will 'swim up', thus self-selecting as those with the highest possibility of fertilizing an egg.

[109] The Makler Chamber is a bioengineering device used in fertility laboratories to count and analyse sperm.

[110] By which I mean that I did not arrange an appointment with the Director before going, but rather popped in when I was at the clinic interviewing other practitioners. I regret this arrangement might have been too informal and/or confusing for the people at the lab, and that it might have forestalled other possible ways of mutual engaging.

available. The first two or three times, I could not even make sense of things as simple as what the routine schedule was, who was in charge of the different responsibilities, and which instrumentarium was available.

At certain points in time, however, I was shown some of the procedures, specifically sperm processing including swim up (when what are deemed to be the 'most apt' sperm cells are separated from the rest of the sample), and ova 'peeling' (when cells from the granulosa are separated from the ova in preparation for ICSI). I was also able to observe through a big screen hanging on one of the walls in the laboratory 'real' and 'practice' ICSIs being performed[111]. Overall, thus, the visits were instructive despite the fact that my access to and presence in the laboratory where somehow less comfortable than in the experience recounted previously. I started to become familiar with the equipment and also the 'atmosphere' of a laboratory. This was defined by a combination of apparent 'relaxation' and good-humour with intense concentration on the part of the staff and much attention to detail, and where the tasks were highly routine and done with a lot of care. I could also ask specific questions at certain points, and I managed to create a line of approach to the director, whom I interviewed weeks later.

Moreover, the fact that I visited this laboratory on more than one occasion not only led to me being shown some of technical procedures, but also to my starting to understand how a technical culture or laboratory culture is reproduced and experienced. One of the things I was able to observe were some common jokes about life, gametes and embryos. For example, at one point a

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[111] There is an obvious ethical – rather than technical difference – between 'real' and 'practice' ICSIs. In the first case, the procedure is being carried out for good, by a very experienced practitioner, with the aim of producing a viable embryo. Because ova are very frequently scarce, every effort is made to ensure that each ICSI is successful from the technical point of view (that the sperm is injected at the right angle into the egg, that the sperm selected 'looks' good, etc.), the eventuality of fertilisation being favoured by these means but ultimately uncontrollable. 'Real' ICSI is for real; it has a patient/customer at its end expecting to count on the highest possible quantity of viable embryos. On the other hand, so-called 'practice' ICSI is performed by a practitioner in training, the 'raw materials' (sperm and eggs) obviously procured through patient treatment. I am unable to establish if patients had consented that some of their cells went into practice ICSI, yet 'real' and 'practice' ICSI was differently presented to me: in the first case, I was explained what was involved in an ICSI while this was happening in real time. In the second, I timidly enquired (because I noticed the lower level of skill of the practitioner), and was reluctantly answered that the ICSI being performed was 'for practice'.

parthenogenesis (the division of an egg without fertilisation, a form of asexual reproduction) occurred. I felt excited, witnessing a rare event, and could see how laboratory staff took the opportunity to joke about the 'Virgin Mary effect', in reference to the Catholic dogma according to which Mary conceives 'without fertilisation'.

The experience at the laboratory also let me witness how life in vitro is handled as both an object of derision *and* respect. For example, sperm, ova and embryos that 'don't look good' will be characterised with derogatory adjectives and even mocked by the staff, who call them 'ugly', 'small', 'dysmorphic', or 'with defective DNA'. Yet gametes and embryos are simultaneously the object of the utmost care, arguably because there are all sorts of legal and commercial commitments between the clinic and the patient, but also because, in a more general sense, the life of gametes and embryos needs to be fostered and preserved at all costs in the laboratory.

I have recounted above my two experiences in a fertility laboratory. Yet the use that I have made of these in the thesis has been more in the manner of background information, or even visual representations of IVF, than an as sources of primary data for my analyses. Although I have returned in my mind to these experiences to make sense of much of what my interviewees, especially biologists, biochemists and geneticists, said in our talks, I have scarcely drawn on this material to build up the core of my arguments in this thesis. The reasons for this lie in the fact that the time I spent at the two laboratories was very limited, thus making it difficult for me to fully grasp relevant aspects of the interaction between practitioners and laboratory devices. I have therefore deferred the use of this material as a source of evidence for the claims made in the empirical chapters while, as said above, the experiences at the laboratory have been crucial in providing me with concrete visualisations of some of the technical routines of the laboratory.

Recruiting, connecting, being introduced

I have spoken above about pertinent aspects of my experience at two fertility laboratories, yet as I have already indicated the core of the data analysed in the thesis comes from interviews I carried out with fertility practitioners. In the following, I recount my experience of approaching the Argentine reproductive field. My immersion in the Buenos Aires scene was facilitated by the knowledge I already had about it, gained mostly while researching an MA dissertation on women coping with infertility. By the time I started my PhD studies, I had already collected extensive background information on centres, practitioners, legislation, ethical debates, etc., and I continued to do so throughout my doctoral studies. Because of this previous research, I was already in contact with some key people, some of whom I contacted before my two visits to Argentina. Despite this previous knowledge, however, most of the people I met and interviewed were new contacts I established once there. Due to the fact that I knew I would be staying for a short period of time without possibilities of extension, I laboured each day to make contacts with practitioners and make appointments for meetings. I had a very busy and rather stressful agenda, particularly towards the end where my efforts had started to flourish.

In terms of the strategies I deployed to contact the interviewees, I used a classic 'snowball' technique[112], albeit with certain distinctions. I combined snowball recruiting with some selection on my part. This means that although people whom I had already interviewed were the main sources of recommendations regarding whom else to interview, I was also definitely attentive towards names, the recurrence with which they were mentioned by other practitioners, and their renown in the field. For example, I tried to identify what are usually referred to in the literature as 'key informants', people whom I could anticipate would have well-established 'insider' knowledge of the field,

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[112] Snowball sampling is a technique whereby people who have been already interviewed or surveyed refer to, recommend or recruit themselves, other potential study subjects who also meet the eligibility criteria. It has been typically characterised as a technique which does not enable the unbiased collection of information, yet one which is particularly helpful to reach difficult to access publics.

either because they had spent a long time in it, or because they were apparently 'recognised' for their technical skills and/or their role in developing reproductive medicine in Argentina. I also tried to identify and interview people who for some reason others kept referring to, even if they were not particularly known outside the field, or especially well-known inside it. Although being frequently referred to and not being particularly eminent in the field may seem an oxymoron, it realistically describes those middle-career professionals who compose the mainstay of the field. These practitioners, who were not so inscribed in the dynamics of the media to be the most recognisable and the least practically engaged of them all, but who carry out their professional job daily and dutifully in tens of centres in Buenos Aires, are the ones who – importantly for the kinds of analyses carried out here – meet regularly to discuss and agree ethical guidelines, protocols, bills, institutional declarations, etc. These are the people who comprise the majority of the interviewees.

As the above makes clear, this combination of snowball sampling and selective contacting affected the composition of the interviewees group. The latter is mostly composed of middle-career professionals rather than of recently graduated practitioners. (There are only two comparatively young practitioners in their thirties, still carrying out part of their training, whilst most of the others tend to be in their forties and fifties, some of the most renowned being in their sixties and seventies.) Although of course not all the group of interviewees is composed of such well known figures, I did manage to get hold of some interviewees that had been in the field for a long time and/or enjoyed renown and peer recognition. These interviews were crucial in giving me a very complete idea about how the reproductive field developed in Argentina, in particular in relation to the origins of gamete donation.

Furthermore, although I deliberately sought to contact some of the practitioners most often mentioned by peers or the most renowned participants of the field, I explicitly avoided contacting those who repeatedly appear in the media and are the most visible face of the field, at least to a wider public. As in many other countries in the world, procreative medicine continues to draw a lot of public attention in Argentina, and certain figures are highly visible in the local arena. My impression at the time, as well as today, is that such people already had a standardised discourse about Argentine reproductive medicine, one that would be hard to break down and one which I could follow, if interested, through their appearances in the media. Moreover, trying to contact the most media-oriented practitioners would be extremely time-consuming in a situation where I had only a limited amount of time, and also probably highly frustrating (with the outcome of a short interview, or scarcely new information). My extensive pre- and post-fieldwork search of background information could well supplement not having interviewed these doctors.

With regard to how I presented myself in this local scenario, I made extensive use of my credentials as an Argentinean student carrying out a research project 'at the University of London' or simply 'in London'. I knew these would have an effect on recruitment, hopefully opening up doors that had remained closed to others who had previously tried to carry out similar projects. Needless to say, a certain sense of inadequacy arises from these uses, especially as it ultimately implies the reproduction of pervasive North/South, Centre/Periphery dichotomies on account of which the South and the Periphery get recurrently represented as 'lacking in' (knowledge, expertise, resources, professionalization), while the North/Centre appear to be full of them. Although I had already made – again, somehow ambivalently – extensive use of such repertoires when trying to secure funding to come and study in the UK, by arguing to global agencies in terms of the need to carry out this piece of research, I found that making use of them again was somehow incongruous with an alternative catalogue of reasons on which I also drew with certain frequency: the claim that Argentinean reproductive 'science' and 'knowledge' were showing a high degree of dynamism and eminence – at least in the regional context – and that, therefore, more attention needed to be drawn to their practices, and to the 'important role' they performed in making the country 'progress'.

The first strategy proved to be quite successful, if only because most of the practitioners I interviewed partook in the view that peripheral and southern regions like Argentina were still learning a lot in terms of science and technology development from the North and the Centre, and anticipated that these same processes took place in my own discipline. Moreover, most of the people I talked to had spent one or more training stages at 'world' – meaning 'North' or 'Centre' – training centres, most notably at 'Norfolk' (Eastern Virginia Medical School at Norfolk, Virginia, US[113]). Many experts tended to equate their own experiences of training overseas with mine, which facilitated a certain initial rapport in terms of similar professional and vital events. This rapport was sometimes expressed in rather patronising formulations, like when one doctor said that 'although it may not be essential to have an overseas experience, it does open your head, *as is happening to you*' (Gynaecologist 9). In effect, having had one or more formative experiences in the North (and not just overseas), appeared to be a mark of professionalization, and one on which I could establish initial affinity with my interviewees-to-be, even if the differences between our respective fields, and between the types of immersion into those global settings (time extension, funding, following invitation or not, in representation of an institution or not) were usually a world apart.

The second strategy, that of celebrating the development of the Argentinean Science & Technology sector, where most of my interviewees would locate themselves irrespective of also ascribing to a medical affiliation, also proved to be efficient in gaining me access to the field. For example, at one early stage in the three month part of my fieldwork, I had the opportunity to participate in a meeting with medical staff at a fertility centre. This occasion was unplanned, and I was unprepared for it. I had been interviewing during the morning and had been told by one of my frequent interlocutors (a doctor who was a partner at the clinic and who seemed keen on showing me the centre's work) that a meeting would take place at lunch with a lawyer who would come and talk about 'legislation'.

I had been looking forward to the meeting over the previous couple of days; I knew it would be an opportunity to meet more staff and take part in what would become for me routine participation in the *ateneos*, gatherings of staff

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[113] A renowned Argentinean doctor, Aníbal Acosta, taught and practised at the EVMS for an extended period of his life. He appears to have trained tens of Argentinean fertility practitioners, now practicing at different clinics in the country. Now retired, he lives in Buenos Aires but I neither contacted nor tried to interview him, as I learnt about him fairly late in my fieldwork.

taking place one day per week at different centres. In these *ateneos* different topics were discussed, sometimes in the form of Power Point slides presented by guests, sometimes in a more informal format, over a coffee. Luckily for me, on this particular occasion the lawyer who was meant to give a presentation did not show up, and I was invited instead to cover the extra time by explaining a bit about my purposes and background. I described my previous research with women affected with infertility, and took some time to highlight the regional significance of the Argentine fertility field, its considerable expansion in recent years, the eminence of its professionals, and the concomitant need to study its main trends. I also linked such expansion and the regional recognition of the field, to recent political interventions by the current government[114] oriented to supporting scientific and technological activity. As a response, one of the doctors present took the cue and added that, 'without going further, *you must know* that the present government has elevated the rank of the Science and Technology Secretary to that of a Ministry' (Gynaecologist 4), thus supporting my argument.

Furthermore, being younger than the vast majority of my interviewees, my age and certain role-playing (on which I reflect in a following section) also helped me to make an entrance into the field. In particular, I benefited from occupying – in a manner that was always to a certain degree uncomfortable – the role of 'young scholar from the University of London who wants to learn about what we do' and 'is interested in our work', as the most frequent descriptions through which I was introduced from doctor to doctor. But what to make of such presentations, which were to a certain extent not controllable by me, and to a certain extent – again, ambivalently – silently accepted by me? Certainly, although I did practically benefit from these temporal and local inscriptions, I did

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[114] Argentina's Science & Technology sector has obviously been tied to the frequent political and economic turmoil that has affected the country, with a 'brain drain' as a clear trend traversing the history of its development until recently, when this has started to be reversed. De la Rúa's presidency (in)famously cut 13% of nationally funded scientists' salaries in 2001, among one of the biggest cuts in history to civil servants in Argentina. Exceptions to this trend have been President Frondizi's government during 1958-1962, which encouraged scientific research as a necessary input to industrial development, and the last two governments (Néstor Kirchner, 2003-2007, and Cristina Fernández de Kirchner, 2007-2011), which have strongly supported scientific activities, chiefly by elevating the rank of the Science and Technology Secretary to that of Ministry, and incrementing the budget for scientific activities, a raise that in 2008 reached 0,52% of the GDP (MINCyT, 2010).

not seek to be described as such, and to occupy the position of someone who wants to be and enjoys being taught. In particular, this subjectivisation faced me with the gender dynamics entailed in the fact that most of the practitioners I spoke to were men, older than me, credited experts in their fields.

Gendered domains

Inescapably, gender dynamics pervaded the encounters I had and the relationships I built in the field. They shaped the subjective space I inhabited during my fieldwork, a space which was delimited and already determined in a number of ways. I was there to learn what 'they', expert male doctors, had to teach to a young female Sociology graduate student. What I enquired about and how I negotiated the time and content of the interview were already constrained by these initial demands, as this was precisely how I think many of the interviewees understood my presence in the clinic. Although all the interviews I held took place in a friendly and respectful atmosphere besides being instructive or not, I did feel at times the need to negotiate my place in them, especially when I had to purposefully steer towards certain topics or force my own agenda in a discourse which had a visible plan different than mine. This means that I frequently had to negotiate a position between being someone who needs to be educated on a particular topic, and someone who already had a substantial knowledge of the topics of discussion, as was the case. I found that it was frequently more difficult to sustain this subjective intermediate space with male doctors than with female doctors.

Experientially, gender dynamics thus permeated the spaces and encounters I held during my fieldwork, although I am unsure this 'experience' would fall entirely into one form of the variously repeated male/female power asymmetry with regard to expertise and knowledge. For example, what I felt was a fairly equal relationship developed with one male doctor at one of the fertility centres I visited more often. This doctor would frequently sit down with me for a few minutes to discuss specific doubts I had; we would exchange information (sometimes he gave me a relevant newspaper clipping or a piece of research or a summary of the basic techniques of IVF; others I would tell him about IVF in the UK, or how research is conducted in this country), or talk about how my research was doing, etc.

Thus, the relationships I built during the field experience were certainly gendered, but in complex ways. With male doctors, for example, I tended to develop more technical relationships based on knowledge exchange and, whenever possible, shared interest and fascination with 'science', and I was happy with myself when, on these occasions, I could state the degree of my technical knowledge and outgrow the role of that one who needs to be taught 'the basics'[115]. Sometimes, however, I felt the arduous demands that issues related to gender enactment in an expert context posed on my research. If, as said above, relatively symmetric relationships developed with some male practitioners, other times this was not the case. One example of this was a young male doctor who received me with two of his female colleagues, who were in fact his employees, since he was the proud partner in a recently established and quite fashionable fertility centre. He would interrupt me and correct me frequently, and there were tangible issues of agenda-setting during the interview, in which he appeared as the main speaker, I tried to pose questions, and the two other female doctors were silent listeners to this male voice talking in a monologue. At best there was a struggle to construct a dialogue.

A third anecdote illustrates how gender dynamics saturated the spaces of the clinic and the relationships built in and through it. I contacted a middle-aged female gynaecologist, the only female partner of a large and renowned clinic. She was a stylish and attractive woman at the height of her career, who had already performed in some institutional roles (presiding Commissions or Associations) besides working at the centre where I visited her. During our first telephone talk, which happened at quite an early stage of my fieldwork, she was very responsive and offered to introduce me to her colleagues; 'I know them all', she said on the telephone. This of course made me very happy and relieved that I had met

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[115] In general, this outgrowing and negotiation of a more symmetric relationship tended to happen more frequently with biologists than with medical doctors, to whom I felt I was sometimes able to pose questions that interested them or about topics which they had never thought.

someone who would ‘get me in’, show me part of the field from the inside and who, most importantly, was seemingly doing this for no other reason than the willingness to help in my research (and maybe also give proof, to herself, to me or to her colleagues, of her ‘insiderness’).

After a couple of busy weeks we managed to meet at her centre. I interviewed her, and now she took for granted that she would be introducing me to some of her colleagues and showing me around the clinic. We were both very busy (my phone calling and emailing had started to deliver appointments), so another week or so passed before we could meet again alone. In the meantime, I happened to be referred to one of her partners and co-founder of her centre by a former interviewee. It was a coincidence, as there are around three hundred reproductive medical practitioners in Buenos Aires. So to avoid any conflicts I emailed her saying that I will also be interviewing this other person. She replied cordially.

One day, before our second meeting took place, she arrived at the centre while I was having an informal chat with her business partner. It was a strange moment: she said ‘hello’, but she was not effusive like before. I felt a wave of disappointment emanating from her, so much that a few minutes later I literally ran down the stairs to her and said ‘Hi, here I am, you wanted to show me around’. Although I will never be able to corroborate this, I suspect that she felt in some way betrayed, as if I had left her protective ‘wing’ too soon so as to be independent in the clinic and talk to other people. From that moment on our relationship cooled down. Although she was still kind, the ‘spark’ in our relationship had gone out. She still showed me the centre and put me in contact with some people, but she did so in a way that I experienced as mechanical and as lacking in interest. There was something definitely lost when I began to be autonomous and establish my own way of circulating in the clinic, a loss that she punished powerfully, and which I attribute to her feeling that she could no longer count on me as a sort of ‘gender ally’ in the clinic. Being the only female doctor, she may have felt that I was engaging more with her male partners, and this may have upset her.

Above I have discussed my fieldwork experience making sense of it in the light of my previous epistemological commitments, thus pointing to the ways in which I negotiated the space of the clinic and the laboratory by adjusting to the particular conditions of Argentine fertility medicine. This negotiation included, I have suggested, expanding my initial understanding of devices as pieces of technical equipment, to one where devices can be many things, including things to produce administrative, legal, ethical or psychological outputs. I discuss my exploration of clinical devices, and the empirical results obtained from taking this approach, in the next three chapters.

Chapter 5: 'We don't talk about payment'. The normative exchange of gametes and the non-economy of moral characters

In this chapter I explore the constitution of what I will call 'the normative exchange of gametes', an expression that I use to describe the activities of humans and devices engaged in the performation of moral kinds of relationships and characters out of the circulation and manipulation of human gametes. By using the term 'normative exchange', I refer to the progressive achievement of a regime of exchange where norms inhere in the way the deeds and characters entangled in exchange are constituted. Specifically, I use the term 'normative exchange' to signal how medical practices are progressively rendered *moral* practices through sociotechnical activity. Such rendering is both anchored in the production of moral types of exchanging characters, and in the recreation of morals as the relevant non-economic[116] environment in which exchanges should take place.

I begin the chapter by accounting for the different framings (Callon, 1997) in which gamete exchanges can be made to occur, and by giving examples of how 'gamete donation' is variably acknowledged as either a market or moral type of exchange in Argentina's public domain. I then go on to explain my particular methodological assumptions with regard to how to conceive of the performation of market and/or non-market exchanges. On the basis of the above I explore one form of investment (Callon, 2007) that I argue is central to the normative exchange of gametes. This is the enactment of a moral type of character whose configuration helps to frame gamete exchanges as *moral types* of exchange. The constitution of moral characters takes three privileged forms: the altruistic, the voluntary, and the anonymous subject. Examining informed consent (IC) as an *agencement* between persons and statements, I argue that the IC

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[116] In this chapter I take for granted what Callon (2007) alludes to as common sense's tendency to identify 'the market economy' with 'the economy'. Basing my argument on this, I speak of moral and non economic environments to mark off how morality is enacted as exterior to market exchanges, although I acknowledge that a point could be made regarding the existence of non (market) and moral *economies*.

is a privileged investment that frames all further operations engaged in the performation of the moral character of donors and recipients.

As part of the above, I also look at the use of the fee *qua* fee, that is, as a form of money exchange that does not constitute a payment understood as a disbursement that equates the market value of a commodity in a market economy. Rather, the fee *qua* fee will be here examined as an investment that prevents the occurrence of a payment as defined above, and which is thus concerned with facilitating the neat demarcation between market and non-market or moral exchanges.

By doing the above, the overall aim of the chapter is to describe the processes of boundary-creation that attempt at both purifying medical and biological practice from market contaminations, and re-entangling it with morals. As part of this study, I describe the constitution of moral subjects and the enactment of moral acts in the normative exchange of gametes.

'Squaring life with money': contested visions

'Squaring life with money was never, in any society, a simple affair', claims Marion Fourcade (2009: 291). In effect, the issue of how to value different forms of human existence, or compensate their alienation or loss, can be said to involve – at least in the West – considerable difficulty. This complexity stems in part from the need to make life measurable and comparable to 'pecuniary means', amid widespread moral and normative frames that in the West have usually characterised 'life' as that which is invaluable or inestimable by definition. As Donna Dickenson has argued, there seems to be a principled discomfort with the 'commodification' of body parts (i.e. their entering in market exchanges), a discomfort that in Western modern philosophies is rooted in the Kantian apprehension of the selling of human parts as radically undermining 'our very humanity' (2007: 5). The gravitation of 'moral systems' relying on the idea that such humanity is endowed with a dignity which is unique to it has frequently been invoked as the reason why attempts at inserting life into circuits of capitalist commerce fail or encounter resistance (Rabinow, 1999).

The case of tissue, blood, organ and gamete exchange, among other body parts, is at the core of these difficulties. Diverse legal national traditions have conceptualised differently the relationship of money with life (Dickenson, 2007; Titmuss, 1997; Rabinow, 1999)[117], and some societies may be more willing than others to rely on expert forms of valuation to quantify how much life is worth (Fourcade, 2009). However, no culture in the West seems to be excluded from the (purportedly moral) uneasiness involved in attaching value, body parts and money in one single bundle[118].

Argentina is of course no exception to this. Debates and expressions of interest in lay discourse tackle exactly this point when discussing the increasing demand for gametes in assisted reproduction procedures. A 2005 article in the widely read newspaper *Clarín*[119], for example, is entitled 'Fertile market'. There, the story of two 'donors' is recounted from the point of view of their 'motivations' to donate, and note is clearly made of how much they were "given" for their actions. Yet the carefully chosen verb does not dilute the broader unresolved questions implied in such transactions. Thus in a more analytical tone, the article's author clarifies: 'the concept of "reward" creates misunderstandings. For some it implies buying and selling. For others, a compensation for the injections, the scans and the punctures, the time and the potential discomfort'. Here are contained, in a nutshell, the kinds of issues entailed in the exchange of gametes for monetary amounts that takes place in Argentina: what does in effect the money exchanged compensate for, how

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[117] Dickenson's analysis distinguishes considerable variations in the ways different advanced liberal democracies conceptualise property and property transfer in regards to tissues and body parts. Specifically in respect to gamete exchange, Dickenson distinguishes between the US exhaustively commodified system, where gametes are traded according to a price they acquire as supply and demand interact, and systems based on principles of altruism and gift, as the ones prevailing in countries like the UK and France. Titmuss's analysis centres on the comparison between the UK and the US in relation to blood donation, also opposing their commodified and altruistic nature. As will become clear below, these kinds of analyses are inattentive towards how exclusionary oppositions like 'market' and 'gift' are produced through sociotechnical arrangements, taking for granted their status as something already constituted.

[118] This is arguably the case also in the US, where the extensively commodified character of gametes is nevertheless frequently sustained by a tight rhetoric of altruism (see for example Tober, 2001).

[119] Farber, M. (2005, August 18). Fertile Market [Electronic version]. *Clarín*. Retrieved 12 October, 2011, from Clarín website: http://edant.clarin.com/diario/2005/08/18/conexiones/t-1035819.htm.

exactly are the amounts involved arrived at, and how are we to conceive of the status of such amounts (as payments, as fees, as rewards, etc.) and of the persons entangled in the exchange.

The newspaper article above is one example among many of the debates and ambivalences held in Argentina's public arena towards the exchange of ova and sperm for money[120]. It maps out well not the straightforward characterisation of the exchange of life fragments for pecuniary means as a commodification of the gametes, but the normative indecision regarding the status attributable to such an operation. Or, to put it in a vocabulary closer to the one used in this chapter, the newspaper article is a good example of the ambivalence regarding what is the proper framing (Callon, 1997) for gamete 'donations'.

In effect, if for one of the donors whose story is told 'it is shocking to put it like this, but they are actually *buying* your eggs' (my emphasis), for Arribere, a lawyer specialised in bioethics and member of the Bioethics Committee in one well known fertility centre, 'Nor do I like the term "buying and selling"[121] of ova, because here in Argentina there is no buying and selling, buying and selling is what is done in the US' (emphasis omitted). The article shows, thus, that it is not that gamete exchanges *are* one thing or the other, but that they can be variably framed as economic or non-economic, gifts or commodities, among other possibilities, and hence that there is no *inherent* way in which to understand what gamete exchanges for money entail, even if their 'form' (the surrendering of gametes followed by a reception of a monetary amount) is always the same. It is

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[120] Another example, this time from the UK, of the way in which this debate is usually set was the discussion organised by the Centre for the Study of Incentives in Health, held October 11, 2010 at the Wellcome Trust, London. The event was entitled 'Paying for blood and organs is not so bad', and consisted of two 'teams', each composed of two recognised academics 'speaking for' and 'speaking against' the motion, aiming to recruit adherents among the audience. The audience voted 50% against and 33% in favour of paying for blood and organs at the beginning of the debate, but was realigned as 44% against and 44% in favour by the end, marking a defeat of the 'speaking against' team.

[121] The term in Spanish is 'compraventa' and it designates in one single world the act of buying and selling. It is composed of two words connoting each of these two acts 'compra' (purchase) and 'venta' (sale). The Royal Spanish Academy (RAE) defines in legal terms that a *compraventa* contract is 'The one that has as object the handing in of a given thing in exchange of a *true* [cierto] price'. Contrato de compraventa. (2011). *RAE Dictionary*. Retrieved October 14, 2011 from http://lema.rae.es/drae/?val=contrato. There is not a single world available as translation in English.

clear, then, that there exists a degree of malleability for the act to mean and be acknowledged as one specific type of exchange. In this chapter I explore the normative dynamics at play in the enactment of gamete exchanges as a very particular type of exchange, namely, a moral one.

In the context of such irresolution regarding the meaning/framing of the exchange of gametes for monetary amounts, a number of possibilities are open. As the article cited above recounts, an interpretation of such exchanges may settle so that they start to be more widely understood as pure *compraventas*, further instances of the coproduction of a market economy. This possibility arises even if the conditions that grant the exchanges per se do not fulfil completely the specifications under which a process of (market) *economization* (Muniesa, Millo and Callon, 2007) takes place. That is, even if the exchange of gametes for money is not the result of the establishment of valuation networks (…) pricing and (...) the construction of circuits of commerce that render things economically commensurable and exchangeable' (2007: 3) (for example by the failure to establish *prices* of gametes as the result of an interaction between supply and demand), such moral interpretations regarding the potentially market-like quality of these exchanges will continue to proliferate.

Other prospects are also possible, of course. One of the most prominent is the possibility that the exchange of gametes for monetary amounts is performated as something else than a market deal. This option was already clearly considered by the voice of the lawyer in the newspaper article above. And the lawyer added: 'I prefer to talk about *dación*[122]. The woman gives her eggs. And not as a payment[123] but as an indemnification she is paid[124] $1000'. That is a clear

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[122] There is no translation in English for this word in Spanish so I have left it in the original, where it means the 'act and effect of giving' and is frequently used to connote an act of exchange where there is no payment, understood as a monetary amount agreed under the parameters of a market economy (Dación. (2011). *RAE Dictionary*. Retrieved October 14, 2011 from http://lema.rae.es/drae/?val=dacion).

[123] I have opted to translate the word in Spanish 'contraprestación' as 'payment' to emphasise the contrast the speaker wants to make. The RAE defines 'contraprestación' as 'Provision that one of the contracting parties owes by reason of what they have received or are to receive from the other' (Contraprestación. (2011). *RAE Dictionary*. Retrieved October 14, 2011 from http://lema.rae.es/drae/?val=contraprestacion).

statement of the status attributed to one of the contested elements (the monetary amount) in the exchange: '*not as a* payment but as an indemnification' (my emphasis). Together with its reverse, also quoted above ('they are actually *buying* your eggs'), it marks the extreme boundaries of a whole field of elucidation regarding the character of the exchange. In the following paragraphs I explain how is it possible that such field of elucidation is actually turned into a field of configuration.

Do devices produce subjects? On producing selves, relations and environments

There is a fundamental difference between the way in which the human actors (the lawyer, the donor) quoted in the newspaper article approach the nature of the exchange, and the way in which this 'nature' will be apprehended here. For the lawyer and the donor, the exchange is distinctly either a '*dación' or* a 'sale', yet equally for both it is also a given entity, something on which precedence can be claimed as it exists before it is named as one thing or the other. One could choose one way or the other to characterise the exchange, and value disputes would certainly ensue. But for each of these 'actors' such statuses are already granted in the exchange. However, I do not find this very satisfactory, insofar as it does not explain how such qualities were acquired.

There is also another problem with such a perspective. It assumes that the relevant actors are already constituted *before* they act, and before they entangle with a whole array of sociotechnical devices that facilitates the actual configuration of certain institutionalised agencies (donor, recipient) and certain acts (donations, receptions), while giving certain specifications to the acts (altruistic, anonymous, voluntary, or on the contrary interested, constrained, etc.). The newspaper article speaks in fact of *motives* for action: 'the donation is distorted if the motive is economic', claims a doctor who advocates unpaid exchanges. But motives are only part of the issue. Individuals may have real

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[124] The use of the verb 'to pay' right after denegation of the monetary exchange as *payment* is a proof of the difficulties entailed in the multiple connotations implied in the terms concerned with describing market/non-market exchanges.

motives, yet once they enter into sociotechnical relations, facilitated by material and semantic arrangements, a whole new 'individualization of the agency' (Callon, 2007: 346) may occur (i.e., a whole new performation of an identity)[125].

I will thus not follow this understanding here. Rather, siding with the pragmatic and anti-substantivistic tradition that infuses concepts like performativity, performation and enactment on which this thesis relies to make most of its claims, in what follows I will show that the exclusionary oppositions I have been naming ('rewards' vs. 'payments'; 'sales' vs. 'donations'; 'altruistic' vs. 'interested'; 'economic' vs. 'noneconomic', etc.) are made to exist and granted different ontological statuses[126] by the very material operations enabled by the technical entwining of humans and nonhumans.

I take inspiration from the work of scholars in the field of science and technology studies and performative economics who have conducted research into the processes of *economization* (Muniesa, Milo and Callon, 2007). They have shown that the 'economic' is never a substantive quality in relation to which the analyst's criterion is merely limited to deciding upon its assignment (i.e. something is, or is not, *economic*). It is, rather, a property which is progressively *rendered* in actors, exchanges and objects of trade, through a whole set of sociotechnical operations that Callon (2007) has called 'performation'.

For example, reviewing a number of lessons learnt from previous chapters in his 'What does it mean to say that economics is performative?', Callon locates the 'performation of a self-interested agency' (2007: 346) in the implicit agreement of professionals, experts, institutions, scientific disciplines and public national and international bodies to enact this 'anthropological model'. He

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[125] Such a view further relates to the question of truth and discourse. As I will discuss below, following Callon (2007), rhetoric is a capacity of language less concerned with truth (the validity or truthfulness of a statement in regards to the world it describes), than with the effect language may have on the world. 'Motivations' to sell or donate one's gametes may be true from the point of view of the person who expresses them (i.e. they may accurately describe a state of mind, for example), yet such emphasis on truthfulness fails to acknowledge how a person might be agenced through sociotechnical devices in order to act altruistically, interestedly, etc. Underlining validity as opposed to effectiveness fails to account thus for the effects that sociotechnical devices, including discursive statements, have upon the real. I discuss this in more depth below.

[126] As Butler says, 'performativity starts to describe a set of processes that produce ontological effects, that is, that work to bring into being certain kinds of realities' (2010: 147).

also considers the possibility, raised in a 2003 article by MacKenzie and Millo, that 'selfless' behaviour is the result of the entanglement of sociotechnical networks with 'culture and moral communities' (rather than something performated in sociotechnical material networks, like the *homo economicus* is). But he ultimately does not agree. For Callon, 'moral behaviours are (...) framed and arranged in the same way as selfish ones'; self-interested and altruistic agency are '*symmetrically*' the result of 'material, textual, procedural, and other investments'. In fact, for Callon, 'When *homo economicus* becomes altruistic "again", he does not rediscover his true nature; he changes his equipment' (2007: 347).

Such is, more or less, the 'anthropological program' (Callon, 2007: 347) that I aim to show is in operation here. This analysis does not imply recommending, normatively, why donations need to be paid or unpaid, rewarded or unrewarded. Neither does it entail stating why some people may have the *psychological* motivation to help others altruistically, while others would do it 'only for the money'. These exclusions are, as I have suggested above, rather the result of material, textual, institutional, legal (etc.) investments that frame selves, relations and environments in a certain way. And my aim is to show how such investments are constitutively involved in the configuration of a moral subject, acting according to moral arrangements.

In fact, the very reproduction of a boundary between economics and morals, the concomitant, explicitly visible entanglement of reproductive medicine with the latter, and the rejection of the former as a valid or relevant environment, are all part of the anthropological program that I will examine here. A normative context is thus realised in such arrangements, one where economics is disavowed as the proper framing for such exchanges to happen, while a moral one is reinforced. Thus, what in the *Clarín* article quoted above appeared as two already constituted and clearly distinguished environments (economics and morals) in which the exchange of gametes for money could be interpreted as belonging to one realm or the other according to a set of external values, will be understood here as nothing more than the product of normative sociotechnical arrangements whereby 'values' are immanently realised, and of which the newspaper article is itself a constitutive part.

Enacting the moral character: rhetoric, pragmatics, and performation

As anticipated above, in the pragmatic approach that guides this thesis to say that economic arrangements are disavowed while moral ones are foregrounded implies bracketing any anthropocentric assumptions regarding people's characters or motivations to exchange a certain part of their bodies for a monetary amount[127]. As I will show below, pecuniary payments made as fees are part of the strategic *disentanglement* of medicine from economics, rather than its attachment. Yet the above may seem counterintuitive given the tendency to identify the exchange of monetary payments with the functioning of a market economy[128], and the precedent set by countries like the US where the exchange of gametes works in fact as a market where eggs and sperm acquire a 'price' as a function of supply and demand, among other determinants.

It would equally not work to readily assume that the money exchanged is so exchanged only as a compensation for a generous and disinterested gesture (that is, not as the payment of a price), as if retribution acquired a monetary form only accidentally once it does not 'intrinsically' belong to a market exchange. Such attribution, as the one above, presupposes that the (altruistic, commodified) character of the exchange is decided or given anterior to its occurrence, independently of the particular framing that produces it as something of a particular quality.

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[127] Scholars in the social studies of organ donation have in effect relied on models organised upon the role of values and motivations, to explain why donations are alternatively market- or altruistic-like. For example, Steiner affirms that 'values provide an extensive set of motives for action, including economic actions and actions having an impact on economic events; and they are also instrumental in providing subjective meaning to actors' (2010: 245). Such models have also been frequent within the IVF field. A 2005 study published in SAMER's journal is entitled, for example, 'Assessment of motivations to donate in a group of paid donors in an egg donation programme' (Barón, Koreck and Lancuba, 2006).

[128] Assumptions regarding the commodified character of organ and gamete donation are ubiquitous in social studies of 'biomarkets' and the exchange of body parts. For example, Tober (2001) says that 'The term 'donor' (…) is really not accurate in reference to those who are paid for their contributions, because their semen is not donated – *it is sold*' (Tober, 2001: 144). She later adds that '…the perceived value and trust in 'altruistically donated' sperm is misplaced. *In semen transactions, true altruism cannot exist*' (2001: 158). On her part, Dickenson affirms that 'Although the language of gift is often used *to mask what is really going on*….' (2007: 45) (both quotes my emphasis).

By contrast with the above points of view, I propose here that the role played by the monetary amounts, and the relations and characters they enable, need to be understood as part of the performations that take place through sociotechnical investments. This means a distancing from any analysis that might consider that if the economy is denied as the correct environment it is because only donors who declare themselves to be donating only for other than monetary reasons are eligible to enter into the donation apparatus. It equally enforces an analysis that does not rely on the presumption that calculative and interested people are excluded by principle from the opportunity to donate. This is, it demands a description of how people are agenced as *homo economicus* or *altruistic*, made to act in particular ways that are performatively constituted through the exchanges. I undertake such a description below.

As Callon (2007) has pinpointed recounting the history of the concept of performativity, traditional ancient Greek rhetoric was conceptualised as a capacity of language to act upon the world it takes as its object rather than holding a merely representational relationship with the object it describes: 'Rhetoric (…) implies relationships of entanglement between propositions and their referents; it acts on the ontology of the entities to which it refers' (2007: 316)[129]. But what kinds of entanglement with a world, and what kinds of acts between statements and entities are made possible by rhetoric? This is only understandable, says Callon, through a consideration of pragmatics as that dimension of the study of language that focuses on how the latter is actually used, on the 'relation between signs and their *use context*' (2007: 317, my emphasis).

Pragmatics helps to understand why rhetoric is not to be comprehended as a semi-magical quality of linguistic utterances capable of making a certain world appear only by being articulated. That is, not all statements have the illocutionary force that Austin (1962) identified some verbs as possessing.

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[129] As Callon remarks, rhetoric as defined by classic Greek philosophy is different from logic, insofar as the latter assesses the adjustment of statements to the entities they describe, 'impl[ying] the existence of an outside world, populated by entities that are distinct and cut off from the propositions referring to them (...) The ontology of the world of logic is set and independent of discourses describing it' (2007: 316).

Although, as Callon (2007) points out, Austin ended up considering that all utterances are illocutionary to a certain extent (all linguistic statements ultimately contribute to constructing a certain world), it might be right to clarify, as Butler (2010) does, that only a small number of verbs are strictly illocutionary (as are actions expressed by words like promise, marry, punish, vow, etc.). More usually, statements are 'perlocutionary performatives', a term which 'characterizes those utterances from which effects follow only *when certain other kinds of conditions are in place*' (Butler, 2010: 147, my emphasis). With this, Austin attributed an important role to those 'felicitous conditions' under which an utterance may 'bring about certain realities' (Butler, 2010: 147).

A related point is made by Callon (2007) when, expanding the contributions of Austin, Greimas and Popper to understanding the relation of context with language, he asserts that the 'success' (rather than the 'truth') of a performative statement depends on its 'adjustment' with specific investments. A statement, for example 'all donations are to be considered altruistic' can only become effective if certain conditions of felicity are in place, and these conditions are the cluster of sociotechnical material and semiotic investments that actualise the world in which the statement is successful. For Callon (2007) or Butler (2010), then, a statement will thus not produce or actualise a world just because it is pronounced. This capacity is rather exclusive of pure illocutionary forms. Rather, perlocutionary performatives need a certain context in which they become successful.

Callon's contribution is oriented to showing how such contexts are material and textual assemblages rather than 'pure world[s] of words and interlocutors' (2007: 320). This means that the context in which the utterance is effective or successful is not only constituted by words and human speakers, but also by devices of material character. Callon uses the word 'world' to refer to such a heterogeneous and 'felicitous context'. In a sense, then, for a statement to have effects it needs to carry with it its own context: the context is never fully independent from the statement, or, for that matter, from the human practitioners that utter a statement. That is why Callon chooses the term *agencement* (Deleuze and Guattari, 2002) to characterise the 'relationships between statements and their worlds'. In an agencement, context and statement are mutually interwoven; they act together, they are successful only by means of being tied in a mutually enabling relationship. Taking the above into account, in the following I discuss how the informed consent form (ICF)[130] signed by donors and recipients may be understood as one of those instances or contexts that facilitates the realisation of the rhetorical statements that enact a moral character in the context of gamete exchange.

Informed consents: other accounts

There are a number of works that have discussed the role of informed consent in the context of gamete and tissue exchange, of which I single out two for the purpose of eliciting my own understanding: Waldby and Mitchell's (2006) and Dickenson's (2007)[131]. For Waldby and Mitchell (2006), who are mostly concerned with the ('voluntary and free') donation of tissues for biomedical research that can and in most cases will probably generate an economic profit the sharing of which the original donor will, in their view, be excluded from, the ICF 'is the mechanism that transforms a gift into property' (2006: 71). In this analysis, the main rationale for the use of ICFs is the 'transfer of possession from donor to recipient' (2006: 71), and in this sense it can be characterised as a transubstantiation[132] device, operating a transformation of substances that are already constituted (a gift that was already there becomes a commodity, a donor that was already there surrenders her property to a recipient that was also already there).

For her part, Dickenson explores the benefits and limits of IC for the case of egg donation for research and the creation of stem cells. Dickenson's critique of the legal protection afforded by IC is anchored in her Lockean conception of

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[130] In effect, it is possible to distinguish between IC as an investment composed of several material-semiotic elements (like ICFs, face-to-face encounters, etc.), and the ICFs.

[131] Dickenson explores the benefits and limits of the informed consent also, as here, for the case of egg donation, but the focus of her inquiry is donation for research rather than to women seeking conception through IVF. She occasionally draws, however, on examples from IVF to illustrate some of her analyses in the case of donation for the creation of stem cells.

[132] My wording.

eggs and other body materials as constituting a true property rightfully 'ownable' by women, who have laboured to produce them. Therefore, in her view, although informed consent is a mechanism that affords some protection against the *un*informed extraction of bodily substances, it fails to protect the *proprietors* (and donors) against the seizure of their properties from biobanks, biotechnology corporations or researchers who will most probably make a profit out of them. In this analysis, the IC has nothing remotely like a constitutive role; it is only a mediator, a legal device designed to dispossess, tricking already well-constituted proprietors into alienated ones.

In taking into account these contributions one might want to ask, however, if the IC can be conceptualised only as a mechanism that trades between two drastically different and already well constituted statuses of a person, as it is in these accounts. In effect, for Waldby and Mitchell (2006) and Dickenson (2007), the IC only aids in the substitution of already acquired statuses, from rightful owners to disinherited proprietors (Dickenson), or from naturally altruistic characters to, again, figures deprived of the opportunity to profit (Waldby and Mitchell). They do not ask, for example, how the characters (altruistic person, owner) who signed the informed consent originated in the first place, naturalising the personal possession of attributes or the legal status of a person as already well constituted conditions.

Moreover, although these accounts embrace to a certain extent the idea that sociotechnical investments like the IC collaborate in transforming the relationship that a person holds towards its body products, they ultimately partake in a representation of the IC as a surreptitious mechanism intentionally deployed to consolidate regimes of economic profit, while only being acknowledged as a neutral legal device performing the (well-intentioned or interested) task of informing research subjects of the uses of their donations. In this, Waldby and Mitchell's (2006) and Dickenson's (2007) contributions readily assume that the IC frames gamete exchanges as economic while veiling this process as non-economic and merely legal; they are analyses that operate on the basis of a double ontology where the visible is different from 'what is really going on' underneath. Because of this, they fail to examine how the IC is a sociotechnical arrangement which allows the very framing of something as economic or non economic on the same plane of reality, rather than a mechanism that hides and veils on the surface what is going on at a non accessible level.

The use of the ICFs in fertility medicine

ICs are used in some 'Egg Donation Programs' in Argentina to articulate relationships between 'donors' and 'recipients'. I have suggested above that such figures may be productively thought of as performated through sociotechnical investments rather than as pre-existing entities who are already given as specific types of characters (moral, interested, acting out of selflessness, etc.). IC is a good example of one such textual and material assemblage (Latour, 2005) engaged in performating characters and framing statements regarding their morality. What is more, in IC the donor and the recipient are usually enacted conjointly, insofar as defining the rights of the one is inextricably linked to defining the rights and obligations of the other. This is shown in the statement 'The egg donation procedure is anonymous; this means that I will not know the identity of the donor nor will she know my identity' (emphasis omitted) in a recipients' informed consent form.

Informed consent forms, which are the key material-semiotic device through which IC as a broader investment is materialised, are routinely used during gamete donation. Their employment follows recommendations by international medical, bioethical and legal guidelines, which are used in Argentina to substitute for the lack of national legislation. ICFs have the recognisable form of a legal document; they are written using standard legal formulas and once they are signed they acquire the status of a written agreement settled between two private parties. They are thus an instrument of accountability: if either of the parties fails to comply with the agreed, they become liable to legal action and the IC would in that case be, in principle, a chief instrument to make them accountable.

The type and number of ICFs signed at each clinic, as well as the legal formulations contained in it, vary slightly from centre to centre, although they will typically include one ICF consenting the realisation of the IVF cycle, one consenting the use of donated gametes and, in some cases, another ICF granting permission to cryopreserve 'spare' embryos that might result from the procedures. In some cases, there will be separate forms for both partners, and in others the partners will sign the same form. In other cases, such as the one I examine below, the ICF will be formulated as an agreement to carry out tests in the couple undergoing treatment. Most ICFs will have an important informational component, entailing at the same time the act of providing information and the acceptance that this information has cleared doubts satisfactory and that, therefore, permission is granted in full knowledge of the technical aspects involved.

As well as being instruments of mutual accountability, ICFs are also usually deployed as forms of legal insurance, ensuring clinics are covered against potential demands by patients regarding things like lack of phenotypic resemblance between donor child and parents, success of treatment, legal issues arising from the anonymity of the donor, etc. As far as it has been possible to establish in this research, donors usually sign a single ICF or a set of two ICFs where they agree to carry out medical tests, consent to donate their eggs and resign any future rights over the child eventually born. Recipients tend to sign more ICFs, since they sign both those authorising the realisation of medical tests, the consent to become a female egg recipient (where applicable), the consent of the partner of the recipient (where applicable), a consent to cryopreserve embryos, and one relating to the acceptance of the phenotypic characteristics of the donor child.

Finally, it is also worth noting some of the material properties of the ICF, properties that enable some of its most characteristic capacities. In effect, the ICF will usually be presented on a printed white sheet of paper on which an actual signature will be inscribed. This signature is both an index of the person that signs and a material consent to become a certain type of figure, the donor or the recipient. In fact, it is the signature which partially enables the enactment of a specific, unique person (someone with a name and surname), as an abstract character, the 'donor' or the 'recipient'. As a material index of the self, the signature – and the IC as a sociotechnical investment more broadly – facilitates the performation of the character; hence being in fact an affirmation of distinctiveness which enables the partial losses necessary to become an abstract character.

The signature 'fixes' in a sense an identity to a legal contract and in so doing attaches it to the general figure (the donor or recipient) that it contributes to enact. Yet in a different sense the signature also disembodies the signatory, insofar as from the moment it signs, the signatory becomes less of a particular person and more of an enacted persona. While this 'fixation' is simultaneously a temporal and a spatial one (it marks a point in time and space when the performation took place), the fact that the consent is archived together with other documents makes it as well both mobile and detached: it can be moved or re-located, while it becomes separate from the act of signing itself.

Taking a printed material form will also enable the ICF to be filed in a 'profile' folder[133] and archived in the clinic. Most importantly, the ICF will materially facilitate the very constitution of the profile of 'a donor' or a 'recipient', collaborating with the clinic's ordering of the subjects that it handles. It will thus constitute a physical record not only of the identity of the one who consented to be agenced as a recipient or donor, but also of other relevant data regarding, for example, when and where the agreement took place. And as a record of an agencement, the ICF also has a mnemonic dimension to it, since it will both actually 'remember' that all the above took place, and extend its occurrence into future time (once a signatory has signed the ICF, the act can be said to be recurrent, since the form is signed for good and for-ever, extending the act to an eternal present time that functions as a permanent validation of the will).

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[133] The construction of donor and recipient 'profiles' (or folders), is routine in Argentine fertility centres. I discuss this in greater depth in Chapter 6.

IC as an agencement

It is clear, then, that the IC is a semiotic-material assemblage, one that should be better approached as an inextricable ensemble of those components. This arrangement of heterogeneous elements can be further understood as an agencement, one that takes place between the signatory (who is not yet a donor or recipient, but a donor or a recipient becoming) and a series of statements contained in the white material sheet of paper, or ICF, where the abovementioned legal formulas are described. So there is a 'state of affairs' (Phillips, 2006: 108) (here, persons about to enter into a legal relationship and about to do certain things, in given circumstances in a fertility clinic, etc.), and statements that intend to 'capture' that state of affairs by describing it: '…The one who signs at the bottom of this instrument... holder of the National Identity Document No... (...) I manifest expressly my will to be recipient of eggs', among other examples.

IC is the precise point, the agencement, where both statements contained in the ICF and state of affairs come together, agencing each other and producing a connection which *has priority over* (Phillips, 2006) both components. In effect, it is at this point in time when statements and persons meet and the white printed sheet of the IC is signed, that the new unity (the agencement) takes place. Thereafter, it can no longer be understood as something composed of two, persons and statements, but as something that has priority in itself as a unity. In this, the agencement benefits greatly from the material way in which it can both demand (in the suspension points to be filled out) and record (in the act of filling out) a consent in the form of a signature, which captures exactly the moment when the two heterogeneous parts come together. It is not, therefore, that the legal summoning formulas printed on the paper have the magical capacity to constitute the subject as donor or recipient only by naming them – as in classical theories of interpellation like Althusser's (1971) – nor that all speech acts (Butler, 2010) have an illocutionary dimension to it and are able to bring about certain ontological effects only by being uttered.

Rather, it is more the case that the agreement reached with the signing of the ICF fulfils the demands of a perlocutionary event by granting certain conditions for the realisation of the statements. In this sense, the material form of the IC, the fact that one of its key devices is the ICF, which is printed on a white sheet of paper and prepared to be signed, together with the fact that the latter has the recognisable form of a legal document, and that it is further instrumentalisable as a record and retrievable as such in case of need, defines these conditions more clearly as *sociotechnical* rather than purely linguistic. As a sociotechnical agencement, the IC is an instance where statements and their contexts are mutually agenced. In other words, it makes viable the claim/ statement that someone is a donor, or a recipient, in the context of the signature of an informed consent form. In a strict sense, then, there is no donor, or valid statement claiming that someone is a donor, before the assemblage, the agencement made possible by the signature stamped in the ICF; but equally there would be no signature, no valid agreement, without a person, and a statement, regarding the willingness to become a donor or a recipient.

The above shows why the performative capacities of the IC, in the sense that the latter makes possible certain relations and certain acts, are not only the result of a linguistic act (as in Austin's (1962) and early Butler's (1990) accounts), but rather something closer to a performation (Callon, 2007). This is the case insofar as they include the bodily and material aspects (like signing with your hand a form that is printed in paper and that will later conform a paper record) that Mol (2002) and Callon (2007) established were also important in considering any enactment. In this, the IC includes the *performative* aspect of a linguistic deed ('I expressly manifest my will to be a recipient of eggs'; 'In knowledge of the above I decide to participate of the Egg Donation Programme in character of recipient'), whose occurrence configures a certain character (recipient, donor). But it goes beyond this by materially and bodily enabling such configuration through recording a signature written by a hand.

Hence, it is not simply that the actor performs *in character of* recipient only by means of a speech act, and in so doing magically becomes the recipient herself. It is rather because the sociotechnical quality of the investment as a whole reinforces this constitution through a signature and physical presence that it should be thus better called a performation. The latter is in a sense even more successful than a simple performative act, insofar as it includes material, semiotic and bodily aspects that support the configuration of the agent in not exclusively linguistic ways. (In other words, the 'recipient' is not enacted only through a speech act, but through a whole gamut of activities that diversify the basis, and thus the grounds for stability, of such configuration.) In this sense, a performation is even more successful than a performative (i.e. purely linguistic) act in constituting a character: it is not only that the actor/person performs *in character of* recipient (but backstage, *and in the same investment*, remains something else beyond such performance), but that in the context of such an investment the actor/person has truly been configured as a character.

Having examined some of the characteristics of IC as a sociotechnical device (its material-semiotic character, the way in which it demands and records a signature, and its indexicality or references it carries to how an event happens in certain conditions, at a certain point in time, in a given place, etc.), it is now possible to consider in more depth the effects of the IC as the context in which the statements contained in it become successful. In the following section I look at how IC, and some of the statements it enables, progressively configure what I have called the 'moral character', a central feature in the normative exchange of gametes.

The altruistic character

One of the statements that the IC enables and through whose framing will gradually acquire consistency is the assertion that donations have an altruistic quality. It should be recognised that, as contextualised in this particular setting, the quality of being altruistic cannot be ultimately disassociated from a set of other configurations (i.e. the act also being voluntary, anonymous, etc.), with which it is in fact entwined to actually produce the moral character. That said, the altruistic act and the altruistic person the latter progressively renders are one of the crucial aspects of the becoming of the moral character. Affirmations concerning the altruistic quality of donation are pervasive in clinical practice in Argentina, appearing in the space of the fertility clinic in many different ways, from proclamations in information and advertising brochures, to statements in the ICF, to set phrases repeated over and over again by the practitioners involved, to wording of proposed bills for legislation of the field.

In the context set by the IC, to claim that something is done out of altruism is to performate it as possessing two different (yet linked) sets of qualities. On one hand, the donation is performed as guided by the expectation of no further reward, this renounced reward being eminently a price, as I will show below. On the other, the deed is enacted as being out of solidarity, out of the wish to do good for no better reason than to do a good act, or the aspiration to give something to someone without expecting something in return. In the latter case, to performate an act as happening out of solidarity is different from making viable the expression of motives, which would imply, for example, selecting donors that say they act out of altruism. Here, rather, the individualisation of the agency (Callon, 2007) as altruistic implies configuring the acting agent as altruistic *irrespective of her motives.*

In connection with the first set of ideas, the reference to altruism is frequently linked to the demarcation of two distinct environments, one where the act of donating could potentially be carried out in exchange for the payment of a price[134] (a reimbursement that equates the price of a commodity in the context of a market economy), and another where the act of donating will not be compensated through a price-payment. For example, one of the ICFs used by a fertility clinic states under the rubric 'Legal Aspects' that

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[134] Here I follow explicitly the native categories emerging from my fieldwork, rather than imposing a vocabulary regarding the meaning of the act of paying. In my pragmatic approach, I do not thus assume that 'to pay' means something intrinsically, but rather try to understand how the verb is made to acquire specific meanings through specific investments. Following the examination of the statements in IC and a practitioner's sayings further below, I understand that in this context 'to pay' acquires the meaning of disbursement that equates the market price of a commodity, a monetary amount fixed through a process of valuation and pricing. Here, to pay is to abide by the rules of supply and demand in a market economy. *On the contrary*, to *compensate*, *reward* or *acknowledge* (*recognize*) is made to mean that the monetary exchange does not take place as a transaction in a market economy, but rather obeys other rules of exchange as those implied in non economies of rewarding and compensation, even if these utilize monetary exchanges as market economies do.

> It is of public knowledge and it has been explained to me that in our country there does not exist, until now, specific legislation that regulates Human Assisted Reproduction techniques or the donation of oocytes.
> In practice, [Name of fertility centre] follows internationally accepted guidelines.
> Following such guides the Donation of Eggs is: a) Anonymous b) Free and Altruistic and c) Voluntary [emphasis omitted].
> *In principle this means that, by being free and altruistic, the donor will not receive any payment for the donation of her eggs.*
> Equally *and because it is a free act* it is clear to me that my husband/partner and I *will not have any economic obligation towards the donor* (ICF used by a fertility clinic, my emphasis).

Here it can be seen how the statements materialised in the IC address directly the issue of how the deed is to be performed. In effect, while affirming the 'free and altruistic' character of the donation, the statement makes a specific demarcation regarding the quality of the exchange. The donation is thus to be acknowledged as 'free', where this free is the translation of the Spanish word '*Gratuito*'[135], specifically connoting absence of price-payment; this idea is reinforced by the accompanying clarifications ('In principle this means that, by being free and altruistic, the donor will not receive any payment for the donation of her eggs' and 'we [the recipients] will not have any economic obligation towards the donor').

Yet it is noticeable that the quality of being free, non-paid or, to follow the RAE's definition literally, not even being compensated through an 'award', is tied to and enabled by the fact of being altruistic, a sense which broadens the demarcation between paid or non-paid, or between an exchange understood as happening within or outside the confines of a market economy. In effect, as the RAE's definition of '*de gracia*' shows, altruistic is here to be understood as being carried out *without interest*, connoting without the expectation of benefit or

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[135] The RAE defines '*gratuito'* as '*de balde o de gracia*' (a translation with somewhat limited resonance for an Argentinean speaker). '*De balde*' is defined by the RAE as 'free [*gratuitamente*], without any cost', and 'de gracia' as 'free [*gratuitamente*], without any award [*premio*] or interest' (Gratuito. (2011). *RAE Dictionary*. Retrieved October 29, 2011 from http://lema.rae.es/drae/?val=gratuito).

convenience in the moral or material domains[136]. It is a performation by which the act of giving is segmented out from temporal sequencing or reciprocity. It is not only that in the context made viable by IC 'free and altruistic' means the deed is not economic in the restrictive sense of not being retributed in the form of a price, but also that it is not economic in the broader sense of not being motivated by benefit or convenience in the moral or material domains. This renouncing is, moreover, enabled by an altruistic character, someone who 'seeks the welfare of others, even at the cost of his own'[137] or that has 'an unselfish concern for the welfare of others', someone who is selfless.

Further, when the quote above states that 'the donor will not receive any payment', it is not stating that she will not be benefited with a monetary amount. As is well known, and as I have mentioned above, granting donors pecuniary rewards following handing over of the gametes is the most usual arrangement. Monetary exchanges do thus take place, and hence to legally state that '*the donor will not receive any payment*', if the monetary exchange is to be understood as the payment of price within the confines of a market economy, may potentially incriminate the centre as not fulfilling its legal commitments.

Yet to say that the donor will not be *paid* is not a legal disobedience on the part of the centre, even if monetary rewards are granted to the donor. In effect, to state that donors are not paid is rather to enforce through the sociotechnical agencement of the IC a performation of the pecuniary exchange as something *different* from the payment of a price; that is, as the conferment of a fee as a form of reward or compensation rather than as a disbursement that equates the price of a commodity. By so configuring the exchange of money as a

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[136] One of the definitions provided by the RAE dictionary for the word interest (*interés*) is 'convenience or benefit in the moral or material order' (Interés. (2011). *RAE Dictionary*. Retrieved October 29, 2011 from http://lema.rae.es/drae/?val=interes).

[137] The RAE defines 'altruism' (*altruismo*) as 'diligence in ensuring the welfare of others even at the cost of his own'. In English, the term is defined as 'Unselfish concern for the welfare of others; selflessness' (Altruismo. (2011). *RAE Dictionary*. Retrieved October 29, 2011 from http://lema.rae.es/drae/?val=gratuito; Altruism. (2011). *The Free Dictionary*. Farlex. Retrieved October 29, 2011 from http://www.thefreedictionary.com/altruism).

fee *indemnifying*[138] the donor, the statement contextualised by IC demarcates the clear limits that distinguish the domains of economics (understood as the realm of market exchanges) and morals (understood as that environment where pecuniary-yet-not-price-based exchanges take place). In fact, it is the act of rewarding in the form of a monetary *fee* that is not a price that prevents the sheer *selling* of an egg.

The production of a boundary between economics and morals is further achieved by other secondary investments that take place in the clinic. For example, information brochures and publicity material both disseminated through centres' websites and displayed in the physical space of the clinic also collaborate in producing the monetary exchanges as moral exchanges rewarding discomfort, time loss or travel expenses. By 'kindly' compensating for the donor's time and effort, fees are a further investment which enacts medical practice as moral (concerned with the donor's welfare, and with granting her deserved rewards), while at the same time distinguishing it from economics (by refusing to economically profit from the donation):

> The procedure is anonymous and the act of donating an egg is *voluntary and altruistic*, in which only physical discomfort and travel and work expenses that derive from the donation can be *compensated – economic indemnifying*[139] *compensation*. The donation *can never have a lucrative character* (Information in fertility centre website, my emphasis)[140].

By relinquishing economic profit ('the donation can never have a lucrative character'), the investment further configures the donation as moral, a morality specified through an altruistic character that does not seek economic benefit from her act. It is an investment in the same direction as the linguistic utterance of a doctor who clarifies:

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[138] My fieldwork showed that the term 'indemnification' ('*indemnización*') is semantically close to terms like reward or compensation in the context of the performance of an altruistic character. I explore such connection below.

[139] '*Compensación económica resarcitoria*' in Spanish in the original. I translate '*resarcitoria*' as 'indemnifying' so as to preserve the insistence of the message by the use of certain wording. In effect, '*resarcitoria*' as a viable synonym for 'compensatory' iterates the non lucrative character with which the gamete exchange wants to be invested; the phrasing resembles more a tautology ('compensatory economic compensation') than an explanatory statement.

[140] *Ovodonación*. (2011). Retrieved January 27, 2011 from Procrearte website: http://www.procrearte.com/donacion-de-ovulos.

> LA: And what is the *price paid* [to donors] approximately …?
> G: how much they *pay* to donors? $2000 each time
> LA: per donor
> G: yes. *And we don't talk about payment, right?* It is like a compensation, a reward, an acknowledgement. *Yes, we don't talk about paying for giving eggs, since otherwise we wouldn't be donating*. It is a *reward* for travel expenses, for involving their bodies, for going into the operating theatre, for the anaesthetics… (Gynaecologist 2, my emphasis)

The normative rectification (donors are *compensated*, *rewarded* or *acknowledged*, not *paid*) on the part of the doctor is part of the investment which works to accommodate the proper use of verbs with a perlocutionary function. In effect, if a centre states that it *compensates* its donors and reinforces the specific meaning of the term, for example, by the use of receipts with inscriptions such as 'I have received the total amount of … as *compensation*', the perlocutionary force of the verb helps to enact the monetary exchange as a compensation rather than as a price-payment; it operates a specific exclusion of the act of paying a price that makes patent how the exchange of money is not *per se* a payment (i.e. a monetary exchange under the prerequisites of a market economy), but can be understood differently according to the specific investments that produce it.

Returning to IC, it is worth noting how this co-enacts both the recipient and the donor as moral characters despite the IC analysed being intended only for the recipient. In effect, on one side it is the recipient who, by signing the ICF, accepts that the money which is being given (for example, as a price paid for the services provided by the centre) is not to be confused with a payment for gametes; that is, that she is accepting the conditions under which the donation can only be 'free and altruistic', the product of an act of selflessness which is not rewarded in the form of a payment or indeed, which might not be rewarded at all. This is an important instance in the constitution of the recipient as a moral character, one who does not attempt to pay for the products obtained, but who is content with accepting them as the result of an altruistic gesture. This gesture is carried out by an unknown other in the interests of the recipient's own welfare and which by contract the recipient cannot or will not reward. In fact, IC configures as a high moral standard the act of accepting what one is given without intending to pay it back, to receive what one is furnished with without intending to settle a debt that may originate in the giving, a feature that further distances the act of donating from the logic of the gift as formulated by Mauss (1990)[141].

At the same time, the donor is also enacted in the IC signed by the recipient, since the statement 'free and altruistic' concerns the donor's deeds and establishes them as selfless acts performed with the expectation of no compensation and with the sole purpose of ensuring the welfare of the other, who is here the recipient. Importantly, the statement that declares that an act is done out of altruism is one that inherently presupposes an other who is the addressee of the selfless act. Although, as I will show below, the enactment of anonymity frames the beneficiary as an unknown rather than a particular other, the claim that an act is altruistic not only frames the donor as a moral character devoid of interested intentions, but it also entails constitutively the receiver of the moral act. In a strict sense, then, there is not a beneficiary of a selfless deed until she is enacted through the moral deed that is here enabled through the contract. IC facilitates the occurrence of the moral act and, moreover, facilitates the mutually conditioned emergence and agencement of donor and recipient. These characters emerge together through the signing of informed consent, their morality being mutually entangled and dependent on the other's moral acts.

The enactment of a moral, altruistic character acting out of solidarity is further enabled by the circulation of other statements in the clinic. These statements render progressively possible the moral character they predicate given the felicitous conditions provided in the first place by IC. For example, an information document for prospective donors that can be downloaded from the website of one Argentinean fertility centre operating in Buenos Aires, is entitled '"More life": Egg donors Programme'. The first paragraph explains how

> In general, the unique and indescribable desire to become a mother awakes in the life of every woman at a certain stage (…) However, in some cases this intimate process of each person does not manage to achieve a pregnancy [sic], and many of these *sad hearts* do not have another

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[141] It is well known that Mauss's analysis of the logic of the gift in pre-industrial societies highlighted the fact that the gift demanded to be reciprocated.

> way than resorting to science. But, *despite progress in medicine*, the possibility of achieving a pregnancy comes many times *from the hand* of another woman, anonymous, *with solidarity*[142]*, that voluntarily* brings closer the dream of becoming a mum (Information document for prospective donors, my emphasis[143]).

The immediately following paragraph goes on:

> If *you want to be part of this dream*, and are between twenty-one and thirty-four years, we welcome you to take part in the information talk (my emphasis).

The performation of the moral exchange of gametes takes place also through the use of information devices which are networked in the context framed by IC. The 'freely' downloadable document that 'informs' prospective candidates for donation equivocates nicely between at least two assertions of the verb 'to inform'. On the one hand, it is a mere *mediator* (Latour, 2005): it does nothing but channel what appears to be neutral and (in an interesting anticipation of the role demanded from 'donors') 'disinterested' information. Yet the information device also performs as a *forming* device, one that constitutes further conditions of felicity for the achievement of the normative exchange of gametes by helping to materially shape the moral character. While being freely downloadable and widely available in the clinic, the information document is a device which easily circulates between practitioners and donors, distributed at 'information meetings' for prospective donors as the materialisation of a direct appealing strategy ('If you want to be part of this dream'). These facts are all part of the felicitous conditions under which the performation increases its possibilities of being successful (that is, of making donors act altruistically). Such a device constitutes a further investment aimed at reinforcing the normative achievement of a highly moralised subject (the donor), who is characterised as anonymous, acting out of solidarity and voluntariness, capacities which are

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[142] Originally 'solidaria', I translate as 'with solidarity' instead of 'supportive' because I want to preserve the strength of the word 'solidarity', which does not have an adjective in English.

[143] *"More life", Egg Donors Programme*. (2008). Retrieved May 22, 2008 from Centro de Ginecología y Reproducción website: http://www.cegyr.com/.

progressively brought into being through the repetition and reinforcement made viable through one such investment.

Yet it would also be possible to think that what is being normatively enacted here is not only a moral subject whose constitution is fictionalised as having taken place *before* her entanglement in the clinic (i.e. those altruistic women who want to offer a '*hand*' are welcome to attend the information talk), but also the very morality of the clinic, which '*despite progress in medicine*' appears to step aside in favour of the person who is constructed as the relevant character (the altruistic donor). The role of the fertility centre as that institution through which moral types of encounter are made viable is emphasised while the donor and the information device are mutually agenced to enact the morality with which the exchange wants to be invested. In this, the information device is not only an agencement that favours a moral act and a moral character infused with solidarity, but also an investment by means of which the fertility centre is indirectly enacted as a moral space, one where technical and sophisticated aspects of medical practice are neutralised ('*Despite progress in medicine*') leaving space for the occurrence of a relationship conducted on the basis of trust, integrity, honesty, etc.

The voluntary subject

I have already given hints above about how the investments oriented to producing an altruistic subject as part of the broader constitution of a moral character are closely entangled with investments aimed at performating another quality in the latter, namely the fact that she acts voluntarily.

IC is again one privileged investment in this sense, insofar as it enables two processes. On the one hand it makes possible the uttering of the statement concerning the voluntary nature of the deed in a perlocutionary form that would demand to be supported by felicitous conditions to actually increase its chances of performing what it declares. On the other it also enables the actual materialisation of the voluntary nature of the deed. In effect, the legal forms used in the ICF enable not the expression of voluntariness as a pre-constituted state that needs only be affirmed in the signing, but rather the very enactment of voluntariness as a quality of the action which is only realised through the IC (and further reinforced through other investments).

As this chapter has shown, rather than conceiving of the qualities of actions as prompted by psychological motivations or broader value ascriptions with which the individual arrives already equipped to act, a pragmatic approach thinks of action as the resultant of sociotechnical agencements which are complex entwinings of humans with nonhumans, and whose eventual distilment of an act can only be attributed to the very material-symbolic conditions enabled through such an investment. Following this, 'voluntariness', the fact of acting out of free will and not, for example, out of different types of (economic, emotional, etc.) constraint, is to be understood not as a precondition of the act (an actant is either free or not free, or not entirely free, to fulfil the act), but rather something which becomes realisable through the investments that make possible the act, something which is realised as part of the framings that make possible the act.

The ICF is a key piece of equipment that frames the donation as voluntary. In effect, the legal formulations present in it, and the demand and record of a signature it enables, make it possible to assert that it is not already free or semi-free individuals who voluntarily sign the act, but rather individuals who are agenced as free by the very investment through which they act, that is, by the ICF. The ICF is thus the constraint, the particular framing that uttering certain legal formulations and recording a signature enables the act and the actant as voluntary.

Further, as in the case of the altruistic subject, the affirmations concerning voluntariness entangle both recipients and donors in the making. In the case of the former, the ICF asserts, for example, that

> (...) with the signing of the present instrument I exteriorise my will, fully aware and free, to participate in [Name of fertility centre] Egg Donation Programme *in character of* recipient of eggs from external non patient donors (ICF retrieved from fertility centre, emphasis omitted, my emphasis).

One should not make the mistake of thinking that such exteriorisation is the manifestation of a pre-constituted will that is merely expressed through the ICF, but rather a true exteriorisation in the sense that the character of will is enacted through agencements that are necessarily exterior (although not previous) to it. The interiority of the will, the fact that it may be felt or experienced as a true inner capacity or space in the person, comes only after the character has been *voluntarised* through the agencement, that is, that the character has been exteriorised or performated through an external investment.

Equally, the following parallel formulations are further examples of how the IC works as the context or investment through which a voluntary character who acts voluntarily is progressively performated:

> I expressly manifest my will to be an egg recipient. I hereby give consent and authorise the medical professionals at [Name of fertility centre] to carry out the necessary medical procedures in accordance with the Egg Donation Programme (ICF retrieved from fertility centre, emphasis omitted).
>
> I understand the information given and I wish to give my consent through the signing of the present document for the realisation of the psychological assessment interviews necessary so that my wife/partner and I enter into the Egg Donation Programme in character of recipients[144] (ICF retrieved from fertility centre, emphasis omitted).

In effect, as I noted earlier, the act of signing that is both requested and recorded by the document is an important element in such performation, insofar as rather than the manifestation of a will that is already free to sign, it performates such a will through an agencement, one which entangles both the signatory and voluntary recipient-in-the-making, and the legal document that invites the hand to sign.

This enactment of voluntariness with regard to the donor can be seen in operation in other types of documents not directly intended for donors or recipients, but which are rather devised as medical guides or as orientation for practice, predominantly for internal reference. This further signals how the constitution of the morality of acts should not be understood according to an

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[144] I translate literally from the Spanish ('en carácter de'), meaning 'as', or 'performing as'.

interior/exterior epistemology where the exchange of gametes is acknowledged as a market affair intentionally 'veiled' or concealed through a fragile rhetoric of altruism, voluntariness and anonymity which is present only at the point where non expert subjects (donor/recipient) are involved (for example, at the point of signing the ICF). Rather, the becoming moral of medical practice, the normativity that inheres here and there progressively enrolling (Callon and Law, 1982) entities of all sorts in the achievement of non economic relations, needs to be understood as an actualisation that institutes its own conditions of effectiveness, and one where the 'institutor' (a fertility centre, a piece of legislation, a medical guideline) and the instituted (the donor, the recipient, the donation, the fertility centre) are in a sense on the same plane of reality and mutually enacted.

An article published in 2006 in the journal 'Reproducción'[145], SAMER's main publication, is entitled 'Guidelines for the admission and counselling [of donors and recipients] during donation and reception of donated gametes'. It lists, under the heading 'Aims of the assessment and counselling on gamete donation' the '*need to assess, in donors recruited by patients,* if there is any type of economic or emotional coercion' (Fernández et. al., 2006: 29, my emphasis)[146]. Here, the psychological guidelines seem to be quoting/enacting the normativity of voluntariness in reverse form, that is, pleading that the donation should not be the result of constraint.

In effect, although it may be argued that voluntariness does not follow directly from the lack of 'economic or emotional' constraint, the psychological guidelines can in fact be understood as an investment whereby the plea for an

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[145] The journal receives contributions from different medical experts and other health professionals like psychologists. Despite having an Editorial Board, the journal is neither peer reviewed nor indexed as a scientific journal. Its main aim is to divulgate information and research relative to the reproductive field, publishing 'original articles, literature updates, comments on clinical cases, selected bibliographic material, and papers commented by experts. It also publishes SAMER's regulations, the list of authorized centres, upcoming national and international events' (*Bienvenidos a Reproducción.* (2010). Retrieved September 5, 2010 from SAMER website: http://revista.samer.org.ar/).

[146] Although the parameter is said to be used in the case of donors recruited by patients, an arrangement which is much less common than anonymous donation, it is nevertheless significant since it replicates statements permanently iterated in the clinic in relation to the voluntariness of the act performed by both donors and recipients.

unconstrained act supports the progressive achievement of the voluntary character of the deed. Although it may lack the power of enforcement of a law that punishes the disobedient (in this example, both the donor who may donate constrained and the psychologist who may allow such an aberrant donation), the norm/guideline is even more efficient (Foucault, 1979), and more performative, than the law, facilitating the framing of the act as voluntary, if voluntariness can be successfully established as a continuation of lack of coercion. In this sense, the norm/guideline is not only declamatory (i.e. not only utters a statement with scarce effect on reality), but truly perlocutionary insofar as, given certain conditions, it will actually affect the character that donations progressively acquire, as I explore below.

A psychologist I interviewed in one fertility centre, for example, shows me a questionnaire he uses during the 'Egg Donor Evaluation Interview'. He has previously emailed me the psychological guidelines mentioned above and that I later find in SAMER's journal. The device is extremely difficult for a social scientist to understand. One of its salient figures, for instance, is that it combines direct questions in the form in which they could be presented directly to the donor/interviewee (i.e. 'How did you find out about the donation programme?) or even filled out by her in the questionnaire, with seemingly single categories under a rubric, which are obviously only intended as topic guides for the interviewer (i.e. 'Incest – Abuse and/or rape – Professional treatment'). In some cases, the categories are already 'qualified', as if the answer was already known (i.e. '*Numerous* family losses', my emphasis). Overall, the questionnaire contains a collection of items of an astonishing degree of heterogeneity in their complexity to address (categories such as 'Recent deaths or births' are followed by 'Dysfunctions in the family of origin').

Title '9' is 'Motivation to donate', under which there are listed very concisely 'Medical', 'Financial' and 'Psychological'. Although I could not clarify in the interview how these particular categories work (i.e. whether they are mutually exclusive, what each entails exactly), I am intrigued by how the categories operate in the context of a questionnaire-tool to assess the appropriateness of a candidate as a donor, and in the context set by the guidelines mentioned above. Would a positive answer to the category 'Financial', or 'Medical', for example, imply that the donor is not acting voluntarily? If the donor says she has decided to donate in order to access an otherwise unaffordable medical check-up, would this 'Medical' reason prevent her act from being understood as voluntary?

According to Psychologist 2, he 'assesses and counsels at the same time'. In the 'Egg Donation Protocol' used by his centre, donors and recipients in-the-making are expected to undergo between two to three interviews before donating or receiving eggs. No potential donor/recipient can effectively become an actual donor/recipient without having accessed the assessment/counselling interview, and without having been given a green light by the psychologist. Regarding the donor, I am told the centre accepts between four in ten and six in ten (more precise numbers are not available) of all those applying to be a donor. The remaining ones are not accepted in view of their medical and psychological tests results, 10% or less of these 'flunking' (according to Gynaecologist 8) the psychological interview.

The interview is thus a crucial investment oriented to producing donors and recipients. It acquires this capacity exactly because it is as much a *counselling* as an assessment device. In effect, the psychologist will use his specialised knowledge to assess, among other things, the degree to which the donor/recipient-to-be is acting voluntarily. He tells me for instance that the protocol states that an *ethical* ground for dismissal is an applicant who is in 'an extremely needy situation', insofar as such condition would imply a less voluntary act. Agenced through/with the protocol, the psychologist will then evaluate the degree to which a prospective donor's economic situation is allowing her to act voluntarily. It appears then as if the donor was not fully conscious of how to act in a voluntary way until the psychologist/assessor validates a relevant degree of voluntariness through the interview. The 'situation' of a donor (or her motives, in a different case) does not constitute valid unconstraint until it is sifted through the validating investment of the mental health professional.

Yet a key aspect of such validating investment is the fact that it is tied to 'counselling'. Here, counselling encompasses a wide range of activities, but in the words of the practitioner I interviewed it appears to include the practice of making a potential donor 'realise' other aspects of her act that may not be apparent for her. For example, the psychologist says that:

> (...) [the donors] come in for the dough[147] (...) most of them come in for the beans (...) *The truth is donation around the world is for cash, we are not angels*. But I think that beyond this most of them take with them a great spiritual satisfaction. Specially those who are already mothers, because they know how they are going to change the life of a couple (Psychologist 2, my emphasis).

Interestingly, this transformation is not unrelated to the counselling exercised by the psychologist. In effect, he immediately explains:

> (...) the thing is, we sit down and *I will make a donor sob in five minutes. If you make her get in touch with this* [the change of life of a childless couple] their eyes get glassy right away, they get emotional because it is important what they are about to do. They tell you so themselves. Just now a donor came and she said 'You know what, I came in for the cash but I leave with something much bigger' (Psychologist 2, my emphasis).

The quotations above show how the psychological interview is a true investing device, one through which expert knowledge both *validates* the conditions under which a donor will donate (a validation without which such conditions would not account as truly voluntary), and also performates such conditions into the proper ones. In effect, in his terms 'donors come in for the dough' yet through talking and counselling, making the donor 'get in touch' with what is expected of her as a voluntary moral subject, she will 'sob in five minutes', once she realises the importance of what she is about to do. This is a true production in the sense that those donors originally motivated – and constrained – by money will be agenced through the psychological interview to act out now voluntarily, out of the conviction that they are performing an intentional act.

As I described at the beginning of this section, a key aspect of the performation of the voluntariness of both donors and recipients are the devices that *inform* what the donation is to both donors and recipients. For example, the psychological guidelines quoted above assert that

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[147] I find the translation of '*guita'* and '*plata'* (meaning 'money' in informal Argentinean Spanish) for 'dough' and 'cash' better than 'money', which would be more suitable for '*dinero*'.

> One of the aims of counselling in gamete donation is to protect the emotional wellbeing of donors and recipients and ensure that both parts understand the meaning and the implications of donating or receiving genetic material (Fernández et al., 2006: 27, my emphasis).

ICFs provide information about what the donation consists of, as do other devices like the psychological interview, the brochure entitled 'Egg Donation Programme' and the informative talk, among others. Importantly, part of the enactment of the moral and voluntary character is the enactment of understanding of the information provided: devices designed to acknowledge such understanding are crucial in ensuring the achievement of the subject of will. The 'Egg Donor Evaluation Interview', which encompasses both the personal interview between the psychologist and the prospective donor, and the questionnaire designed to facilitate it, feature centrally here. The personal interview works as a form of assessment of the capacity of the donor to understand what the donation is about, and thus freely consent to carry out a donation. Such assessment is inscribed in the questionnaire, where the practitioner will use section '12 – Ability to understand and assimilate the information given' to provide his answer.

The psychological interview is of course an instance in which a very specific kind of knowledge is deployed: the practitioner makes use of his expertise to assess to what extent the donor is compatible with the psychological parameters in place (present for example in the psychological guidelines mentioned above) to be able to be characterised as a donor. Yet the psychological assessment interview is also a performation device, one in which both the practitioner and the potential donor perform as characters interested in achieving a voluntary act. Acting as the subject in possession of specific expertise, the practitioner will thus perform his role as the one who oversees that the potential donor has fully understood the conditions and commitments implied in the donation. By displaying such knowledge, he is part of a sociotechnical arrangement through which the voluntary aspect of the moral character of donation is performated. He plays the role of the person who is in charge of supervising the efficient comprehension of information regarding the donation, and thus that the latter is carried out in full knowledge, in a voluntary manner. The same can be said of the donor, who performs in the situation of the interview as the person who has thoroughly understood the terms under which the donation is to be carried out, and thus is fully capable of accepting the donation as a subject of will. Significantly, this is not simply a linguistic exchange between the psychologist/assessor and the donor-in-the-making, but rather a material-semiotic encounter given the important role played by material elements such as the 'Egg Donor Evaluation Interview' questionnaire.

Finally, as I have been saying all along, the voluntary character enforced through the investments analysed above (the ICFs, the psychological guideline, the 'Egg Donor Evaluation Interview' questionnaire, etc.), is a moral character. Its enactment is part of the wider achievement of morality as the relevant domain with which clinical practices want to be identified. In this sense, the making possible of sociotechnical agencements that progressively enable designations[148] such as donor and recipient, together with the quality of their deeds (altruistic, voluntary, anonymous, etc.), is a fundamental moment in the constitution of a moral, normative economy of gametes. Medical practices are as much invested with such morality as are the figures and deeds constituted through it, insofar as the process of enforcing a normativity of acts acted in a moral way is part of the logic of performating the medical practices concerned with gamete donation as non economic.

The anonymous donor/recipient

The third quality rendered in the clinic as part of the enactment of a moral character is its anonymity. As with the case of the altruistic and the voluntary subjects, anonymity is produced as a quality shared by both the donor and the recipient, with the consequence that the emergence of anonymous donors implies the emergence of anonymous recipients, and vice versa. Importantly,

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[148] A designation that, one could argue, is neither the result of the exercise of 'human consciousness', nor a necessary – causal – consequence of 'the potentiality' of altruism, but rather the 'strategic' emergence of an actualization.

thus, the rendering anonymous is not a form of identity loss but rather of enacting an (abstract) identity in relation to another, insofar as the centre will be in charge of preserving donors' and recipients' identities, but donors and recipients will be anonymous in relation to one another.

Once more, IC (and the ICF operating within it) is a privileged investment in the performation of anonymity. It carries statements regarding the anonymity of both donors and recipients, as for example the one recounted above:

> I have been informed that anonymity means that the donor will not have information regarding the recipient and her husband/partner, as well as we will not know anything about her identity (ICF retrieved from fertility centre).

Here, anonymity appears to be a quality enforced per se, only later being specified as something to be rendered in the donor *and* in the recipient. By signing the contract, the signatory named at the top of the page and identified by his/her National Identity Number ('The one who subscribes.... holder of the National Identity Number...., married to...', etc.) accepts voluntarily to be performated as anonymous to an unknown other. The fertility centre becomes the last and only holder of possession of the identity of donors and recipients, who voluntarily accept to be anonynimised *in relation to one another* and in exclusion of the centre. The contract of anonymity is one that enacts the donor/recipient relationship as one of equals insofar as they have both surrendered their identities to the doctors.

Yet what anonymity is made to mean is not exactly the same in each case. The greatest emphasis is put on enacting the anonymity of the donor. This point is linked to the fact that in Argentina most centres will operate an 'anonymous donor' standard, meaning that the recipient will not be allowed to bring in *her* donor, but the latter will be picked by the clinic and anonymised[149]. A doctor at

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[149] As I explore in Chapter 6, a core criterion to attribute a certain donor to a certain recipient is the matching of their physical characteristics. In this sense, the donor is never *any donor* but an unspecified specific, someone who is not known to the recipient yet who is the most phenotypically similar to her among a pool of anonymous donors.

one fertility centre explains to me the strictness with which the measure is followed and its rationale:

> LA: This thing about anonymity or no anonymity, I understand that in most centres donations are anonymous, how is it here?
> G: We accept only anonymous
> LA: OK, and for example if a woman comes with a friend she brings...
> G: [Interrupting] No. The sister, the friend, whoever it is
> LA: And why is that? What is the... the foundation underlying this institutional policy?
> G: This is because with regard to all the advice we have had, we have been working with two psychologists for the last fifteen years (...) and according to the experience, according to all the information collected, they have always suggested that the fact that it is not anonymous entails risks of roles and eventual family conflicts that make it inconvenient, whether it is between sisters, or whether it is an aunt but also half mother, her genetic part is in the egg but that can also imply that that aunt feels that she has a right over her niece that there is no reason for her to have, that is why we have always defended the anonymous programme (Gynaecologist 8).

In the words of the doctor, the lifting of anonymisation practices and the acceptance of known donors could imply family conflicts and 'risks of roles' between family members, giving the example of intra-family donation and the potentiality of the donor members claiming rights over the donor children. The centre thus enforces an anonymous programme in an attempt to ensure that such conflicts do not arise. The normativity of kinship implies that only very specific forms of parental bonding are allowed and enforced, namely those of those who will socially perform as parents, whilst others are disavowed as proper or viable, specifically those of family members of the infertile couple that act as known donors. At the same time, the investment set to produce an anonymous donor aims to prevent the configuration of what it performates as an immoral subject, one which would feel entitled to forms of parenthood over the donor child on the basis of her genetic relationship with it.

The performation of anonymous subjects through devices like IC is thus strongly moral. By allowing only anonymous/anonymised subjects to donate, it helps to performate medical practices as moral overseers of the rules of proper kinship, which become morally impeccable insofar as they avoid 'family conflicts' and 'risks of roles' arising. Acting morally, that is, being performated as a moral supervisor, medical practices enforce proper places for each family member, disavowing the potential senses of entitlement over future persons that might arise from intra-familial donation.

There are other ways in which sociotechnical investments perform a moral type of character and further render medical practices as moral. A private bill presented in 2008 by SAMER to the National Congress states that:

> In the case that Assisted Reproduction Techniques are used with gametes which do not belong to one of the members of the couple, they will be used with donated gametes. The donation will be carried out formally, in writing, with express consent from the donor and the beneficiaries of the techniques, *with a secret* and free[150] character, *and will have an anonymous character with regard to the identity of the giver*[151]. Once they have come of age, the person born of gametes donated by third parties will be able to legally request to know the identity of the donor who contributed their respective gametes. *The person born of donated gametes will be recognised as the biological son*[152] *of the beneficiaries of the techniques and the gamete donors will not have in any case rights or obligations over the born child* (SAMER, private bill presented to the National Congress, my emphasis)[153].

Here, the enrolment of the donor as anonymous proposed in the bill seems to operate the anonymity of the donor as a way of discharging her of any obligation towards the donor child, dispossessing her of any rights over the donor child, and enforcing the undertaking of the moral responsibility of parenthood by the 'beneficiaries of the techniques'. In effect, the bill makes a statement regarding the anonymity of the giver. It then specifies that the donor child will be able to know his/her genetic identity once s/he comes of age, after which it clarifies that the donor will have no rights or obligations over the donor child, whom will be *recognised as biological offspring* of the 'beneficiaries of the techniques', in this case the recipients. Thus the production of anonymity further separates the *genetic connection* from the *biological* connection: donor children will be able to know their genetic origins once they come of age, even if they will still be

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[150] *Gratuito* in Spanish in the original, meaning free, not paid.

[151] *Dador* in Spanish in the original, rather than donor (*donante*). RAE defines *dador* as '[the one] who gives' (Dador. (2011). *RAE Dictionary*. Retrieved November 6, 2011 from http://lema.rae.es/drae/?val=dador).

[152] In masculine form in Spanish in the original, following routine use of masculine for the generic form.

[153] *Proyecto de Ley SAMER*. (2008). Retrieved April 4, 2009 from SAMER website: http://www.samer.org.ar/proyecto_ley.php.

considered 'biological children' from the parents that cared for them but did not conceive them biologically.

The anonymisation of the donor does not detach her *genetically* from the child, insofar as genetic identity is legally retrievable once the child has reached the legal age. Yet a distinction between the genetic and the biological operates to produce relatedness and entangle the child *biologically* with the family acting as carer. In this, anonymisation works to establish a distinction between the genetic and the biological that complicates the commonplace appreciation of gamete donation as a form of 'biological loss'. Rather, by anonymising the donor yet predicting the possibility of knowing her in future time, anonymisation works to introduce variability in the degrees of physical connection between donor, child and parents that enable different forms of entanglement and disentanglement.

A similar link between disclosure of identity, discharge of the donor and entangling of the child with the recipients is made in one of the ICFs retrieved from one fertility centre. It says:

> It has been explained to me that the disclosure of identity will only take place in cases of exception, in the case that a court order relieves [Name of fertility centre] of the medical secret (...)
> It has been explained to me that the disclosure of identity does not suppose publicity.
> It has been explained to me that the disclosure of identity does not imply a legal determination of filiation, generating for the donor no rights or obligations of any kind over the child/ren born, who will be considered my son/s [children] and of my cohabiting husband/partner (ICF retrieved from fertility centre).

In these sociotechnical investments, the rendering anonymous of the donor is part of her enactment both as not being responsible for the child and as having no rights over the child. She becomes a moral subject by detaching responsibility, renouncing any prerogatives over the child, that is, by holding a relation with the child not defined as parent or kin. The investment which is worth noting further enacts her as altruistic, as expecting no manner of reward in return of her action. To become moral in this sense is to become disconnected from the child. At the same time, rendering the donor anonymous performates the recipient's character in a different moral sense, insofar as she/they become morally responsible for the child ('[...] the child/ren born, who will be considered my child/ren and of my cohabiting husband/partner'). The bill enforces this further by characterising the relationship between donor child and recipients as *biological*: 'The person born of donated gametes will be recognised as biological son [offspring] of the beneficiaries of the techniques'.

The rendering anonymous of the donor is a way of enacting both the donor and the recipient as differently moral subjects. If by becoming anonymous the donor is both exonerated of further kinship responsibilities towards the child and disavowed of any kinship privilege over the child, the recipient is also enacted in the anonymisation of the donor by acquiring moral kinship accountability over the child, a fact emphasised in a section below in the ICF, entitled 'Responsibility':

> I also understand that it/they [the donor child/ren] will be legally considered my child/ren and of my wife/partner whom will carry out the pregnancy. *I understand that therefore all the rights and obligations that derive from parenthood will be generated for me, which I commit to undertake* (ICF retrieved from fertility centre, my emphasis).

The donor's morality is thus part of her becoming anonymous, insofar as by being (voluntarily) anonymised she morally accepts renouncing to any relationship with the child, and inhabiting the moral proper space of disconnection. But there is another way in which the donor becomes moral also through anonymisation, yet in this case through the anonymisation of the recipient.

When IC and other investments state, as examined above, that the recipient is anonymous, they are performating the recipient as a generic recipient, that is, not as someone in particular who will benefit from the donation, but as a recipient as defined only by her need of gametes. In effect, it was Richard Titmuss (1997) who famously asked 'Who is my stranger?', not so much to show the importance of knowing who is the recipient of an altruistic act, but rather to emphasise how much institutions like the NHS in the UK fostered the expression of what for him was the 'biological need to help' an unnamed *stranger*. For him, however, 'anonymous helpfulness' (1997: 279) in society was characteristically ‘not contractual’; it derived only from ‘our own characters’ and originated way beyond legal bonds of obligation.

Unlike Titmuss, one may argue that the wish to donate to an ‘anonymous stranger’ achieved through a contract rather than *expressed* in the act of donation, is also a further way in which the donor is enacted as a moral character. The investment of the recipient as anonymous enables not only the anonymity of the person who will receive, but also enacts the giver, and the recipient/giver relationship as a whole, as moral kinds, insofar as the gamete is not purported to be a particular one, but to be an undefined one which is one of many. There is no preference for someone, no one-to-one relationship, no personal bias in an exchange which has been secured through sociotechnical investments which are abstract and anonymous on both sides. In a sense, then, the anonymising apparatus takes seriously Titmuss’ conceptualisation of donation to strangers as the gold standard of altruistic donation. It transforms what for Titmuss were the economic and moral benefits of ‘deeper human motives’ (1997: 292) to donate to an unknown person into a form of sociotechnical normativity that is ingrained in the very investments that ensure it. As Latour makes clear when he states that ‘a substantial part of our everyday morality rest[s] on technological apparatuses’ (Latour, 2002: 253), the high moral standard of donation to strangers cannot be left to chance or to an innate ‘biological need to help’ (1997: 279) an ‘unseen stranger’ (1997: 292), but has to be enforced by material arrangements that help to ensure the moral subject acts according to the norm.

This chapter has addressed the constitution of moral characters through the setting in place of sociotechnical arrangements (most notably, that of IC), a setting which I have further argued contributes to performating the very space of the clinic as a moral, non-economic type of environment. Relevant to such processes of formation, it should be emphasised, is the fact that they immanently enact sperm and egg donation as two distinct kinds, insofar as material altruistization, voluntarization and anonymization are enforced exclusively in the donation of eggs, while they remain absent in the case of sperm. In effect, arrangements oriented to ensuring the altruistic and voluntary character of sperm donation are very rare in Argentina. While anonymization is more common, it acquires a different sense once it is not attached to the production of an altruistic and voluntary character. In sperm donation, the production of anonymous exchanges is almost antithetical to the production of moral characters, insofar as it facilitates the detachment of donor and potential offspring. A practitioner said: 'We don't have known donors here. There is no *imposition*, as in certain European countries (...) where donors *have to agree* to be contacted if the child so wishes once he becomes of age (...) *The donor is not compelled to agree* to be contacted' (Endocrinologist, my emphasis). As is clear, anonymization works to foreclose agreement to be contacted, thus not producing a moral kind in the character of the sperm donor. Furthermore, differences differences between egg and sperm donation need also be understood in connection with the noticeable disparity in the amount of the monetary amounts exchanged as compensation (in egg donation) and payment (in sperm donation)[154]. Thus, the performation of altruism appears to be inversely linked to the amount of the monetary exchange: it is materially enforced in the case of eggs, yet it seems irrelevant for the case of sperm.

The following chapters of the thesis are concerned with the production of nature in the clinic. They study how phenotypic resemblance and biological variability are materially enforced in ways that are both specific to Argentina, and emergent and un-prescribed in the design of the arrangements that enable them. Both chapters rely, moreover, on the analyses that have been presented here, which are thus offered as a way of setting up the clinic. They show that the latter is a space in which there operates what from now on I will call the norms of nature. It is a space liberated from commerce where nature can be done as nothing more than nature, freed from the suspicion of commerce and invested with morality. In the following, I show how the making of nature in the clinic relies on the normative re-creation of morality which I have here suggested grounds all further investments of the clinic.

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[154] As indicated in the Preface, while egg donation compensation doubled the monthly minimum wage (MMW) in October 2009, payment for sperm donations reached only a third of the MMW in the same period.

Chapter 6: 'You are (not) seeking a prototype'. Photographs, forms, and the material production of different persons

In this chapter I look into 'phenotype matching', the practice of coordinating the physical appearance of gamete donors with that of recipients[155] with the aim of increasing the probabilities that the offspring procreated through donated reproductive material resemble those who will perform as their parents. As in the rest of the thesis, I focus on how physical likeness is produced out of the collaboration of humans with devices in regulative sociomaterial arrangements. I claim that the production of similarity between parents and offspring entails enacting specific forms of nature as part of the production of kinship, an enactment that I suggest implies forms of nature preservation and differentiation that acquire specific meaning in relation to the history of Argentina's population.

I start by providing a brief account of previous contributions in the field of kinship studies that help to frame the study of physical resemblance, and then focus on the main technical steps involved in realising physical matchings in Argentina. Following this, the first analytical section of the chapter looks at the use of photographs and the importance this has for the constitution of the donor and the recipient. Examining closely the dissimilar treatment received by photographs of those who will perform as donors and those who will perform as recipients, I argue that the enrolment of the photograph as a material-semiotic device is crucial to the production and stabilisation of the donor and the recipient as distinctly defined. As part of this, I suggest that the figures participating in the matching should be understood as the result of sociomaterial processes of disentanglement that allow the characterisation of persons, whereby the acts of persons are not the result of what they 'are' but rather of the ways in which they have been equipped to act.

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[155] Although for purposes of simplicity I refer throughout the chapter to 'donors' and 'recipients', I argue that these two figures need to be understood as the result of sociomaterial investments whereby donor and recipient come to be. In this sense, donor and recipient are figures in-the-making in the context of the matching, rather than already stable characters.

As part of the attention paid to practical processes of enactment and the role of material devices, the second section of the chapter examines the use of phenotypic data forms where the physical data of donors and recipients is recorded. Looking at the interaction of the medical practitioner with the form, and at the ways in which such interaction enables particular kinds of complexion colour detachment and stabilising, I claim not only that the form registers and memorises persons' physical appearance, but also that it helps to performatively shape the nature of future bodies (this is, of future babies), who thus come out as embodying difference.

On the basis of the analysis of the role of photographs and phenotypic data forms in the arrangement of the matching, in the third section I explore two further examples of the ways in which nature is normatively enacted as a result of the material production of physical coherence between parents and offspring. On the one hand, I look at how what are taken to be nature's norms, in this case those regarding recessive genes and random genetic recombination, are instantiated as part of the assignation process of certain donors to certain recipients. On the other, I examine how the rejection of certain demands from patients is part of the enactment of nature as involving the passing on of genes from parents to offspring. In analysing two such cases, I also anticipate how the enactment of nature's norms points at forms of nature preservation and differentiation that are looked at more closely in the last section, where they are linked to the processes of constitution of Argentina's population, and which allow us to account for the local meaning that a global practice like phenotype matching has.

What's in a face? Biology, physical appearance and kinship

It is a long established fact in the field of studies of kinship that Western ideas of familiar relatedness involve notions of things transmitted through 'nature', paradigmatically blood and genes, while these biological connections are frequently socially re-deployed in ways that sometimes replicate them, and sometimes complicate them, making them a set feature of kinship and yet a not straightforwardly accountable one. For example, Schneider (1968) claimed that kinship in the US was understood to be genetically based, yet he also underscored in later analyses the extent to which biogenetic ties were being submitted to the logic of choice (Schneider, 1984). Similarly, Jeanette Edwards (2000) accounted for the ways in which people in a town in northern England conceived themselves as both being 'born' and 'bred', linked through descent but also through culture, by the fact of having grown up with others in a certain place. In addition, taking the nature/culture dichotomy as core to Euro-American kinship, but also accounting for the ways it has been complicated by reproductive technologies, Strathern (1992a) identified a 'post-plural' nostalgia in the way in which European publics felt the loss of nature that is concomitant to an increase in the possibility of choosing how people come to be. And relying on Strathern's concept of 'merographic connection' as well as on her own ethnography of PGD, Sarah Franklin (2003) has argued that although increasingly available genetic information may confirm beyond doubt that genes 'make us who we are', the way in which such information is made sense of by those who are in possession of it is far from straightforward. Thus, Franklin has suggested that the new genetics work by assembling parts (like the natural and the social) which, belonging to different wholes, 'instrumentalize [...] the model of kinship that says it is part of biological process and part of society' (2003: 82).

The contributions above have been important in problematising kinship as not simply a social construction of natural facts, and as that which incorporates, in variable ways, 'nature'. Once these contributions established the importance of biological links for Western kinship, Becker et al. (2005) focused on testimonies of families constituted through donated gametes. They employed the term 'resemblance talk' to signal how commonplace 'chit chat' about parent-offspring resemblance illustrates how 'the normative folk model of kinship in the US attaches great significance to genetic or "blood" relationships' (2005: 1301). In its apparent banal significance, talk about children's appearance is constitutive of the parent-child relationship, a form of producing filiation by phenotypically relating babies to their progenitors. Yet as Becker et al. make clear, 'resemblance talk' can also be a fairly destabilising moment for donor children's families, in the sense that, if physical continuity is not clear, connections through informal talk are more difficult to establish.

The issue of parent-children phenotypic resemblance has also been addressed in the case of other forms of family like those of lesbian partners (Nordqvist, 2010) and those with adopted children (Carsten, 2000). In the case of heterosexual couples, however, physical resemblance is a highly anticipated result of conception (arguably more than in the cases above), and provided children look reasonably similar to their parents, the issue of donation is a much more disguisable feature of the relationship. In Argentina in particular, parent-offspring physical resemblance is a fixed feature of everyday 'chit chat' over young children, and when a child does not resemble their heterosexual parents (especially the father[156]) the fact is usually pointed out in a jokingly manner (for example with exclamations like 'It does *not* look like you!, where the 'joke' implied is that the child might be the offspring of someone else). This shows that when a child has been conceived using donor gametes by an heterosexual couple, such signalling of the lack of resemblance may be a painful reminder of the lack of biological continuity, and may force the disclosure of a much more hidden secret (in comparison with adopted children or children of lesbian couples). Hence, as Becker et al. document, heterosexual parents composing families with the help of donor gametes usually feel that resemblance talk 'may cast doubt on the legitimacy of the family structure and subject family members to stigma' (2005: 1301).

Through the notion of 'resemblance talk' and the menace it might pose for family cohesion and constitution, Becker et al.'s contribution helps to emphasise just how much phenotypic appearance is taken to be a 'proof' of a biological connection, and thus a key locus of kinship enactment (insofar as the signalling of the presence or absence of the former qualifies the latter). Their findings can also be thought as a particular case of the broader account by Marilyn Strathern, who pointed out that tracing natural ties is part of everyday

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[156] In Argentina, the 'joke' involving the 'milkman' happens with the 'waterman' (the man who delivers bottled water to the house): when the child does not resemble the father, it may resemble the 'waterman'.

kinship-making in England, one which is based on the presupposition that 'if something [like biological connection] (...) is seen, it is real' (1992a: 52). Discussing racial thinking, Peter Wade makes a related point when he asserts that the latter is 'based on a complex and shifting set of ideas about certain aspects of physical appearance', where such physical appearance is 'linked to descent and the inheritance of both "natural" and "cultural" traits' (Wade, 2009: 2). This chapter asks how such physical appearance is materially enacted in Argentina. In order to do so, it draws upon Becker's et al.'s account of resemblance talk as being about biological continuity and its importance of kinship, together with Strathern's suggestion about the 'real-ness' of that which can be seen, and Wade's assertion that physical appearance is one key site of Western racial – and kinship – reckoning.

Phenotype matchings, technical ensembles

In this section I account for the ways in which phenotype matchings are carried out in fertility clinics in Argentina, paying special attention to operations performed by two administrative devices, phenotypic data forms and photographs, in conjunction with humans. On the basis of this exploration, I claim that the matching of phenotypic characteristics needs to be understood as a socio-technical ensemble, a form of interaction between human and administrative devices.

Phenotype matching is an established practice in reproductive donation around the world[157]. It consists of the classification and matching of some

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[157] Countries that currently have legal provisions regarding the matching of donor and recipient(s)' phenotypes include Spain, the US and the UK, among others. Spanish regulation state for the case of *sperm* donation that 'Under no circumstances will the donor be selected by request of the recipient. The medical team will have to ensure the *greatest possible phenotypic and immunological resemblance of the available samples with the recipient woman*' (Law 14/2006, Chapter 2, Article 6, Paragraph 4, accessed online 10 June 2010, my translation, my emphasis). In the US, the ASRM also refers – again, only for the case of sperm donation – to matching of donor and male recipients' characteristics, although overall it is much less constrictive than the Spanish case, indicating that 'The couple *should be encouraged to list the characteristics that they desire* in a prospective donor' (ASRM/SART, 2008: S36, my emphasis). In the case of the UK, the 6th Edition of the HFEA Code of Practice stated that 'Where treatment is provided for a man and woman together, centres should strive as far as possible to match the physical characteristics

physical features of the gamete donor with some of the gamete recipient, these features being eminently *observable*, thus according to what in scientific parlance is defined as *phenotypic*[158]. Characteristics that are usually matched include eye, hair and skin colour, blood type and Rh factor, ethnic background and height, among others[159]. In Argentina, the matching is always carried out by a practitioner and the patients have no formal means of choosing the donor they will get, although as I analyse below some patients attempt to intercede in how the physical coordinations are performed.

In relation to the phenotypic characteristics that are matched, it is clear that their stabilisation and standardisation as significant physical features is the result of a long series of historical practices concerned with classifying bodies according to their visible differences in order to understand the origins of such differences. Such categorisations have underpinned many political projects of reformation, segregation, intervention and also visibilisation of particular human collectives that have been promoted by interest groups as diverse as the criminologists and eugenicists of the 19th and beginning of 20th century, and patient association groups and pharmaceutical companies more recently. In effect, the long history of classifying people's appearances in order to comprehend the origin of physical differences between individuals and between populations, can be said to constitute a significant moment in positivist and eugenicist projects like that of criminologist Cesare Lombroso. In Argentina at the turn of the 20th century, the Italian doctor's investigations into the physical traits of known offenders were regarded with benevolent eyes by those ascribing

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and ethnic background of the donor [of gametes] to those of the infertile partner (or in the case of embryo donation, to both partners) unless there are good reasons for departing from this' (HFEA, 2003: 32). Notably, recommendations concerning phenotype matching have disappeared of the 8th edition of HFEA's Code of Practice.

[158] The Oxford English Dictionary (OED) defines *phenotypic* as that 'corresponding to *observable* characteristics of an individual, regarded as the consequence of the interaction of the individual's genotype with the environment'. Phenotypic. (2009). *OED*. Retrieved May 18 May, 2009 from OED website: http://www.oed.com/.

[159] Apart from these, one sperm bank in Buenos Aires lists body weight, 'physical type', and 'racial extraction' (*Cryobank*. (2009). Retrieved May 24, 2009 from http://www.cryo-bank.com.ar/principal.htm). One of the gynaecologists interviewed also mentioned having had requests from patients to carry out ethnic and religious donor-recipient matchings (for Korean and Jewish couples). Another practitioner reported patients' demands to select what she terms 'secondary traits' (i.e. size of the nose), and level of education, while she spontaneously carries out matchings of the shape of the face. I make sense of these differences further below.

to the positivist paradigm and engaged in eugenicist projects of reformation. They saw in these investigations useful knowledge on which to ground order in a young and troubled society (Di Liscia, 2007; Terán, 1987).

But the history of classificatory practices of the body does not end there. Recent years have seen, for example, a surge of interest in the genomic basis of human difference, and specifically of human racial difference, epitomised by efforts like the Human Genome Diversity Project and other similar projects, which have maintained the significance that 'race' has for science even in the face of worldwide scientific consensus regarding the biological meaninglessness of race (Reardon, 2004). These interests have usually been based, as Rabinow and Rose (2006b) note, on an old classificatory regime. As Jenny Reardon (2004) argues, this animated the scientific (Mendelian) classification of traits on the basis of their phenotypic aspect before the advent of molecular analysis techniques. In effect, rather than producing 'a new complexity', Rabinow and Rose see in this emergent 'highly sophisticated technology' the repetition of the core of '19th century's racial typology – white (Caucasian), black (African), yellow (Asian), red (Native North-American)' (2006b: 24, my translation). The implication is that despite the availability of increasingly advanced technologies for identifying the molecular markers of human similarity in substitute for the 'unscientific' methods (like physical appearance) used by 'the man on the street' (Cavalli-Sforza, quoted in Reardon, 2004), the old classifications are still very much around, and not (only) in the street, but also in the clinic. Such classifications inform, as Reardon and as Rabinow and Rose suggest, the reignited interest in human difference that is now being re-directed through the use of molecular technologies, which are also being re-deployed in current (post) disciplinary constructs aimed at identifying persons and regulating their circulation. An example of the latter is the European Union Directive's definition of what constitutes biometric data[160],

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[160] The document 'Opinion 3/2012 on developments on biometric technologies' (issued April 2012) identifies 'two main categories' of biometric techniques – physical and physiological, and behavioural. Among the first category, it lists: 'fingerprint verification, finger image analysis, iris recognition, retina analysis, face recognition, outline of hand patterns, ear shape recognition, body odour detection, voice recognition, DNA pattern analysis and sweat pore analysis, etc.' (European Union Directive, 2012: 4). As is clear, it incorporates in a continuous manner

a definition where iris recognition stands as both a prominent heir of the old physical classification techniques, while also superseding them (Kabatoff and Daugman, 2008).

At a fertility clinic, the person or couple seeking a gamete donation will be entered into what is generally called a 'Donation Programme', meaning that from that moment on the procedures carried out in them will be done in accordance with a certain protocol, the 'Donation Protocol'. As part of the fulfilling of the protocol, the practitioner(s) in charge will seek to build up a file for each donor and recipient involved. This file usually contains a medical history, the results of serologic, gynaecologic and genetic tests, a psychological appraisal[161], a form containing physical data, the corresponding informed consent forms[162], and a copy of the National Identity Document[163]. Once put together, files (or 'folders') represent patients' and donors' medical, legal and psychological persona in the clinic. Among the inscriptions that compound this profile or persona, two are especially important here. These are the phenotypic data form and the portrait picture, which work as mediators whereby the allocation of certain donors to certain recipients takes place.

Once folders have been prepared for each of the figures involved (donor and recipient), technical staff working for the Donation Programme will carry out the phenotype matching, that is, the allocation of a donor to one or several recipients on the basis of their physiognomic, including bodily and also blood-related, 'aspects'. With the help of photographs and physical data forms that record the physical appearance of donor and recipient, practitioners will select

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traditional forms of classifying the body (like face or ear shape recognition) with novel ones, like iris recognition.

[161] Although the inclusion of a psychological appraisal in the recipient and donor folder is recommended by SAMER's psychological chapter (Fernández et al., 2006), these recommendations are not followed in all centres.

[162] The number of informed consent forms signed by donors and recipients varies from centre to centre, but it can include up to five forms, which include those where consent is given to enter to the donation programme, to carry out genetic and psychological tests, to cryopreserve spare embryos, to receive donated eggs, and to have one's phenotypic and psychological background recorded.

[163] The National Identity Document (Documento Nacional de Identidad – DNI) is the document that ascertains the identity of all Argentine citizens. It is issued to a child on its birth, updated at eight years of age and re-issued at sixteen, when a photograph is included. Issuing is mandatory for all Argentine citizens.

and assign a phenotypically compatible donor who has all or some of the physical characteristics of the recipient. In the following, I look into how such assignations are made through the use of photographs and forms, and the implications that their enrolment has.

Photographs and the characterisation of persons

As can be argued from a number of contributions on the history and functions of photography (Sontag, 1977; Barthes, 1977, 1984; Clarke, 1992; Lalvani, 1996), photographs are material-semiotic devices which convey meanings by the virtue of having a material form, one which in turn enables their circulation through a number of space and time contexts. Taking into account such capacities, and looking at operations of procurement, styling, and content presentation, I suggest in the following pages that photographs may be said to have performative effects (this is, effects on the ways in which realities are brought about), once the phenotype matching provides the 'felicitous conditions' (Butler, 2010: 147) where such performative capacities are realised. In particular, I claim that photographs are material-semiotic enablers of an agency whose exercise helps to performate and stabilise the kind of that one who, through it, acts.

In studying the role that photographs have in bringing about physical appearance, nature and kinship, this section continues the work of a number of scholars who have reflected upon the significance of pictures for family constitution. For example Bouquet examined the 'visual rhetoric of kinship' (2001: 86) by looking at family photography in, among other practices, gamete donation. By analysing the photograph of Donalda, a girl conceived through donor eggs and photographed with her '50-plus' mother and the Italian doctor that performed the procedure, Bouquet explored the role of photographs in making and unmaking kinship, a point to which I return later in this section:

> (...) family photography can also be *associative*: persuasive, rhetorical. While the act of photographing requires a degree of dissociation, it also involves making or unleashing connections between people (...).

> Various kinds of kinship, then, are made to materialize through the visual techniques and conventions of family portraiture (2001: 86; 106).

Photography has also been studied in connection with family dynamics by other scholars. Susan Sontag, for example, stated that 'cameras go with family life', pointing to the role of photography in *testifying* the kinship links that unite members of a family: 'Through photographs, each family constructs a portrait-chronicle of itself – a portable kit of images that bears witness to its connectedness' (1977: 8). For his part, discussing a set of pictures of his mother as a young person, Roland Barthes reflected upon the importance of photography for family recognition and remembrance, particularly given the photograph's special status as the sign of that which 'has been there' (1984: 76); that is, both a sign of a past action and an emblem of truthfulness, a proof that the event really took place. Finally, Philip Stokes (1992) has explored the family album and the family photograph as apparatuses that display the competing demands of individuality and the collective. He has also called attention to how the photographs of the family on holidays may represent 'an archetype of visual memory' (1992: 201) whose function is to summarise an entire experience, where by representing the typical, pictures facilitate the act of remembering:

> It could be that one of the qualities of photography is the ability of the medium to realise the typical appearance of those sample slices of time, strung together like beads in the mind, that make up our memories (Stokes, 1992: 201).

These analyses of family photographing anticipate the work presented here by signalling the significance of the apparently banal act of family picturing. They have highlighted not only the importance of the photograph as a device that allows the evocation of past moments and the functional relationship that the photograph has thus with family remembering (Barthes, 1984; Stokes, 1992), but also how the family itself is partly constituted by the act of being photographed (Sontag, 1978; Bouquet, 2001). In what follows, I continue such analyses of the constitutive capacities of photographs by exploring the importance they have for constituting both the recipient and the donor.

Enquiring during my interviews about how the photographs of recipients and donors are procured, I was surprised to hear that recipients' and donors' photographs are not styled in the same way and have, moreover, different sources. In the case of the recipient's photographic image, it is mainly obtained through the recipient herself, who brings it in as requested by the clinic to make up the donor file. A practitioner explained:

> LA: (...) is it a photo in particular that they bring, or is it a photo...?
> No, *it's any photo they have*, we always try to make sure that it is current. *Maybe they are on the beach, or on a ship, or with a dog*, things like that, *they are family photographs* (…) Sometimes they say 'here is a picture with both of us [the recipient couple], then we have this one with him [the male partner], here is one with me [the recipient woman], and here is one with my four-year-old child, *look how he looks like me* (Gynaecologist 2, my emphasis).

Similarly, another practitioner also indicated that

> G: We are sent pictures by the couples [recipients]. And sometimes they send us [photographs] of *all the family...*
> LA: and what photos do they send? Do you ask for any photo in particular?
> G: [Emphatic] No. I ask for photos. And *they send you whatever*. It depends on the couple. They may send you anything ranging from an ID photo[164] to a photo with the family, to a photo of both [members of the couple]. [Taken] from a long distance, from close up ... photos where they *feel* beautiful, where they *feel identified*, especially the women (Gynaecologist 1, my emphasis).

These extracts show the particular way in which recipients' photographs are sourced in the clinic. In effect, recipient(s)-to-be are able to submit the photographs themselves, a fact that confers them some control over the style, framing and content of the photograph. As the quotations show, this participation in how the matching is performed allows for the production of family photograph collections or even almost family albums that depict the family as a collective recipient composed of individuals of varying degrees of closeness to the person(s) seeking conception. Moreover, such superposition of family moments represented by the collection of portraits ('on the beach, or on a

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[164] In the original 'foto carnet', refers to a small-sized photo where the person represented looks straight into the camera, usually used for different sorts of ID cards (driving license, institutional and club membership cards, etc.)

ship, or with a dog') may also be thought as a way of enabling the expression – or, better, the performation – of the individuality of the family, who thus becomes a recipient characterised by particularities.

Later in our talk, the practitioner and I discussed further the issue of recipients' photographs. She then said:

> G: If they send you a photograph of the family it's because in the family they all look alike, *so they are meaning to tell you 'keep this line'*. They all look very much alike...
> LA: the family, you mean the couple?
> G: yes, for example her parents, her siblings...
> LA: ah... you mean that family...
> G: yes, yes, *that* family, *their* families, from her side, or from his. *There they are willing to say* 'look, we all look alike, keep it more or less in this line' (Gynaecologist 1, my emphasis).

As in the extracts above, the practitioner says how she often receives photographs from other members of the family, while she appears to attribute some intentionality to such composing of family picture collections. In fact, she suggests that by submitting several photographs depicting not only the recipient-to-be but also *her family as well as his*, the photograph materially carries the agency of the recipients, who 'are willing to say' to the doctor that she sticks to a certain physical 'line' while she carries out the matching.

By contrast, photographs of those exchanging ova for fees are not sourced through the donors themselves, but taken inside the fertility centre by the practitioner in charge. According to a practitioner at one fertility centre, they are shot in a way that she described as '*just like that*, NID [National Identity Document]-style', where NID-style refers to the style in which the National Identity Document photograph is taken. This style is characterised by the subject posing in a standard posture, looking three quarters into the camera and with a strong background/figure contrast that both highlights the features of the figure while depicting them according to a template.

This positioning of the subject, the background and the 'photographer' in NID-styled photographs may be said to enforce the lack of compositional elements that encode idiosyncratic characteristics of the donor, while at the same time making certain features more visible by depicting them as standards. Indeed, it may be said that the donor's picture is both a form of deprivation of her most unique qualities ('just like that, DNI-style'), of standardisation (by enhancing comparability of selected traits), and of emphasising (by highlighting those features that will be specifically looked at, including skin, eyes and hair colour, height, body type, etc.). By accentuating what donors have in common, the photograph thus makes donors comparable with each other in relation to certain characteristics, while diminishing in a sense what is specific to each.

Likewise, a practitioner working at a different centre also commented on the way in which donors' pictures are obtained, also indicating that they were shot in the clinic. She said:

> G: The pictures of the donors, I take them myself...
> LA: in any style in particular?
> G: [Emphatic] no... *With the Blackberry* of a colleague, because I don't have one [laughs] (...) *it's just to have an idea* of how a donor looks the moment I have to call a donor, because I can't remember all of them...
> LA: is it in colour?
> G: yes, in colour... the colour of the hair and of the eyes...
> LA: these features that you were commenting...
> G: yes...
> LA: but, for example, this thing that you were saying about the pictures of the recipients... this [case] is different...
> G: yes, because *for the donors I only need to know this* (...) *with one photo it's enough.* And I take the picture here...
> LA: but then you don't want to look at the family of the donor?
> G: *no.* Sometimes they bring me photos of their children...
> LA: ah. And do you accept them?
> G: they show them to me, they don't leave them...
> LA: *and do you look at them?*
> G: *no. I don't pay attention to them* (Gynaecologist 1, my emphasis).

In this case, the practitioner indicates that the donor's picture is taken inside the clinic with a device (such as a mobile phone) that allows the main features to be seen clearly, yet at the expense of high resolution or quality, a fact that further points to how the donor's picture is likely to have no other use. Such an arrangement shows that the donor's picture is used only as a generic record of phenotypic traits, a complement to the phenotypic data form that visually registers the physical features of the face without attempting to include a great deal of detail. Moreover, in addition to this deprivation of idiosyncratic characteristics that takes place in/through the donor picture, the practitioner tells me that even when the donors bring photographs of their family, she does not pay attention to them, as specific phenotypic data is what she 'only need[s] to know' and so therefore for her 'with one photo it's enough'.

As the extracts above show, the pictures of recipients and donors that are used to match their phenotypic characteristics are obtained in very different ways. Yet what do such differences entail, or, better, what is their effect? I suggest that the noticeable opposition implied in family-styled versus NID-style or mobile phone-styled photographs may be regarded as enabling different tasks for the photographs to perform as kinship-producing devices. In fact on the basis of the description above it might be possible to claim that the photograph is one of those devices through which figures and acts become constituted as of particular kinds. In Chapter 5 I claimed that the exclusion between altruistic and commercial acts was shown to be a sociotechnical performation rather than the result of pre-existent psychological motivations to act in a disinterested or economically-driven way. In consonance with these claims, I now suggest that the participation of the photograph in the matching is one further instance of the constitution of the donor and the recipient as distinct figures defined by their degrees of kinship with the donated egg or sperm. In this, I argue that rather than acting in a certain way by virtue of what they 'are' (i.e. donating because they are donors, altruistic persons, etc.), 'donor' and 'recipient' are the result of sociomaterial investments by which people effectively 'act' in terms of their external appearance and therefore come to be. Such performation, which needs to be understood as taking place through/in the phenotype matching, does not necessarily presuppose that the characters (donor, recipient) constituted are definite, substantive, or exhaustive (i.e. that the persons constituted are so constituted completely, and once and for all). It presupposes only that such a constitution is only effective in the context of the matching, or the felicitous condition, whereby the visual statements uttered and materially circulated by the photograph performatively shape (temporarily and for the time being) kinship and being. But how is this done?

First, as I have explained above, those who are to be performated as recipients choose their own photographs, an arrangement that I suggest is part of the enactment of procreative intent and therefore of the performation of a person as a recipient. In other words, by getting to choose their own pictures and therefore asserting those phenotypes which should be resembled in future offspring, recipients are enabled to enact the will to entangle a child in a certain family and a certain phenotypic appearance, 'just as' would happen in the case of procreating without recourse to technology. Such enactment of voluntariness is of course constitutive of the acting agent herself, while the purposefulness represented in the choosing of the photographs is part of a material arrangement through which the will to procreate is enacted and stabilised as part of the disentanglement of figures whose status should not be confused, as are the recipient and the donor. The acquiring of purpose through the act of choosing photographs is thus not only constitutive of the recipient, but also an investment through which figures are characterised (equipped with a character) and thus strategically differentiated from others, who are enacted as lacking such initiative.

This enactment of intent, which can be paralleled to that taking place through the signing of informed consent forms whereby recipients acquire procreative will and thus get constituted as recipients, contrasts with what happens with the donor. In this case, the person who will perform as donor is not asked to bring in her own photograph to the matching; that is, she is organisationally deprived of the possibility of enacting procreative intent and the will to entangle a child resembling her and her family's appearance. Moreover, where the donor-to-be attempts to participate, for example by bringing photographs of herself, the practitioner (acting as representative of an institutional arrangement) rejects that possibility by not looking at those pictures. Notably, this investment where not only the donor-to-be does not count as provider of her image, but also her image is refused in the case where it is furnished (rather than requested), can be said to enact the figure of the donor as that person whose mode of participation in the matching involves the willingness to accept the restrictive conditions under which her presence is required.

Second, in addition to performating the donor and the recipient as part of the institutional arrangement of procurement, the content and styling of the photograph also function as material enablers of the performation of the recipient and donor. In effect, as described above, the investments of the clinic allow for photographs of recipients-to-be to depict the latter in mundane situations like holidays and strolls with animals, often in what can be described as a 'family album style' where different members of the family are represented in the typical postures of such style (Stokes, 1992). Here, the recipients' picture can be said to materially enable the constitution of the whole family as recipient of the egg, insofar as relatives of the persons who will perform as parents also get to be represented, and thus looked at, in the picture. This effect is evident when the interviewees recount how the partner of the woman who receives the egg, her family and that of her partner, as well as their offspring are depicted in the pictures. The picture thus acts as a material and semiotic enabler of agency, like the will to present oneself and certain relatives to the clinic, to do so in a particular way ('feeling beautiful', on a relaxed journey), and to make patent the physical resemblances that unite the family ('look how he looks like me!', 'they are meaning to tell you "keep this line"'). This agency is of course previous to the existence of the agent herself and enabler rather than expressive of the latter, while the photograph performs as the material-semiotic device through which persons can act and therefore become distinct kinds (in this case, recipients).

Yet by acting through the photograph which performs as a device in the investment of phenotype matching, persons get constituted as recipients, but also as donors. In effect, whereas in the case above the figuring of the recipient and her family in the photographs, in especially chosen situations (holidays, strolls) and featuring specific states (beauty) can be said to invest subjectivity and individuality in the figure of the recipient, the opposite seems to happen with the performation of the donor. Here, the donor is enacted through the erasing of individuality, or, to be more precise, through her featuring only as a particular generic kind. Taken with a Blackberry or alternatively in a NID-style, always inside the clinic and never by herself or her family, the photograph of the person agenced as a donor is constitutionally deprived of any particularity that is not the specific combination of the generic traits she exhibits and for which she is chosen to perform as donor. Here, the style in which the picture is forged (the de-individualising bureaucratic layout of an ID picture, the detail-divested result of a mobile phone photograph) adds up to the dispossessed conditions of its procurement analysed above (the fact that the donor cannot enact herself as with procreative intent), and are joined by a content where only the donor and nothing but the donor is presented (excluding, in contrast with the case of the recipient, her family, her life, her holidays, or the strolls she might have taken with her dog).

Such a conjunction of style, conditions of procurement and content works to performate the donor as a character who is not 'unique', but only happens to exhibit certain physical characteristics. This further materialises the sociotechnical disentanglement of the person who becomes a donor of the conditions of her life, and thus prevents the passing on of such conditions to the child of the recipients. Through this material arrangement the donor becomes constituted exactly as that one who is *nothing* but the donor of a cell, a generic resource insofar as there may be others equally equipped (in the double sense of possessing the necessary phenotypic traits and having been agenced) to act in the same way, a result which is denoted in the practitioner's talk (the photograph of the donor 'is just to have an idea', 'with one picture is enough').

According to the above analysis, then, recipients and donors are figures materially brought about in/through the phenotype matching arrangement understood as a sociotechnical investment. Crucial to this immanent characterisation is the differentiated participation of photographs, a dissimilarity that allows persons to become as of distinct kinds in close dependence on the equipment through which they are made to act. In the next section, I look at another participating device of the matching, the phenotypic data form, whereby people are further characterised by performating the nature of present and future bodies.

Phenotypic data forms and the performation of colour

Like the photographs discussed above, phenotypic data forms are devices used to record the appearance of a person. They can have a paper or electronic format, yet the two practitioners interviewed on this topic were using a combination of paper and electronic forms to perform the matchings. Typically, a form will have a human body part as a headline (i.e. 'eyes'), listing table-wise categories that predicate this part (blue, green, brown, etc.). The practitioner in charge will use these categories to translate the physical appearance of a person into paper format, so that such appearance can be recorded for future use (for example, when the person is no longer physically present in front of the practitioner).

Simple as this procedure may seem (the banal act of looking with some attention at how a person 'looks' and filling out categories on a form), it implies several forms of knowledge and several translations that may not be immediately evident. In fact, relying on pre-designed forms to perform physical coordinations may not be at all a simple endeavour, if 'simple' is to be understood as an activity with no mediation. I ask one of my interviewees responsible for carrying out matchings at one clinic what categories she uses to coordinate people's phenotypes. She answers that some characteristics are more important than others, making a first differentiation between complexion[165] colour and hair and eye colour[166]. With regard to the first feature, she tells me that the forms classify categories into white, matt[167], light brown[168] and dark brown. I want to know how she is able to recognise such differences, since I am myself not so sure about how to make such distinctions. We then discuss:

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[165] Although the colour of the skin of the face is the prime focus of attention, skin from other parts of the body (arms, legs) is also taken into account. I explore these differences further below.

[166] I gather from my talk with the doctor that further differentiations follow down the line, distinguishing between primary and secondary traits. The first ones are related, I believe, to colours, the second ones to 'shapes'.

[167] In Argentinean Spanish, 'mate' (matt, matte) may be used as a colour to describe a shade of brown, although, as it is characteristically imprecise, what shade exactly the colour matt refers to is very difficult to establish.

[168] The practitioner uses the term 'moreno' which might be better translated as 'dark', yet I have chosen to translate it as 'brown' to be able to qualify it as either 'light' or 'dark'.

> LA: And which are the categories of the skin? How do you *divide* them?
> G: white complexion...
> LA: what would that be?
> G: *us*. White complexion, matt complexion, light brown and dark brown...
> LA: aha, they are many...
> G: brown *I* divide it into two, light brown would be for example a Latino, and dark brown would be an African. *In a certain sense, that is the idea that I have of it*. But the skin is brown...
> LA: and what would matt be?
> G: matt is something in between a Latino *and us*. *Is that skin that when it's exposed to the sun becomes golden? I* become red. The one that becomes golden? It's that skin (Gynaecologist 2, my emphasis).

The practitioner's explanations regarding her entanglement with the form illustrate how the form is actually used in the clinic. As the quotation shows, she relies heavily on her experience as a person, a member of a wider social group and not strictly of the medical discipline, to understand and deploy the categories given in the form. The formal classifications white, matt, light brown and dark brown need to be understood through her familiarity with social categories like African and Latino, and connected to her own experience of whiteness that enables her to attribute 'white' to 'us', to function as entities with meaning; it is her wider experiences, and the internalised disposition to make distinctions regarding people's skin colour, that facilitates her meaningful and efficient appropriation of the form's categories. She acknowledges such interaction with the form when she explains that qualifying formal categories through social categories is 'the idea that I have of it'.

The above shows that the categories present on the form are not capable *by themselves* of providing a definitive substratum of intelligibility with regard to the characteristics that will be looked at in the matching. On the contrary, the use of forms may be described as *technical* (Latour, 1999) or sociotechnical (Callon, 2010) insofar as it very much depends on a human/device *interaction*. The mere availability of categorical colours on a phenotypic data form is not enough to ensure that the practitioner is able to understand them and thus select them in the form as the exact colour pertaining to the person. Rather, the categories on the form need to be interpreted, that is, they need to interact with the practitioner, in order to make sense to her.

Why is this the case? The answer lies in what the form represents. In effect, forms are a form of abstraction of data which appears combined and in a continuum in people's appearance, the latter both taken individually and in terms of population (facial features appear combined in a person's face, yet they are also part of a continuum in a group or population, a continuum that, for example in the case of colours, covers the infinite brachiations of white and black). As a form of abstraction of the phenomenological, the type of information contained on the forms is primarily related to their ability to categorise a continuum of data into discrete entities. Yet because their purpose is in a sense to enable comparability and reduce complexity, forms rely on specific losses of information, namely those related to the continuum of colours, a continuum which can be said to be one of the bases for a person's singularity. It is in this sense that forms can be understood as a categorisation, a representation of information through division and differentiation. Thus the recording of information by way of loss, difference and division (that is, the avoidance of juxtaposition), operates in a way similar to what Martha Lampland (2010) calls 'false numbers', insofar as the functionality of such representation depends less on its accuracy than on the formalising endeavour it facilitates.

According to the above, the form records in a highly abstract way a person's singularities, thus in a sense divesting their appearance of such singularity and converting it into a specified abstract, the specific combination of general and repeatable qualities. It is categorical not only because it displays categories, but also more accurately because it displays them in a manner which deprives them of quality, that is, of distinction or singularity, where exceptions and continuity between colours as they materially manifest themselves in people have been erased. In this sense, then, the categories on the form are unqualified qualities[169], units plainly differentiated from the others or, as I mentioned during

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[169] One of the definitions of 'categorical' provided by the OED is 'Asserting absolutely or positively; not involving a condition or hypothesis; *unqualified*' (my emphasis). Categorical. (2012). *OED*. Retrieved August 10, 2012 from OED website: http://www.oed.com/.

the interview, *divided*, and thus lacking the specificity connected with the continuum of colours.

Returning to how the practitioner interacts with the form, then, insofar as the categories in the latter are abstract and in that sense unqualified, generic forms that summarise a specific trait but in no way the singularity of a person, those categories need to be interpreted, brought down to the broader, non-medical experience of the practitioner, in order for the form to be deployable as a participating agent of the matching. That is, the abstract quality of the categories of the form hampers their self-evident-ness and presupposes the participation of the practitioner, who by informing the categories with familiar examples ('white [is] us', 'matt is that skin that (...) becomes golden') actively enrols the form (but also herself and me) in the matching.

Yet what are the consequences of this enrolment, or participation – via the practitioner – of the form in the matching? Notably, that the practitioner is also transformed in her way of looking at people. In effect, once the categories on the form establish (hence prioritise) the traits that need to be looked at and the variance through which their appearance will be apprehended, the practitioner 'looks' in a sense as if she herself were a form, embodying a categorising form of phenotypic capture. She then tells me, for example, that

> You reach a point when physical characteristics are like a standard, right? Noses of a certain shape, face angles of a certain shape (...) They are standards that are repeated, it's noses that are repeated, it's cheeks that are repeated (Gynaecologist 2).

The above highlights the double sense in which the participation of the form in the matching signifies. As an example of a *technical* (Latour, 1999) interaction between the human and a device, or as a form of agencement where human and device have a concerted action (Phillips, 2006), the enrolment of the form in the matching implies the mutual dependence, and modification of the capacities, of both human and practitioner. This means not only that the abstract categories of the form order the world in a manner which is un-deployable if they are not mediated, related to other form of experience which in this case is that of the practitioner, but also that the categories in the form *order* the world, that is, that they bring abstract difference, hierarchy and distinction into it.

What are the consequences, then, of this agencement? Again, these are double. First, because the form *categorises*, its participation implies that the nature of bodies which are created in/through it comes as normatively divided, that is, it is performated as being distinctly white, *or* matt, *or* light brown*, or* dark brown. Through the participation of the phenotypic data form and its abstract and detached categories, the sociotechnical investment of the phenotype matching normatively (re)produces bodies which thus have been performed as embodying difference. This performation implies hence the reproduction of the difference of bodily colour as a characteristic of the Argentinean population. This means that, as I will show later, although random genetic recombination is enthroned as one of the ways in which nature works, the production of colour difference, which in Argentina is of particular importance, is not left to chance. Rather, by producing family colour coherence as part of the production of kinship links and filiation, nature is produced as being defined by difference and neatly discriminated divisions that speak of distinct kinds of people.

Second, because the colour of people's skin connotes the difference of distinct kinds, the abstract categories of the form not only performate difference between people, but also the concrete qualification of such difference (white skin is 'us'; light brown is 'Latino', dark brown is 'African'). In this, nature comes not only as abstractly divided, but also as carrying meaning and a principle for identity ascription on the basis of such division, and works thus as a ground for making distinctions between people. The result is that the abstract categorisation and deprivation of singularity enhanced by the agencement with the form (re)produces forms of concrete singularity and qualification which are the basis for identification (the production of filiation between offspring and its parents) and differentiation (those who are not 'us').

Having shown the ways in which material devices like the photograph and the phenotypic data form perform normatively in the clinic, I examine in the following section two other examples in which nature is materially enacted as part of the production of physical resemblance and of the formation of families.

I argue that while the phenotypic matching agencements are oriented to enacting what are taken to be some of nature's core norms, further forms of nature differentiation and preservation are also performed that are particular to Argentina. I look at such examples in the section below.

Mixing, inheritance and preservation: the nature of white

As I have shown above, the matching of the phenotypic characteristics of donors and recipients is a form of performating the nature of future bodies, which through the use of the phenotypic data form comes out as characterised by both abstract division and concrete qualification. In the following pages, I show two other ways in which nature is normatively produced in the clinic by focusing on the enactment of what are taken to be two central norms of nature. On the one hand, the concatenated rules of capricious mixing and genetic recessiveness; on the other, the inheritance of genes from parents.

Further discussing the ways in which she performs in the clinic, the issue of the colour of bodies reappears in our talk with the practitioner. She has already told me that of all the characteristics that are taken into account to carry out the matching, the shades of the skin are the most important, pointing to the precedence this feature has as a marker of filiation in contrast to other bodily characteristics. I ask her who taught her how to look at the donor, since it must be difficult to be able to distinguish between subtly different colours of the skin. She clarifies:

> G: at the donor and *at the recipient. Because maybe the recipient doesn't ask that her donor is of white skin, but you see that the recipient is of this colour* [points to the colour of her own skin] *and you say 'I can't assign a donor with brown skin to this recipient'*. So then I accommodate it for me in some sense, I *make a note somewhere* that she [the recipient] is very fair, so that I know when the assignation time comes that I can't give her a dark donor...
> LA: so even if you are not asked to, you do it...
> G: yes, *it is a matter of logic* (Gynaecologist 2, my emphasis).

She makes it clear, then, that it is not enough to look only at the donor, not only because the matching is of the characteristics of both donor and recipient, but also – importantly – because sometimes the recipient 'doesn't ask that her donor is of white skin', but – being a fair-skinned recipient – the practitioner 'can't assign a donor with brown skin' to her. What is implied in this clarification? On one side, as is clear, that bodily colour coherence needs to be normatively enforced even if it is not demanded by the recipient, so that recipient's and offspring's bodies come out as coherent. Yet what does such enforcement represent, together with the attention paid by the practitioner, her effort to 'make a note somewhere' and to 'accommodate it [for her] in some sense' that she should not assign a dark donor to a fair recipient?

Her answer is illustrative of some of the ways in which what are taken to be nature's norms are instantiated, and the results of this. In effect, by indicating that 'it is a matter of logic' that a dark donor should not be assigned to a fair recipient, the doctor is not only enforcing bodily colour parent/offspring coherence; she is also enacting the law of genetic recessiveness inasmuch as it is known that a dark set of genes will be dominant over a white set. Such an answer exemplifies the ways in which what are taken to be nature's intrinsic norms, that is, in this case, that certain genes are dominant over others, are upheld. The practitioner has referred to these laws at other points in our talk:

> In the general population, blondness and blue eye-colour are much less frequent than dark with brown eyes, because genetically it is like this because it is expressed as recessive (…) We always try to respect what they want, [yet] how the genetic combination between the donated egg and the partner happens, it goes beyond us, it's Mendel's law, it's law of genetics, it doesn't depend on us (Gynaecologist 2).

By avoiding assigning a dark donor to a fair one, the practitioner appears to be trying to uphold two laws of genetics and therefore to be enacting natural norms, namely that of the randomness of genetic recombination, and that of the recessiveness of certain traits. The claim that 'it doesn't depend on us' is an instantiation of the restraint concerning the attempt to control how genes will combine (since they will combine randomly), thus being both an enactment of nature as something which is beyond human control, and of the human (doctor) as respectful of how nature works. Similarly, the clarification that 'it's a matter of logic' that brown should not be assigned to white, points to sustaining the natural norm of the dominance of certain genes.

Yet this enactment of genetic laws is coextensive with other productions of nature. In fact, by letting nature do what it does (recombine randomly in the fertilised egg, not express recessive traits when they are combined with dominant ones), the practitioner is also fostering the (re)production of certain traits (namely, of whiteness), hence facilitating their preservation or protection in the constitution of a future body. As an effect of *particular* avoidances (assigning dark to white) rather than of multiple ones (avoiding giving white to dark as well as dark to white), the nature of white is preserved or the nature of bodies who are expected to reproduce in white is protected from coming out dark. This unidirectional sense of avoidances, which was overriding in the examples that I was given, works then not only to enact genetic laws and with them nature as something which is respected, but also to preserve the presence of whiteness both as a trait passed on from parents to children, and as a valued characteristic of Argentina's population.

Another example illustrates how the norms of nature are normatively upheld and the coextensive productions that result from this. Trying to find out more about how assignations happen in the clinic, I asked about rare cases and so we held the following dialogue:

> LA: Has it ever happened to you that a couple or a woman comes and they ask for characteristics that she doesn't have?
> G: yes, it happens...
> LA: that she does not look like that and she asks for.... And what do you do in those cases?
> G: well, *you try to dissuade her, or you tell her that she will have to wait*. But in general *we don't pay attention to that*, we don't pay attention to that...
> LA: but do you tell her that you will not be looking for something like this?
> G: we try to tell her and we try to make sure that her main doctor convinces her before she reaches us that no, *because she is coming to look for a baby*, *she is not coming to look for a prototype of anything* (...) I personally I don't agree. *Because she is coming here to look for a baby. You can't ask for something that you are not.* (...) *If I am dark-skinned, black, very black, with frizzy hair as Black people have, and I am seeking a baby that is of German descent*, what is the point...? To feature in a debit card ad? *No, it doesn't exist* (Gynaecologist 2, my emphasis).

Here again, as in the example above, the practitioner's answer is illustrative of how nature is normatively enacted in the clinic. Asked if patients demanded characteristics that they themselves did not have, the story of the scolding answer that patients may get if they do so shows how nature is produced by preventing people who does not possess certain traits from having offspring with those traits. In the example above, the rejection of the figure of the prototype, in opposition to that of a baby, embodies the opposition between an interventionist and non- (or less-) interventionist model for the relationships with nature, where the first one is rejected and the second one sustained. Such opposition, which conflates modes of moral and scientific reasoning (the imperative form 'You can't ask for something that you are not' condensing both a moral reprimand and a genetic impossibility), enacts in effect a particular model of nature by which nature is taken to be maintained. This is the genetic law of inheritance, that is, that unless the genes are present in the parents, offspring will not be able to inherit and thus express them.

Yet what does the production of such coherence entail? As in the example above, the particular avoidances through which the genetic law of the inheritance of traits is enacted also speak of preservations that are immanent to the enactment of the laws of nature. In effect, as an illustration of the general rejection of the figure of the prototype and the possibility that parents choose what their children will look like (a choosing that would entail violating the natural norm regarding the passing on of genes, but which would also be considered immoral), the practitioner asks 'if I am dark-skinned, black, very black, with frizzy hair as Black people have, and I am seeking a baby that is of German descent, what is the point...?'. The fact that her question poses the possibility that a baby with light skin is created for someone with dark skin also gives away the particular forms of coherence that are sought after in Argentina, where white is made to come only from those who are white, in a form that enacts the preservation of those of a certain kind. In turn such preservation, which is done as part of the rejection of the figure of the prototype, paradoxically reinstates white as the prototype of Argentina's population.

Above I have offered two examples in which what are regarded as being intrinsic norms of nature (the random character of genetic recombination and the fact that nature has recessive genes, and the need for parents to possess the genes in order to effectively pass them onto their children) are instantiated as part of the practices of phenotypic matching in the fertility clinic. In doing so, I have also explored how the enactment of nature's laws is coextensive with forms of preservation of certain kinds of people, hinting at the importance that such preservations might have in Argentina. In the last section of the chapter, I look into the history of the formation of Argentina's population and the meaning that such preservations of white colour might have in relation to it.

'*In Argentina...we are all of White race*': producing physical coherence in a 'European' country

As the paragraphs above have started to show, coordinating the physical appearance of parents with future offspring has effects with particular meaning for Argentina. These effects, which are arguably the result of normative self-imposed ways of practising medicine given that the field remains largely unregulated, are explored in this section according to a broader view that depicts them in connection with the history of the formation of Argentina's population.

Argentina is also a country of immigration like the US and the UK, and to a certain extent Spain, as examples of three places where physical coordinations also take place. Its main population intakes were Spanish, Italian and to lesser degree French immigrants, as well as a smaller number of other Europeans, who by the first fifteen years of the 20th century had given Argentina a third of its population. This percentage had risen by the same time to a considerable 50% in the capital, where around 20% of the country's population lived (Vázquez-Presedo, 1971)[170]. The ubiquity of immigrant population in Argentina and Buenos Aires, especially at a moment of political consolidation and economic

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[170] Another way of understanding the significance of these numbers is to consider them in relation to a longer period of time. As Pantelides and Moreno (2009) state, between 1870 and 1915, the total Argentinean population went from 1.9 to 8.3 million people. This increase shows an average annual rate of 3.3 percent during 45 years. In the City of Buenos Aires, the average annual rate was higher than 5 percent during 1887-1915.

expansion as Argentina became known as the 'granary of the world', helped to sustain local narratives of the 'Europeanness' of Argentina's population. As Andrew Lakoff (2005: 6) has noted, this trope is one that made members of the Argentine elites and middle class see themselves as 'Europeans in exile'. These ideas have pervaded commonplace discourse about the origins of Argentinean and Buenos Aires's population, in part due to the continual economic and cultural subjugation of native Indigenous groups, and the relative invisibility of other immigrant parties of considerable numerical importance (mainly Middle Eastern), and it is even today that Argentines identify themselves as of largely European origin.

The facts above are important in the light of the reluctance on the part of some practitioners to attribute 'sense' to the practice of physical matching in Argentina and, as I examine below, may well explain the pervasiveness of the practice (despite its frequent undermining), as well as the particular ways in which it takes place. In the following, I explore these contradictions in relation to the perception of Argentina's population.

For some practitioners, in effect, phenotype matching was a 'no-sense' practice in Argentina. When discussing the rationale and reason for practising physical harmonisations, some interviewees pointed to the 'unnecessary' character of the matching. For example, on one occasion where a practitioner and I were discussing what characteristics were taken into account in assigning a particular donor to a particular recipient, the doctor being interviewed immediately focused his answer in terms of the composition of the Argentinean population, stating the commonplace assumption about its White origins:

> LA: But do people ask for this [characteristics like knowing how to play chess]...?
> G: *no, no, no because particularly in Buenos Aires the majority of the population is of white race and of different ethnic origins*. If you say New York where there is a twenty percent of Yellows, twenty percent of Blacks, twenty percent of Caucasians... well... there, more or less... for a Black couple you have to find a Black donor; a Japanese couple is more difficult because there aren't so many Japanese. But in Buenos Aires you may be *more whitey*[171] *or*

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[171] I have chosen to translate for 'whitey' because it retains the possibly derogatory use by the practitioner, who uses a diminutive form of the adjective 'white' ('blanquito'). Although use of diminutives in Rioplatense Spanish tends to indicate pejorative intention, it can also denote

> *less whitey* but at the end of the day *we are all of white race* and of different ethnic origins (Gynaecologist 4, my emphasis).

Another practitioner reasoned in a similar way, emphasising the European origins of Argentinean population:

> The matching *is something relatively* simple in our population. *We don't have ethnic donors.* Therefore, most of our donors have a European ascendance. By European I mean Spanish, Italians.... Europeans. [Some are] more from the North, from the East... from the Centre. So some have these specific physical traits (...) So the issue about the donor, about the matching, *is more important in places like the US, where there is a multiraciality.* Because there are donors whose mother was Iraqi and the father, I don't know, Mexican. Or the father Belgian and the mother, I don't know, Vietnamese. So between the Asians, the Blacks, the Hispanics, and the Caucasians or Saxons, whatever they call them, the *melange* is important. *Therefore, the matching has sense* (Endocrinologist 1, my emphasis).

These quotations illustrate the prevalence of narratives of European whiteness in relation to the process of nation-building among middle and upper classes of Buenos Aires. In these accounts, Argentina's – and especially Buenos Aires's population – is different to that of New York, two cities that are frequently compared, among other aspects, with regard to the number of immigrants they received during the last part of the 19th and first part of the 20th centuries. If in New York one expects to find 'Yellows', 'Blacks' and 'Caucasians'[172], in Buenos Aires 'we are all of white race' and there are 'no ethnic donors', statements that the doctors took to justify the apparent lack of importance of phenotype matching. This discourse makes the colour of skin a marker of a single 'race' that has purportedly contributed in a greater degree than others, marked as 'ethnic', to the conformation of Argentina's population, which appears therefore as not expressing a 'multiracitality'.

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smallness in size or other qualities, or conflations of both meanings. I have opted for retaining the first meaning given the implausibility of a reference to smallness, but I am ultimately unable to identify the original intention of the speaker.

[172] I retain the possibly pejorative connotations of these denominations as indicative of the broader meanings they carry in everyday use in Rioplatense Spanish. Notable in the use of these categories is, moreover, the way in which they a-problematically replicate 19th century racial categories, as more broadly suggested by Rabinow and Rose (2006b) for medicine in general.

Such narratives of the nature of whiteness were not uncommon during the interviews I carried out with staff at fertility clinics in Buenos Aires, and patients' purported disregard for feature and background harmonisation that staff reported was frequently linked to such ideas of homogeneity. Yet if phenotypic coordination lacks any relevance given the purported European origins of Buenos Aires's population, it remains to be explained why it is actually performed so uniformly across this particular reproductive field.

One answer is of course that the physical harmonisation is only done out of routine, a repetition of an habitual practice possibly inherited from ethical and medical frameworks of the North[173], where it 'has sense'. This is certainly one possibility, and the above quoted extracts seem to point in that direction, as does the rather exasperated answer I got from one of the doctors when I once again pushed the question of why, being so irrelevant, are phenotypic matchings performed:

> E: I am one of those who think *that the matching is not so important*....
> LA: Oh, I see.... but why is it done then....?
> E: So there is some *cultural social* homogeneity....! I don't know... so that your kid is not Vietnamese, or Black, and then how do you explain.... (Endocrinologist 1, my emphasis).

Other testimonies from doctors working in the field, however, may also point in a different direction. Here, the matching acquires sense in relation to widespread forms of phenotypic and ethnic appreciation, some of which enact potent and frequently open forms of discrimination. As some practitioners say,

> Differences in skin, eye and hair colour between parents and offspring from donated gametes are [emphatic] *the nucleus of patients' concerns* (Gynaecologist 5, my emphasis).

> LA: Let's go to the topic of the phenotypes, you were telling me that there is a sort of coordination....

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[173] Judging from the examples mentioned above (Spain, the US and the UK), guidelines recommending ethnic background matching seem to have been developed in explicit reference to the ways in which transnational immigration and concomitant racial issues have developed in those countries. The fact that in Argentina matchings may be partially a legacy from such frameworks is reinforced by the very name of the practice, since it is most commonly alluded as '*matching* (in English) fenotípico'.

> G: Well, it is [emphatic] the issue of donation (...) There are women *who have deeply entrenched the issue of descent and the colour of skin, and the colour of the hair and of the eyes, and maybe they come from Italians or from Jewish* or from whomever it is, *and they won't accept that their baby doesn't have the same characteristics as them* (Gynaecologist 2, my emphasis).

In these extracts, doctors report the preoccupation of some patients with ancestry and its inheritance in the event of gamete donation, a preoccupation that in the opinion of practitioners triggers the search for physical continuity between patients and their children ('they won't accept that their baby doesn't have the same characteristics as them'), as the basis for the acquisition of identity and belonging ('they come from Italians or from Jewish'). Such preoccupations may be interpreted as part of the link that Peter Wade (2009) identified between appearance, race and kinship, and similar to Thompson's finding that 'genes have social categories built into them' (2005: 181). They speak of a racialised (and classed) kinship system where the reproduction of aspects that are taken to be genetically transferred and bodily expressed ('the issue of descent and the colour of the skin (...)') is thought to be linked to the passing on of cultural identity and race ('Italian', 'Jewish').

The above shows that nature, or the biological expression of certain features, is understood to take part in the constitution of a person as belonging to a particular cultural identity, and thus different from others. In stark contrast with the 'we are all of white race' discourse that seems to undermine the importance of features that are biologically expressed for cultural belonging in Argentina, the fact that patients express concerns over the physical appearance of their offspring may be understood instead as part of the preoccupation with the passing on of biological traits which code for particular cultural identities. Moreover, such 'passing on' may be thought to be especially significant given the degrees of genetic admixture that have taken place and that, giving Argentina its characteristically (yet profoundly unacknowledged) mixed population, are today the basis for the making of distinctions between kinds.

In effect, according to recent studies, contemporary Argentina's population is largely of mixed ancestry, one that narratives of homogeneity, whiteness, and European origins tend to obscure (or maybe 'whiten'). If Argentina was too far down the main axis of Spanish power and settling patterns to register the degrees of admixture that took place far North between Spanish, Indigenous and Black groups during the long colonisation period, that mixture is however still characteristic of Argentina's population[174]. Moreover, after the end of the three centuries of the Spanish colonisation of the Americas, new admixtures further complicated the homogeneity of the population, with the addition of a new wave of European immigration during the last part of the 19th century and beginning of the 20th, the internal economic migrations initiated in the 1940s (composed mostly of people of native population origin), and the immigration received from border countries from the 1980s onwards, which is also mostly of Amerindian origin (Avena et al., 2001).

Narratives of the prevalence of European whiteness do not only fail to take into account such admixtures, but also reproduce their subordinate role in hegemonic representations of the country, where widespread *mestizo/a*[175]

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[174] A 2001 study of two different hospital blood samples in Buenos Aires showed an 'Amerindian' contribution of 10.5% (N=13.217) and 15.9% (N=202) to the respective blood samples, and an 'African' contribution of 1.0% and 3.3.% respectively (Avena et al., 2001). Fejerman et al. (2005) also concluded that 2.2% of the genetic ancestry of the population of the City of Buenos Aires is derived from Africa. Despite the questionability of methods that are based on enrolling material carriers (alleles) as markers of 'race', the indigenous composition is fairly visible in vast numbers of the population, whilst the African contribution is phenotypically uncommon. Needless to say, I do not want to endorse the intrinsically problematic character of a possible genetic determinant for 'race' or 'ethnicity' based on detection and prevalence of specific alleles in blood samples. Feminist thinking has profoundly questioned the role of biology in making truth claims about what it terms 'natural facts' (cf. Martin 1991; Haraway, 1997). My intention here is to show the extent to which local debates about the composition of Argentinean, and particularly Buenos Aires's, population seem to problematise discourses of a largely European ancestry.

[175] Strictly designating a person born from Indigenous and White, *mestizo* is usually employed in the Latin American region to name a person born from people of different ethnic origins (typically mixtures of White, Black and Indian). A great deal of scholarly work has gone into defining *mestizaje* in Latin America as a nation-building ideology (Wade, 1994), and some authors have also worked on *mestizaje as* a lived experience that operates within the embodied person (Wade, 2005). Although I do not contest the significance of these two dimensions for processes of nation construction in the region, my point here is different insofar as the hegemonic nation-building ideological discourse in 19th century Argentina was that of European ascendance rather than *mestizaje*. In effect, divergent opinions over sensitive issues like immigration were voiced during this period, yet the debate was dominated by representations that opposed the qualities of native immigration to those of European origins. Domingo Faustino Sarmiento's classic, *Facundo: Civilization and Barbarism* (first version in Spanish published in1845) is undoubtedly the most salient example in this regard, significantly framing all successive debates in terms of a preference of European ('civilization') over native

phenotypes are subsumed as contributing less in both numerically and cultural terms. Such representations are the result of the sedimentation of archetypical representations of the European immigrant as 'improving' the native population of the country, consistently depicted as lacking education and motivation, showing backwardness, etc. In particular, internal migrants to Buenos Aires who started to arrive in the capital city with the emergent industrialisation of the 1940s have been the object of much racial and derogatory labelling through everyday language, as in the use of terms like 'little black head' ('*cabecita negra*'[176]) and 'whitey' quoted above[177].

This history suggests that there is more at stake in narratives of European whiteness than the immediately evident, and portrays a different picture regarding the use of phenotype matching implied in ideas of it as a 'no-sense' practice. If, as Wade (2009) has asserted, kinship is important to understanding race, then race is also important to understanding kinship, insofar as both 'imply notions of inheritance, both 'natural' and 'cultural', for which the most crucial means of transmission is the family, at least in Euro-American kinship' (2009: 2). As the preceding quotations have shown, if biology is acknowledged as a basis for belonging both to family and to a particular cultural identity, it may well be that in Argentina the failure to pass on certain biological traits is seen as a failure to pass on identity and cultural belonging. Moreover, the inheritance of biological features different from those on which belonging to a family and to Argentine Europeanness and/or Whiteness are thought to be grounded, may be regarded as a 'giving up' on the prominence that white phenotypes have.

In effect, further evidence suggests the specific sense that such 'giving up' might entail. This points to how it may be precisely the presence of that

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population ('barbarism'). Crucial in this debate was the association, as Fernando Devoto (2003) has noted, of the 'civilising and transformative myth' with European immigration.

[176] 'Cabecita negra' ('little black head') is a derogatory denomination for internal rural migrants to Buenos Aires, used by people from Buenos Aires mainly during the 1940s, 1950s and 1960s to identify these collectives. It is currently somehow outdated but has been substituted by derived terms like 'cabeza' ('head'), again meaning a person who has no education, no taste or no culture. President Juan D. Perón famously interpellated the working class masses congregated to his speeches by calling them 'My *cabecitas negras*'.

[177] A similar analysis of the derogative connotations of the term *mestizo* for the case of Brazil, where the latter figures as a 'parasitic, indolent, lazy, ignorant, [and] not able to work' character, can be found in Arantes Botelho and Habib (2007).

unacknowledged part of the population, the Indigenous non-European component, that acts as a threat to what is regarded by sectors of the population as Argentine (and specifically *porteño*[178]) Whiteness, rather than the presence of 'Yellows', 'Vietnamese' or 'Mohammedans'. It may not be because Buenos Aires has a similar immigrant composition to New York that the need for physical and ethnic coordination of donor and recipient is widely felt, but because the *mestizo* phenotypes that carry the stigma of rural migration, lack of education and development, etc. will likely pass to the unborn child if present in the donor. As three other practitioners said,

> What I hear most is what you hear *at the social level*, that it has to do with aesthetics. Then, '*if at home we are all of fair skin, what will happen if they give me an oocyte of a woman with darker skin*? (Psychologist 1, my emphasis).
>
> There are patients that (...) explicitly ask for similar phenotypic features in the donor, *that she is not, let's say, if I am blond and blue-eyed that the donor is not a darky-haired*[179] *from the Altiplano*[180] (Embryologist 2, my emphasis).
>
> LA: Do you think that the matching is important?
> G: I think it's important (...) for a *social reason*, and that is the thousand-year-old *separation between Whites and Blacks* (...) *you can't give two very blond persons the ova from a dark-skinned*[181] *donor because they will have a dark-skinned son*
> LA: so there is a lot about this social thing about the colours... but do you think that this preoccupation happens in both senses, those who are of white skin that [the donor] is not of dark skin, and the other way around as well?

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[178] Meaning people from the port, people from the capital city (Buenos Aires).

[179] 'Morochita' in the original. Once again, the use of the diminutive form ('*morochita'* from '*morocha'*, brunette) is probably intended as a derogatory form, in this case mimicked by the practitioner, who is reproducing the recipient woman's voice.

[180] The Altiplano refers to the high plateaux of Bolivia and Peru, whose population composition is markedly of *quechua* and *aymara* origin in opposition to that of Buenos Aires, phenotypically visible in dark skin, eyes and hair. Nevertheless, the Altiplano figures here by extension as a synonym of the Northern provinces of Argentina (Tucumán, Salta and Jujuy), whose population by geographical proximity is also in high proportion of *quechua* and *aymara* origin, and typically subdued in economic terms.

[181] The word used by the practitioner to refer to people of dark skin is 'Morochona', in this case a superlative of the Spanish word for brunette or dark, morocha. As with the diminutive case above ('morochita'), the use of a superlative is indicative of the attempt to introduce a further connotation into the original word. As a Spanish native speaker, I equate this attempt with the will to dilute the possible negative connotation of making a differentiation between those who are *morochos* and those who are of white skin. The superlative works in this case to soften the term 'morocha' by introducing an affectionate undertone, yet as in the case above I am ultimately unable to identify the intention of the speaker.

> G: *I don't know if the other way around as well. At least couples who are more* morochones *do not transmit so much the anxiety of 'what are you choosing?'* (Gynaecologist 1, my emphasis).

These extracts show the work of a classificatory system of nature where belonging both to a family and a wider social group ('so there is some cultural-social homogeneity!', 'it's important for a social reason') seems to depend on the coherence between parents' and offspring's physical appearance ('if at home we are all of fair skin, what will happen if they give me an oocyte of a woman with darker skin?'), while the search for such coherence sometimes allows for the emergence of different valuations of nature ('if I am blond and blue-eyed that the donor is not a darky-haired from the Altiplano'). The implication is that – similar to what Strathern (1992a) suggested in relation to the preferred (mixed) natures of English kinship – nature is the object of an ordering (but also dividing) activity where, in this case, some natures need to be cast off ('[morochita] from the Altiplano') in order to preserve others ('blond and blue-eyed'). Such exclusions and preservations work in Argentina on the basis of a set of presuppositions: that cultural belonging is partially encoded in genes, that therefore some neat separations need to be preserved ('you can't give two very blond persons the ova from a dark skinned donor'), and that the nature of some is somehow more valuable than that of others, as manifested in the racist connotations of a reference to a '[morochita] from the Altiplano'. Commonsense allusions to the lack of a 'multiraciality' and of 'ethnic donors' and to the European origins of the population tend to obscure this multiply determined normative character of phenotype matching, insofar as they enforce physical continuation between parents and offspring as a form of preservation of Whiteness.

Chapter 7: 'Lest they meet and marry'. Numbers, registers, and the material (re)production of the same persons

Modern biology places high stakes on variation. Diversity, through which the realm of living organisms comes as both internally differentiated but also connected within, is one of the pillars of modern evolutionary thought, where evolution is seen to happen by means of natural selection, and as an outcome of adaptation. Part and parcel of this theory, firstly proposed by Charles Darwin, is the assumption that individuals with genes most fitted to survive in their environments are 'naturally selected', reproduce more and live for longer (Darwin, [1859] 2008). Yet for such selection to occur there is the unavoidable pre-requisite of genetic variation, which provides the material basis for adaptation, and which is thus constituted in this modern narrative as a norm of nature, one which if unfulfilled can eventually lead to the disappearance of a population.

As a cornerstone of modern evolution theory, the preoccupation with variation carries through to the current study of molecular genetics, where the Human Genome Diversity Project is perhaps the most salient example shaping much of the contemporary agenda of biomedical research. In all these domains, it is probably 'race' which makes most explicit the significance of variation for contemporary science. In effect, although as Jenny Reardon (2004) documents, efforts to disentangle 'meaningful' social characteristics from a biological basis for 'race' have been around since at least the 1950s[182], genetic definitions of race and, with it, of genetic variation between populations, have continued to pervade the discourse of science. These definitions underpin the use of racial categories that speak of human diversity in biomedical research and beyond (Reardon, 2004; Lipphardt and Niewöhner, 2007; Rabinow & Rose, 2006b), from understanding susceptibility to disease and tailoring a response to it, to 'ascertain[ing] vulnerabilities and plasticity, to adjust[ing] nutritional intake or therapeutic

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[182] According to Reardon (2004: 44), a worldwide agreement on the idea that there is no biological basis for race was first reached in 1950 with the publication of the UNESCO Statement on Race, yet efforts to disentangle the "'science" of race [from] (...) its "social" uses' had already begun by the 1920s in the United States.

strategies or to trace[ing] ethnic ancestries' (Lipphardt and Niewöhner, 2007: 45). In reproductive medicine, an example of the significance of race, and with it of diversity, is routine testing for specific diseases among sperm and ova donors from particular ethnic backgrounds[183].

Shaped by the overwhelming ubiquitousness of the evolutionary narrative, the Argentinean fertility field is no exception. Practitioners performing in this field are indeed highly concerned to uphold in their practice the purported necessity of genetic variation, and by putting in place (and submitting to) the authority of regulating devices that aid in variation's eventuation. Their proclivity speaks of the centrality of modern evolution theory for contemporary medicine. But it also speaks of the particular sensitivity towards the biological and ethical aspects of the increase in certain types of medical treatment, such as that involving the use of donated gametes, which is thought to lead to an increase in the probabilities that people genetically related 'meet and marry', and thus reduce variation.

The rhetoric of variation and diversity, however, captures the attention of the social scientist for another set of reasons. In effect, as the feminist analyst of kinship and reproductive technologies Marilyn Strathern has suggested, ideas about familiar relatedness have frequently been connected to ideas about diversity; 'diversity (...) [is] a second fact of modern kinship' (1992a: 22, emphasis omitted). In Strathern's view, English pre-plural kinship posed an association between the 'twin concepts' (1992a: 35) of individuality and diversity, since it rested on the idea that as societies became more complex and pluralised, producing more individuality, more diversity was also produced. Insofar as Western models of kinship implied variable modes of connecting natural and human orders, diversity was thought to be a feature present in both domains:

> While individuals strive to exercise their ingenuity and individuality in the way they create their unique lives, they also remain faithful to a

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[183] The joint American Society for Reproductive Medicine (ASRM)/ Society for Assisted Reproductive Technology (SART) '2008 Guidelines for gamete and embryo donation: a Practice Committee report' state, for example, for the case of egg donors, that 'The donor should undergo appropriate genetic evaluation based on history, in accordance with ethnic background and current guidelines' (2008: S37).

> conceptualisation of a natural world as diverse and manifold (Strathern, 1992a: 22).

The implication is that diversity is both a *premise* and a *consequence* of kinship, insofar as the reproduction of persons both produces social and natural diversity, while also resting on natural diversity as a biological and cultural precondition:

> In order to reproduce persons must preserve natural diversity (...) then diversity would be both a fact of and have a priority 'before' kinship (Strathern, 1992a: 22).

The link between diversity and kinship is moreover not a prerogative of anthropological discourse and in that sense alien to the biological sciences. On the contrary, prominent molecular genetics accounts of the ways in which human difference should be understood have used family metaphors to describe biological connections between human beings. For example, the famous population geneticist Luca Cavalli-Sforza has said that the study of the molecular structure of DNA reveals that human beings are essentially similar at the molecular level; that beyond physical variation humans have a common history, share ancestors, and 'evolved together as "*one family*"' (Cavalli-Sforza, quoted in Reardon, 2004: 55, my emphasis).

Taking up Strathern's suggestion that ideas about natural diversity are connected to ideas of kinship, together with the significance of this association in contemporary biological discourse, I look here at the material and normative enforcement of the variation narrative – one which I claim has unexpected effects. I show that the investment of a kinship surveillance apparatus produces the nature of bodies and populations in ways that both stabilises the need of genetic variation and fails to attend to its demands. This paradox, which is the partial result of the performation of characters who are in need of separation, has effects for the forms in which the link between diversity, kinship and health is enacted in the concrete organisational practices of the fertility clinic. In fact, as I will suggest here, talking about, and ensuring the reproduction of biological variation, is also a way of producing kinship characters (like 'siblings'), biological relatedness and understandings of these relatedness between individuals. This production has, moreover, implications for health in unexpected ways that ultimately complicate the enactment of a logic of risks which has been deemed so central to contemporary biopolitics (Rose, 2001). Thus, by looking at how biological variation as a norm of nature is actually performed, I seek to clarify some of the ways in which kinship and health are understood and produced through sociomaterial arrangements in fertility medicine in Argentina.

To do the above, I look at a recurrent preoccupation with what is frequently alluded to by fertility practitioners as 'the risk of endogamy', the 'risk of consanguinity', or simply 'the genetic risk', as manners in which a biopolitical concern with the species and its health is currently emerging in the context of the use of donor gametes. This preoccupation is related to the possibility that children born from similarly originated gametes procreate together, thus complicating the relation of those who are seen to be in need of separation in order to sustain, concomitantly, variation and health. Yet as I discuss in this chapter, the consideration of such potential unions captures the concern with population's *biological* health, but also with the observance of social norms (i.e. the threat of incest), as has been suggested by Jeanette Edwards. In her ethnography on ARTs in an English town, Edwards (2004) showed that a sense of moral 'disquiet', 'anxiety' and 'distaste' arises in relation to unknown 'incest' in the case, among others, of the use of donated gametes.

Consistent with a commitment to examine the immanent performing of practice as enacted through sociomaterial arrangements entailing the entanglement of discourse and materiality, my way of exploring the above is by focusing, on the one hand, on the workings of numbers, and on the other, of clinical registers, including how such workings are imagined and described by practitioners. Such workings and descriptions are, I argue, part of a sociomaterial investment whereby characters, relatedness, and health are produced. To look at the above, I take inspiration from the work of science studies scholars who have pointed out the significance of studying the material ways in which the realities of science are enacted (Latour, 1999; Mol, 2002; Callon, 2007), but also from feminist analysts who have called into question the 'given-ness' of the matter of bodies and the relations in which they are entangled, proposing instead that the materialisation of bodies is co-constituted by discursive and material practices (Butler, 1990, 1993; Barad, 1998, 2003).

Numbers, chances, and the production of separated individuals

> We in reality, the calculus was… how was it? It was twenty per million, this is the accepted figure, twenty per million is the same that saying one per 100.000, that means one every 50.000. *What is it that matters, let's say, why is it that there can't be more [children] born*? If I use twenty pregnancies for a population of a million, this means that (...) tomorrow the probability of encounter between two *half-siblings*[184] is one in 50.000 by one in 50.000. This means... [calculates]... five by five [is] twenty-five and then here you have four zeros, and here another four zeros. *What is the result of that?* [Surprised] Look at that, [it's] 2.500.000.000. One in two thousand five hundred million. *This means that if I impose myself this figure, the probability is very very low. So far as I increase, this will decrease and it may be that they meet, two half-siblings* (Geneticist 1, my emphasis).

Above a geneticist is talking. He is explaining to me a numerical procedure. He calculates aloud, remembering the calculation(s) he might have done already many times, or maybe just once. 'How was it?' he asks, referring to some multiplication and fraction reducing. So he starts, doing the maths *in vivo* as a form of both remembering and explaining, recalling and reassuring (himself of) the accuracy and 'goodness' of the measure. He begins by setting a tentative number, twenty in a million, on the basis of which the probability of an unwanted encounter can be calculated (1/50.000 by 1/50.000), and evaluated in regards to the benefits it brings. As the interviewee proceeds, he works out that probability (one in 2.500.000.000) and is surprised (and pleased) with the result, insofar as he deems it low enough to realise. Once the chances that two half-siblings meeting are very remote, the original, tentative measure can be ratified (twenty in a million) and used to regulate the amount of times a donor donates.

Yet, why is the practitioner telling me this? What 'is it that matters'; what is he trying to say? I argue that one way of making sense of the passage above, and, more broadly, of the clinical practice that I here examine as cast in the

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[184] The term used in Spanish is the masculine form, 'medio-hermanos'.

language of probabilities (although with consequences far beyond the experiences of the mathematical realm), is to think of it as a form of action on the real that, in this particular case, is imagined as producing separation between hypothetical individuals. To understand how this separation is attempted, it is useful to consider a theoretical subpopulation of 'donor children', and imagine how their 'mixing' might be avoided once ideas about the healthiness of diversity suggest this. So, if one needed to ensure diversity between such donor children, one way of doing this would be to interpose 'other' persons (that is, persons not procreated from the same individuals) *in between* 'donor children'. This is, arguably, how the measure above is imagined by the practitioners who use it. In this form of representing the action of probabilities, the 'million people' that come to be introduced in that hypothetical subpopulation of donor children, are imagined as producing diversity by actually *separating* donor children from each other by means of interposing others.

As I will show in the following, however, the use of probabilistic measures that is exemplified in the above passage, needs to be understood not only as imagining the production of separation between already-constituted, genetically-related individuals, but as part of an investment through which the very categories of people that have to be disentangled ('siblings') are produced. In fact, it is the use of specific terms ('one in a million', 'the probability of encounter between two half-siblings') in probabilistic investments, that helps to stabilise categories of people and the relations that they are to have. This investment can be thought of, moreover, as a way of performating the different bodies of the nation that have already mixed (namely, that of the donor, and that of the offspring), as necessarily separated from each other, so that they do not re-mix.

I have spoken above about the medical rhetoric regarding the need to *separate* and to *diversify*, two outcomes that, I have suggested, need to be understood as the product of a sociomaterial investment where probabilistic calculations are agenced with the statements of practitioners. Yet why are separation, and its expected result, the existence of diverse persons, important at all? Where do such requirements come from? Who necessitates them, and why?

An answer to these questions lies in what people procreated from similarly originated gametes are thought (and made) to be, and in the concomitant preoccupation with a potential diminishing of diversity that as I suggested in the Introduction is a key theme of modern evolution theory. On the basis of conversations about numbers, endogamy and the future of the species that I had with practitioners in the field, in the following paragraphs I look into how donor children are conceived by practitioners, and hence what is seen to be entailed in their potential mixing or re-mixing, before going into the analysis of numbers to explore how they materially enforce variation in Argentina.

Encountering siblings, bridging realms

I have quoted above the words of a geneticist. In explaining to me how he calculates the probabilistic numbers he uses in his practice, he gave away some characteristic forms of qualifying those procreated from similarly originated gametes. In effect, in linking the number of donations to the capacity of his probabilities, the geneticist explained to me that 'So far as [he] (...) increase[s] [the former], (...) [the latter] will decrease and it may be that they meet, *two half-siblings*'.

Such ways of referring to those procreated from gametes from the same ancestor were not an exception during the interviews I carried out. On the contrary, other practitioners said for example that

> When you increase above one child born per million from the same donor, the chances that [children from the same donor] *meet and marry* are increased. It might even be that... *it wouldn't occur to you to date your brother. But you may do it without knowing that he is your brother* (Gynaecologist 4, my emphasis).

Or tried to convey the risks involved in endogamy by exemplifying that

> [The risk] is that in the future people [born] from the same ova start to interbreed (...) *It would be like having an offspring with your sibling* (Gynaecologist 1, my emphasis).

These quotations are interesting because they show how scientific discourse is embedded with family metaphors which reinstate lay models of kinship. As I have previously discussed in Chapters 2 and 6, the latter are characterised in the West by the presupposition that biology is crucial to the definition of kinship. The deployment of such models in discourses filled with scientific elements like numbers speaks of their pervasiveness in science. They sustain what Marilyn Strathern (1992a: 52) argued is the importance, for English culture, of 'who the real parent is', insofar as they enact a model of identity in which the latter flows downward from parents to offspring, and is transmitted biologically. 'Who the *real parent* is matters' (my emphasis) because the one providing the gametes is thought to pass on genetic identity to those who are procreated from such gametes, in a manner that endows the latter not only with a given genetic make-up, but also with a given set of relationships, among which here figures prominently that of brotherhood. In this sense, those who come from the same gametes are seen as also having inherited a set of relationships, one which – in contrast with Edwards' (2000) findings in Bacup, where knowledge of a relation was deemed central to the materialisation of such a relation – may exist even if one does not know about it[185].

What is thus entailed in these characterisations? First, that kinship is given; that relations pre-exist and surpass knowledge of them; that they may last and shape what a person is even if that person is unaware of them. Because of this, such characterisations imply, second, that the dangerousness of some relations haunts those who bear them even when the latter have not culturally invested those relations as prohibited: 'it won't occur to you to date your brother, *but you may do it without knowing that he is your brother*' (my emphasis). It follows from this that, since individuals cannot attempt to avoid these risks by themselves (because, in the absence of sufficient knowledge, they may fail), there is the felt need of a population policy that would monitor risks that threaten both the individual and collective.

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[185] For similar reasons, it should be noted, this model of kinship is different in other aspects to that described by Strathern. Where Argentine doctors' characterisation of those sharing biological substance as siblings appears to attribute relations on the basis of natural connections, Strathern understood that 'however natural, relationships *had to be made evident* in a way that individuals did not. In this sense, individuals were regarded as real *whereas all relationships had a conventional or artificial dimension* to them' (Strathern, 1992a: 53, my emphasis).

The ways in which practitioners characterise those who have been procreated from similarly originated gametes are hence significant because they provide the connecting space between two different types of levels and domains. On the one hand, risks that can only be realised *individually* (in the actual procreation between two persons who share ancestors) are deemed to be in need of collective interventions, a reasoning that grounds the deployment of probabilistic calculation and the setting up of numeric limits in order to control the risks *in a population*. 'To be good citizens', the performers of such policies might be imagined to say, individuals cannot be left to the sole sphere of their individual action. Even if 'it wouldn't occur to [one] (...) to date [her] brother', one might still do it inadvertently[186] since nature has invested certain relations in such strong ways that it perpetuates them even if they are not symbolised as prohibited. In this, the characterisation of those procreated from similarly originated gametes as 'siblings' connects the employment of *population* instruments with that which takes place at the *individual* level. One is imagined as a condition for the other; a language devised for the group is sought to produce *particular* relationships between *certain* individuals; the *population* risks of health are deemed in need of interventions that seek to produce *persons*, and particular relationships between these.

Yet I suggest that, on the other hand, the characterisation of those who share an immediate genetic ancestor as 'siblings' is noteworthy because it also speaks, in a much less overt manner, of moral arrangements regarding the 'wrongdoing-ness' of incest. In effect, the assertion 'it wouldn't occur to [one] (...) to date [her] brother' incorporates the meanings associated not, or not only, with a biological threat to individual and collective health that might derive from the physical union between siblings, but also with senses prevalent in the moral orders of the West, where such unions are deemed inadequate from a moral point of view. In a similar way, the clarification by the second practitioner regarding what would be entailed in the risk of endogamy ('It would be like

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[186] The trope regarding 'inadvertent consanguinity' is also part of more institutional policies and by no means a rhetoric exclusive to an isolated practitioner. Below I quote directly from the ASRM/SART guidelines, and show that 'inadvertent consanguinity' also appears there.

having an offspring with your sibling'), appears to be grounded in an assumption about the transgressor character of incest, an assumption that overlaps with the biological concern over variation.

'Siblings' provides, thus, the connecting space between biology and the social, a proof of how the discourse of population health is conflated with (or is formulated through) moral idioms, in a way that complicates the distinction between health and morals. As such, 'siblings' is a category on which the avoidance of mixing appears to be grounded (if those who share genes are regarded as siblings, their disentanglement appears important). Such medical classifications are, however, misleading: they give the impression that 'siblings' are pre-existent to medical practices. Yet as I will argue below, rather than prior, 'siblings' needs to be thought of as a characterisation *emergent within* medical practice; it is a materialisation that is made possible through an investment which provides the felicitous conditions under which referring to people as siblings can become an empirical reality.

Modern biology and the imperative of variability

I have spoken above about the characteristic form in which those who descend from the same donors are typically described by practitioners, pointing out how such depictions are significant both for what they show about how the connection between the health of the population and of the individual is medically conceived, and about the relation between the domain of biological relations, and that of morality. Taking into account these descriptions, I now turn to the analysis of what practitioners see in the mixing of those who are considered to be siblings, a rhetoric which needs to be further acknowledged as part of the investment that produces siblings and disentanglement.

Enquiring about the work of numbers and the need to limit how many times a donor donates, one practitioner explained in the following way what in the field is known as the 'endogamy risk' or the 'genetic risk':

> G: [with more children procreated from the same donors] endogamy begins to increase and endogamy is not good for the species. It is

> detrimental to the species. Endogamy perpetuates many of the traits but also those which are useless (...)
> LA: but that one is a doubt I have... are there [emphatic] biological arguments against endogamy?
> G: yes, of course, *the improvement of the species is achieved by bringing in new races. Not by the mixing of all those who are the same*
> LA: which are the worst evils? What can happen?
> G: (...) *The more races are interbred, the higher the possibilities that they inherit beneficial genes. Also because those specimens that begin to have detrimental traits begin to be infertile, because they stop reproducing*
> LA: has that happened in humans?
> G: in humans as well, *in humans there are endogamous groups that tend to disappear, precisely because of endogamy* (...) *That's why the improvement of species implies bringing in new specimens, from other species* (Gynaecologist 4, my emphasis).

The extract quoted above exemplifies the high stakes placed by modern biology on variation that I discussed in the Introduction. In this narrative, insofar as the evolution of species by means of natural selection is the result of changes in species' make-up that enable some individuals to adapt better to their environments, biological diversity is regarded as a fundamental prerequisite to ensuring evolution (or 'improvement'), providing a constant source of potential recombination and thus of the possibility of novel adaptations. When a population is varied, individuals inherit genes from different ancestors, and this mixing is considered to be the basis on which evolution takes place in the long run as part of the appearance of individuals with genes that enhance their adaptation, a process for which Darwin ([1859] 2008) coined the expression 'evolution by natural selection'.

Moreover, not only is variation enthroned as the basis of evolution in this biological narrative, but also the lack of variation is made responsible for reducing the potentialities of genetic recombination and thus for the potential sickness and extinction of a population. In this account, endogamous practices that derive from 'the mixing of all those who are the same' lead to the production of less variation ('Endogamy perpetuates many of the traits'), an outcome that is regarded as having detrimental effects on a population ('many of the traits but also those which are useless), and potentially conducting to its extinction ('in humans there are endogamous groups that tend to disappear'). In such explanations, the health of a population appears as depending on ensuring disconnection between certain individuals, thus making some forms of kinship a ground for population wellbeing.

Explanations such as the one above were part of the rationalisations provided by practitioners when I enquired about calculations and the routinely stated need to limit the amount of donations per donor. Yet what is also significant in these accounts of the need for variation is how such a need is seen as originating in the 'sameness' of those procreated through gametes coming from the same ancestor ('the improvement of the species is achieved (...) Not by the mixing of all those who are the same'), a sameness that further qualifies their being regarded as siblings. Taking these characterisations as part of the sociomaterial investment whereby variation is enforced in practice, I look in the following paragraphs into the workings of material devices that take part in such arrangements, namely numbers and clinical registers, deployed to achieve the purported need of variation.

Probabilities in practice

Someone who is not a medical doctor circulating through a clinical space is almost certain to encounter the ubiquitous presence of numbers. Part of everyday routine to the point of becoming almost as an involuntary reflex, numbers are a salient feature of medical practice, enabling the qualification of entities, facilitating comparisons, setting goals for improvement and making up the very ways in which people come to be (Hacking, 1990). This is also the case in fertility practice, where numbers are used to describe things and communicate with others, establishing a common language (Desrosières, 1998), while they also function as representatives of norms whose observance may be said to have performative effects.

Following from the previous discussion of the biomedical view regarding the need to enforce variation, I now intend to look at other elements of the sociomaterial investment that aims to produce variation, with the aim of establishing how the arrangement *actually* works. To do so, I examine how numerical measures are actually procured and deployed. I argue that Argentina's lack of national regulation, and the consequent need to source numerical norms internationally, has specific implications for the ways in which a public health policy on the question is conducted, but also for how the articulation between kinship, variation and health is enacted.

Besides being a way of making up for the lack of local population studies, backing decisions on how to handle practice in international guidelines is something of which the Argentine reproductive medicine field is very proud. Practitioners would pompously speak, for example, of following 'international standards' 'to perform the best practice', and of deriving their numeric limitations from a 'global consensus':

> We are guided by norms from scientific societies, like the ESHRE[187] in Europe, the ASRM in the US, Redlara in Latin America, *that provide guidelines to perform the best practice* (Geneticist 1, my emphasis).
>
> Biostatistical studies. This is in the recommendations by the American Society for Reproductive Medicine, in the British, in the Australian, *it is a global consensus*; they are biostatistics (Endocrinologist 1, my emphasis).

As I will suggest in the following, the derivation of numbers from global institutions works to furnish them with authority; it makes them credible because they are part of a 'global consensus' that fulfils the demand for scientifically-based data, while also making the numbers 'good' because they are based on international bioethical standards. Yet such global sourcing of numbers has to be thought about in connection with the inevitable specificity of the contexts where such numbers are enacted. I give reasons for this in the two subsections below. In the first one, I show that the concern with egg donors' health that is emerging in Argentina as the result of the characteristic frequency with which donors donate there, implies that the need to ensure variation has to be practically regulated so as to prevent harm to donors. This triggers the simultaneous use of two ultimately incompatible measures – a deployment that has effects not only on how the potential risks to donors' health are prevented, but also on the question of variation and the production of relatedness between individuals. Yet

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[187] European Society of Human Reproduction and Embryology.

despite these effects, which I argue are the result of the way in which the investment partially fails, this deployment needs to be understood as producing the very characters that are deemed in need of disentanglement; that is, siblings, and donors and offspring. In the second subsection, I turn to the analysis of the operations that are needed to render abstract the numerical measures that are sourced internationally, with similar consequences as above for the actual prevention of risks to women donors, and for the production of consanguinity.

Which numbers? On the (lack of) specificity of measures and its consequences

Faced with the question of how many times a donor donates (a question that I posed frequently to my interviewees), doctors and biologists were usually fast in providing a number – one whose need they recurrently argued on the grounds of having to ensure variation. The rhetoric of variation was of overriding importance in the field – yet in enquiring repeatedly about this issue I found that in the case of egg donors there was also another rationale used to limit the number of donations, one which was notably less commonly argued theoretically by practitioners, yet an important part of everyday practice. As I will show in the next paragraphs, fertility medicine in Argentina is characterised by the use of two different types of measure to limit the number of donations.

One of these measures attains, in effect, the aim of maintaining variation (if a donor donates 'a lot' then it is thought that there is less variation). The joint ASRM/SART '2008 Guidelines for Gamete and Embryo Donation', which are the instructions most closely followed on this regard in Argentina[188], provide (for the case of *sperm donation*[189]) a measure aimed at regulating the 'risk of endogamy'[190]. This is a population-based measure. It belongs with the sort of probabilistic calculation and the logic of the wager that was described above in

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[188] Practitioners interviewed referred frequently to these guidelines. They also appear, as I analyse below, in SAMER's website, and were emailed to me by one practitioner when I enquired what guidelines were used to regulate gamete donation in Argentina.

[189] The fact that the ASRM/SART guidelines only regulate the potentiality of endogamy for the case of *sperm donation* further sustains my point below that the concern with egg donors' health is an emergent preoccupation specific to Argentina in view of the high frequency with which donors donate in this particular context.

[190] In Argentina, the ASRM/SART measure for sperm donation is also used for egg donation.

the words of a geneticist. It works by stipulating a limit to the number of times a donor should donate, and it does so in a manner that stipulates a number of donations in relation to a certain quantity of population. Such a measure readily exemplifies a concern with consanguinity, as it gives a number of pregnancies or births calculated as an amount which is contrasted with a number of inhabitants in the general population. The latter are imagined by practitioners, as I suggested above, as producing separation between those who – already constituted – should not mix. However, I argue that the deployment of a formula which stipulates a given number of pregnancies or births in relation to an amount of population helps, in fact, to performate the very characters that the formula aims to keep apart. Examples of the ways in which these measures are formulated are the statements 'when you increase above one *child born* from the same donor per million [inhabitants], the chances that they *meet and marry* are increased' (Gynaecologist 4, my emphasis), or 'You have to remember that the limit is twenty-five pregnancies per donor per 700.000 people' (Endocrinologist 1)[191]. These formulas need to be understood, I suggest, as stabilising the very terms that they purportedly only represent ('one child born', 'twenty-five pregnancies'), actually identifying those born or conceived in relation to a certain population as characters that should not mix (or re-mix, given that they descend from the same ancestor). Thus, by helping to circulate, and thus configure, the very terms that it aims only to represent, the formula makes it possible that babies born as a consequence of its use are identified as being siblings.

In the case of egg donation, however, there is also another concern to limit how much does a donor donate, one which is not directly addressed in the ASRM/SART guidelines[192], but which does indeed appear in the talk of some practitioners. This is the risk that may be posed to the donor's health if she donates frequently, a preoccupation that I argue is rather specific to Argentina as a local context where global measures are implemented, given the large number

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[191] Measures of this type were not always reported with the same values. In fact, the endogamy measure was reported by different practitioners as being twenty-five in 800.000, twenty-five in 700.000, one in a million and twenty in a million.

[192] The 2008 ASRM/SART guidelines refer very tangentially to 'Repeated ova donation', yet they do not tackle the issue directly, re-directing instead to the ASRM Practice Committee Opinion entitled 'Repetitive Oocyte Donation' (ASRM, 2006).

of times that donors tend to donate there[193]. As one practitioner told me, 'it is generally said that there is no relation between [taking ovulation induction drugs and] an alteration in fertility, and no relation to cancer'[194] (Gynaecologist 2), yet it is clear that for some practitioners the evidence for this lack of association is either not satisfactory or not sufficient, particularly given the specific conditions of donation in Argentina. For the gynaecologist above, for example,

> (...) six is like a limit number, because you have to imagine that it is a polyovulation what they are doing every three months, and that is a lot for the ovary, and a lot for the body (Gynaecologist 2).

Another practitioner also pointed out that

> All the studies carried out, they are done on the basis of donors of twenty years ago, ten years ago. What happens tomorrow to girls donating now, it's not known. Today's donors don't donate like before. They donate more, everything is much more widespread (Gynaecologist 1, my emphasis).

As these extracts show, some practitioners – and the institutions they work for – are indeed concerned about egg donors' health, a preoccupation that stems from the specificity of Argentina as a country where lack of state control

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[193] Egg donation has been known for a long time to imply some risks for the donors, insofar as it entails use of anaesthesia, surgical methods and the potential of multiple pregnancy and of hyperstimulation syndrome due to hormone intake. These risks are related to the donation as a single event, and they do not accrue over time (i.e. the risk of having a surgery-related complication is the same for each donation). They are different, in this regard, to risks to donors' health that derive from repeated egg donation (each time a donor donates, her risk of acquiring some sort of hormone-related cancer or having her fertility reduced may be increased). I focus on the latter type of risk in this chapter.

[194] An absence of association with cancer is in principle supported by research done in the field, although studies looking into this have given mixed results and are ongoing. Cancer Research UK enumerates a number of Danish, Dutch, Australian and British studies that have shown there is no association between ovarian, breast and womb cancer and the intake of fertility drugs (*Does test tube baby treatment increase cancer risk?.* (2012). Retrieved August 27, 2012 from Cancer Research UK website: http://cancerhelp.cancerresearchuk.org/about-cancer/cancer-questions/does-test-tube-baby-treatment-increase-cancer-risk). Similarly, a 2006 revision of the oocyte donation guidelines by the ASRM states that 'Recently published data have not demonstrated an association between the use of ovulation-inducing agents and ovarian cancer, *although* definitive conclusion await further follow-up' (ASRM, 2006: S216, my emphasis). A 2004 report by the NHS's National Institute for Clinical Excellence indicates however that 'Women who are offered ovulation induction should be informed that a possible association between ovulation induction therapy and ovarian cancer remains uncertain' (NICE, 2004: 34). The potential reduction of the donor's fertility is, however, a different matter. The 2006 ASRM guidelines state on this regard that 'It is presently not known whether repetitive follicular aspirations could affect the donor's future fertility' (ASRM, 2006: S216).

and high monetary compensation foster repeated donation by the same donor. This preoccupation seems to develop, moreover, regardless of the evidence provided by international institutions and guidelines like Cancer Research UK or the ASRM. That is, doubts persist to the extent that limitations on the grounds of health are also taken into account and besides the need to ensure variation. Enforcing 'good practice' implies taking institutional account of the eventuality and locality of these risks, even if, as I show below, such taking this into account needs to be practically combined with the need to control endogamy.

Protecting donors' health is, then, another reason to limit the number of donations taken from the same egg donor. Measures of this type are usually formulated taking into account the donor rather than the population where the donor donates, and given as a number of pregnancies or donations *per donor* (for example, six donations per donor, eight pregnancies per donor[195]). As in the case above, however, I propose to think about the use of the term 'donor' in the formula applied to prevent risks to her health, not as an already-constituted character, but as a result of the material investment whereby she becomes constituted as a character who (altruistically) donates her egg, and thus as someone whose health needs to be preserved. Statements like 'six is like a limit number (...) it is a polyovulation what they are doing (...) that is a lot for the ovary, and a lot for the body' need to be thought of, therefore, as part of the arrangements that produce the character of the donor as someone who is in need of medical protection, while helping to performate the doctors as those who are concerned about the donors' health.

The examples above show, then, that there are two types of measure around, two numerical limits that regulate how many times a donor purportedly donates. Yet how do these two types of measure relate? How are the different demands they represent, and the different characters they performate, coalesced in the actual limitations to donate? The answer is that, despite their differences, these two measures appear, *in practice,* mixed, a mixing that I argue ultimately

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[195] As in the case of the endogamy measure, measures of this type characteristically differed in value from practitioner to practitioner. Examples include eight donations per donor, six donation per donor, eight pregnancies per donor.

prevents a clinical account of what each measure does separately or by itself. In effect,

> A donor shouldn't donate many times, *that is established according to endogamy*, the reality is that people who undergo treatment, the son of one can easily go tomorrow to the school [of the other]; *the reality is that [donors should donate] four times, five times* (Embryologist 1, my emphasis).

Moreover, another practitioner said:

> At a global level, there is a donation limit set, which is based on one side on the risk of consanguinity, and on the other side on a possible risk for the [female] donor. *This limit is set in six times, six punctures* (...) Consanguinity is given by a formula, I don't know how it is calculated, which is twenty-five born alive every 800.000 inhabitants of the same area (...) *So, whatever happens first, that there are more than twenty-five born alive every 800.000, or that she donates more than six times, we stop there. It is usually the case that they donate six times or more* (Gynaecologist 1, my emphasis).

These extracts show that because it is impossible (or very difficult) to use the two measures separately, they are used together. Although the two types of measures are in principle fulfilling different tasks ('there is a donation limit set, which is based on one side on a risk of consanguinity, and on the other side on a possible risk for the [female] donor'), in practice they appear mixed. As the first interviewee says, 'a donor shouldn't donate many times (...) according to endogamy (...) the reality is that [donors should donate] four times, five times'. The measure she gives (four or five times per donor) corresponds better to the second type of measure, the one which tries to prevent risks to the donor, yet in the interviewee's talking this measure appears related to the risk of endogamy (as children may in the future go to the same school). With the second interviewee, a similar thing happens: although the interviewee makes the distinction between a measure that controls the risks for the donor, and one that prevents the risk of endogamy, *in practice* the two measures are used together ('whatever happens first'). Thus, the investment in which such measures conjointly act needs to be understood as an investment that aims to performate, simultaneously, variation and health.

Importantly, the way in which two measures devised to do different things are used together has implications for how the subjects and objects they regulate get constituted through their use or, more exactly, for the success of such constitution. In effect, since they are deployed together, the question arises: How does the endogamy measure relate to the one that prevents risks to donors, and how is this latter able to avoid the production of consanguinity? One part of the answer is that the measure that prevents risks to donors (say six donations per donor) ends up affecting the capacity to regulate the risk of consanguinity insofar as it is deployed to performate two different things (while overflowing and producing a third thing). On the one hand, it establishes a limit that purportedly protects donors from having their health damaged, an investment that I have suggested can be seen as enabling the very constitution of the donor as a character whose health is accounted for by the medical profession (the donor becomes then that one whose health is being cared for).

On the other hand, the application of the norm that prevents risks to donors needs to be understood as a false number (Lampland, 2010); that is, as a number whose use is inaccurate yet at the same time productive[196]. This means that even if the measure that prevents risks to donors is not strictly appropriate for the use to which it is put (i.e. is not a measure devised to control endogamy), it is still productive insofar as it helps to materialise the norm of variation in a simple(r) sort of way. By stipulating that donors are to donate, for example, *only* six times, it helps to performate medical practices as concerned with variation, that is, with the health of the collective, without having to enter into the more complex calculations entailed in applying the proper endogamy measure (i.e. twenty-five in 800.000). *Practically* applied to produce variation, the formula stabilises those procreated through it as siblings, commanding their disentangling (*only* six). This productivity of the prevention-of-risks-to-donors measure working as a false number does two things. First, it entails thus the performation of those who are regarded as siblings ('six') as pertaining to the same kind and therefore in need of avoidance of a potential re-mixing, while, second, the

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[196] Lampland presents a complex argument where 'false numbers' are temporary devices that enable rationalization, stability and fixity. For her, this means understanding false numbers as formalising practices. I here follow Lampland loosely in her overarching claim, namely that the use of a false number can have productive effects, can help to performate things.

measure also produces, concomitantly, the donor and the offspring as distinct bodies of the nation whose re-union needs to be avoided[197].

To use the six per donor measure as a way of controlling endogamy is, thus, to use the measure as a false number, deploy it inaccurately yet focus instead on the other result that it can bring (i.e. helping to *easily* materialise the norm of variation). The prevention-of-risks-to-donors measure is, however, a *false* number. It is ultimately inaccurate and as such the investment in which it acts is also bound to fail in some way. In effect, as much as the six-per-donor measure helps to *practically* materialise the norm of variation (and, in that sense, almost inadvertently performates 'siblings' as a kind whom it apparently only represents), its inaccuracy is responsible for the production of a biological relatedness between individuals that ultimately complicates the achievement of disentangling. This means that while the measure creates the circumstance that those born from the same donors are identified as siblings and therefore as kinds who should not re-mix, it also generates biological relatedness between individuals in ways that do not come to be acknowledged, in the investment in which they happen, as forms of 'brotherhood'. Thus, while the investment may be successful in (unwittingly) constituting the figures it aims (only) to keep disentangled, it is unsuccessful (or fails), in its own terms (it produces relatedness between those who should not be the same). In other words, individuals are produced through a measure that, practically deployed to produce variation, does not ultimately account for the degree of biological relatedness it produces between those who are to count as varied (i.e. *because it is not specific to controlling endogamy*, the six per donor measure cannot produce detachment according to a measure of twenty-five in 800.000). This, in turn, leaves open questions for the ways in which biological connection and kinship are actually understood and produced in the practices of the clinic, insofar as what the use of an unspecific measure achieves is the production of biological relatedness between individuals in ways whose assessment is displaced outside of the investment (i.e. how much

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[197] By enacting variation, the measure enacts 'siblings' (six) as those who should not mix, therefore enacting those who share genes (the donor and the offspring) as figures who (so as to ensure variation) need to be disentangled.

variation does the six per donor measure produce in contrast with the twenty-five in 800.000?). The significance of this fact needs to be understood, precisely, in the context of a concern with variation, insofar as the production of variation is what instigates the investment in the first place.

The above suggests that despite the stabilisation of those procreated from the same donor as characters who should not mix, the investment in which the six per donor measure acts overflows, producing biological relatedness between those very characters performated as in need of biological disconnection. Yet I said above that there is also another measure used to regulate how many times a donor donates, a measure which regulates the risk of endogamy. This measure, formulated as an amount of donations (or pregnancies or births) per population (twenty-five in 800.000), clearly works in the investment to further performate those characters who are in need of disconnection (the twenty-five births that are allowed every 800.000 people are understood to be siblings, and thus identified as in risk of too much connection if they eventually re-mix). As in the case above, however, it might be worth considering the extent to which the investment is totally successful, the configuration complete, and the degree to which it might also be said to overflow in some ways.

In fact, given that other times the measure that prevails in the clinic (or 'happens first') is that which prevents the risk to endogamy, it might be worth enquiring about the success of the investment that seeks to prevent damage to donors' health. This investment, I suggest, is not unrelated to the one that aims to perform variation, since, as I showed above, the measure that prevents risks to the egg donor is *practically* deployed also as a way of avoiding endogamy, thus ultimately partaking in the arrangement that aims to produce variation. In effect, then, if the measure according to which a donor is allowed to keep on donating or not is that of, for example, twenty-five pregnancies per 800.000, how does this investment adequately monitor the potential risks to the health of donors? The answer is that it monitors them inadequately, since the application of the rule of three gives an allowed number of ten pregnancies per donor for the City of

Buenos Aires[198]. Ten pregnancies per donor is a considerably higher number than the six (or eight) pregnancies per donor allowed according to the risks to donors measure, an increase which, *in the terms of the investment*, considerably rises the risks to donors' health.

The above analyses show, then, that the concrete arrangements by which numeric calculations are normatively deployed in Argentina as part of the enactment of what are taken to be the natural norms of variation (and health) has consequences for how bodies, characters and populations are intervened in and constituted as a result. Specifically, it allows us to see how, while being accidentally successful in certain ways (stabilising those figures, like 'siblings', that it aims to keep separated and, by extension, the donor and the offspring, as characters who should not re-mix), the enactment of particular investments may also partially fail in its own terms. This failure constitutes, moreover, a specific overflowing, since it is of course productive of different things which the investment aims explicitly to performate (variation and egg donors' health). In the examples studied above, this means that genetic variation between people is not produced according to a measure of twenty-five per 800.000 or its variants[199], but according to measures such as six donations per donor, eight donations per donor, etc. This substitution is significant, moreover, in the light of what I will show later are the exceptions to the rule regarding the number of times that a donor donates. In short, the failure of the investment produces relatedness in ways that are not acknowledged within the investment, thus failing to biologically disconnect those whom it otherwise constitute as in need of disconnection. For similar reasons, the failure of these arrangements results equally in the fact that it is not healthy bodies that are produced through them, but rather bodies whose exposure to the risks deriving from repetitive ova donation has been increased (as is the case when ten donations per donor are allowed, a limit which results from applying the twenty-five in 800.000 rule for the city of Buenos Aires).

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[198] According to Gynaecologist 1, this figure comes out of applying the rule of three to the City of Buenos Aires. 'If in Buenos Aires there are 3.000.000 people, then the application of the rule of three implies that there can be ten [children] born alive [per donor]' (pers.comm.).

[199] Like twenty-five in 700.000, one in a million or twenty in a million.

As I have recounted above, the numbers referred to as being used to do the same thing (limit the amount of times that a donor donates), were not only different in kind (represented by an endogamy measure and by a risks-to-donors measure), but noticeably also in numerical value (*eight pregnancies* per donor, *six donations* per donor, etc.). Puzzled by this variability, I started to ask my interviewees not only about *which* numbers, but also about *the sources* for the numbers they used. I aimed to understand how numerical measures were arrived at, or, at least, where practitioners sourced the numbers upon which they acted in order to be able to account for numbers' characteristic variance. Were the numbers that practitioners used differently sourced and, consequently, different among centres and practitioners? Was it possible that different numbers were nevertheless similarly produced, ultimately showing a commonality despite their differences?

In searching for these answers, a first realisation came as to the lack of interest with which practitioners faced the question of the sources of numbers. They said, for example:

> LA: this number that you mentioned, one birth per million, *who calculates this number*?
> G: *who calculated it exactly I am not sure*, *but there is mathematical formula* to show that… let's say, the probability of endogamy in a population *has been demonstrated* to be more or less a number… (Gynaecologist 4, my emphasis).
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> [The avoidance of] consanguinity is given by a formula, *I don't know how it is calculated, but* it is twenty-five born alive per 800.000 inhabitants of the same area (Gynaecologist 1, my emphasis).

In the first example, I ask the practitioner who calculated the number, and he has no answer, or, more precisely, his answer enacts the irrelevant character of the particular histories of a number. In effect, he answers me making clear that 'who calculated [the number] exactly' is not important, but that the important thing is that 'there is a mathematical formula'. In the second example, something similar happens when the practitioner spontaneously makes clear that she does not 'know how [the formula] is calculated' *but* that the formula offers a given number. In both these statements, the objectivity and abstractedness the formula represents seems to justify the number's apparent lack of history (or more accurately, the formula's lack of a pure origin in the form of a specific and context-related source), reinforcing instead the availability of a formula as a device that can be continually redeployed.

Such references to useful formulas that could not – would not – be referenced back to an original calculation, or deployed in connection with a particular course, but rather emphasised in their handiness and objectivity, were frequent during the interviews I carried out in this regard. This shows that for many practitioners in the field, the fact that they do not know how the formula is calculated is irrelevant to the use to which the formula is put. Moreover, the way in which practitioners acknowledge this lack of knowledge shows that the formula is expected to work in a way which is autonomous from the specific numerical, ethical, biological and cultural history that enabled its calculation in the first place.

Looking at other statements by practitioners, and at the references they provide to international professional guidelines on which they base their practice, a different story is, however, revealed. In fact, despite the de-historisation of numbers that is produced by enacting them as if they had no histories or as if these histories were not important to the role they play in practice, numeric calculations and limits do have particular histories from which they derive. An illustration of this can be found, for example, in one interviewee's discussion of the origin of numbers. In effect, despite affirming that she does not 'know how [the number] is calculated', earlier in our talk she has mentioned in passing that

> This limit is set in six times, six punctures. *This limit is set (...) because there have been studies where it was shown that if it is done up to six times nothing happened [to the donor]* (Gynaecologist 1, my emphasis).

Despite practitioners' quotations above where the origin of numbers appeared as both irrelevant and untraceable, a different idea emerges here. The interviewee indicates that 'there have been studies where it was shown that if it is done up to six times nothing happened [to the donor]'. This suggests that at least some numbers are indeed sourced through specific numerical procedures, more particularly through population studies that evaluate in this case the risk on donors' health of the use of ovarian stimulation drugs. The results of such 'studies', which an inspection of the ASRM guidelines show have not been carried out in Argentina but rather in countries where there has been an attempt to assess the risk posed on stimulated donors, carry with them then the specific history of the setting where they were first performed. They come both with the particular numerical history which enabled specific mathematical calculations to act as measures of a given risk, but also of the concrete bodies where such risks were assessed in the first place. In this sense, they carry particular bioethical, numerical and biological histories which might be thought of as the felicitous conditions under which the number can act in its (original) context, leaving open however the question regarding how can the transportation of such histories *successfully* act in the new context.

A second example also shows how the transportation of numbers from context to context implies the surreptitious transmission of their specificity while being facilitated by mechanisms of (apparent) abstraction. As part of my discussions with practitioners regarding the use of numbers, a doctor indicated that 'the Society' had produced recommendations for the handling of reproductive donations in fertility clinics. Having set out to find the mentioned recommendations, I was nevertheless only able to locate, in a first instance[200], the abovementioned ASRM/SART guidelines. This was in itself a noteworthy change, since the 'recommendations' that had been referred to as issued locally (that is, as carrying the felicitous conditions under which a number can be *successfully* deployed in a *particular* context), appeared to proceed instead from the US, showing that the Argentine ART field was being regulated at least partially by guidelines produced somewhere else. The significance of this fact is quite obvious, given the clarifications provided in the very ASRM/SART guidelines examined here, which I quote in full:

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[200] When writing the first draft of this chapter, I could not find in SAMER's website the recommendations to which the practitioner interviewed had alluded. These have appeared, however, on the website since then, yet they follow in an almost, but not total, literal manner the ASRM/SART guidelines I first found.

> *It is difficult* to provide a precise number of times that a given donor can be used because *one must take into consideration the population base from which the donor is selected and the geographic area that may be served by a given donor*. It has been suggested that in a population of 800,000, limiting a single donor to no more than twenty-five births would avoid any significant increased risk of inadvertent consanguineous conception. *This suggestion may require modification if the population using donor insemination represents an isolated subgroup or if the specimens are distributed over a wide geographic area* (ASRM & SART, 2008: S36, my emphasis).

As is clear from the above, it is the US guidelines themselves that draw attention to the difficulties in attaining a universal measure to regulate the amount of times that a donor can donate without increasing the risk of consanguinity in the general population. They recommend instead that this measure is derived from the characteristics of the population from which the donor is selected, including the relation between such population and the geographic area it inhabits. Moreover, even in the case where a suggestion is made (twenty-five births per 800.000 inhabitants), the actual use of the measure needs to be contrasted in each case with the population density, isolation and dispersion of the group for which the donation is intended. Hence, the guidelines suggest that 'it is difficult' to provide a figure that performs well without fulfilling the condition of contrasting it with the context in which it acts (i.e. without ensuring the appropriate conditions are in place). In view of such difficulties related to providing a 'universal' measure, it might be worth asking: through what mechanism can the Argentine reproductive field use a measure devised in the US?; a question which is of course necessarily correlative to that regarding what such implementation produces.

An answer to this question can be found by looking at the specific way in which numeric guidelines are deployed in Argentina. After a period of time during which the field was apparently regulated only by the ASRM/SART guidelines described above, SAMER has recently issued a document where it states that

> The same donor[201] may be used for a limited number of pregnancies. For a population of 800.000 people, a donor should not originate more than twenty-five births. Beyond this number the chances of unnoticed consanguinity are increased.[202]

Here, SAMER's recommendations textually copy *a portion* of the US guidelines, dispensing however the proviso that 'one must take into consideration the population base from which the donor is selected and the geographic area that may be served by a given donor'. This deletion can be understood as attempting to detach SAMER's recommendations from the conditions under which the US guidelines are expected to act (namely, geographical and population specificity) and, thus, as attempting to produce the local US guidelines as an abstract measure, that is, as a measure which does not represent a specificity and which can in that sense be successfully transported to a new context.

Using the framework employed in the sections above, it might be possible to understand the attempt to render a measure abstract as in fact not rendering the measure abstract yet (unwittingly) enacting the donor and recipient that are part of the measure as abstracts. In effect, like the disregarding of the specific histories of a measure that is the product of enacting measures as if they had no histories, what can be said by looking at the quotation from the ASRM/SART guidelines above is that the characteristic way in which statistical measures are deployed in Argentina produces the donor as an abstract character (any donor), and the population to which the donation aims as an abstract recipient, a recipient with no specificity. In this sense, what the investments of fertility clinics may be said to be doing in this regard is performating the abstractedness of donor and recipient while purportedly only aiming to render a measure abstract (or generalisable). This performation can be linked, moreover, to analyses already presented in this thesis. In effect, on the one hand, Chapter 6 examined how the

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[201] In Spanish in the masculine form. Although I do not look into this issue here, the use of the masculine form should also be acknowledged as part of the reproduction of a specific norm as an abstract standard and, in that sense, as a form of erasure of the particularity that is encompassed within such standard (for example, the particularity of women donors).

[202] *Requirements for the accreditation of centres*. (2012). Retrieved February 13, 2012 from SAMER website http://www.samer.org.ar/centrosacreditados_nuevasnormas.php.

donor was shown to be institutionally dispossessed of the conditions of her life (family, phenotypic idiosyncrasies), and thus enacted as an abstract (any donor). In accordance with this, the performation of the abstractedness of the donor taking place in the variation investment can be understood to be a further instance in which the donor comes out as not embodying any particular difference, but only a generic condition, the fact of having ova to exchange. On the other hand, in Chapter 6, too, the Argentine population was shown to be deemed by practitioners to be 'European' and not 'a multiraciality'; a view materialised here with the deletion of the proviso figuring in the US guidelines, and which further enacts the Argentine population as representing the universality of the absence of conditioning.

Yet does such attempt to render abstract a given numerical calculation delete in fact the specific histories of which such number derives? Does a *specific* measure become abstract *merely* by subtracting from its enunciation the proviso that it needs to be locally contrasted? In other words, is the statement successful without securing further conditions of possibility (i.e. without setting in place mechanisms, like an account of geographical and population specificity) for rendering it abstract? The answer is probably not. Rather, and similar to the case above, without providing new felicitous conditions under which a measure can satisfactorily become abstract, the attempt to deprive from representability produces only the surreptitious re-introduction of the specificity of the measure in the new settings where the number is made to perform. In the case examined above, the specific history of the proportion 'twenty-five births in 800.000', which is related to the way in which this measure might have been first calculated *in the US* and, as the very guidelines make clear, taking into account specific geographic conditions, population dispersion and isolation measures, is made to appear as irrelevant and thus surreptitiously reintroduced now in a new population like that of Buenos Aires, Argentina.

Yet enacting numbers as if they were not the product of particular numerical, ethical, cultural histories, disregarding such histories by 'copy-pasting' them from global guidelines, has particular consequences; this is, this enactment overflows its framing, it continues to be performative, it produces new results.

While these effects certainly speak of a deficient public policy, they do not obviously end there. Taking into account the association between diversity and kinship at the core of anthropological and biological science, the surreptitious re-introduction of the particular histories of numbers in new contexts that I have illustrated through the two examples above has consequences both for diversity *and* for kinship. It has consequences for diversity, as the first case illustrates, because performing numbers as if they were de-historised fails to account for the difference of the biological bodies that allowed the calculation of certain numbers in the first place, that is, for the biological particularities of those women who took part in 'studies' to assess the risk of being hormonally stimulated. It equally fails to attend to the biological difference of those women whose bodies will be intervened and regulated in order to extract from them donations. In short, enacting numbers as if they had no histories, while surreptitiously re-introducing such histories, fails to answer the question of why 'six' is a good number to avoid the risks to Argentine donors' health, taking into account that this population of donors might well exhibit a *particular* susceptibility to ovarian cancer, ovarian hyper-stimulation or reduction in fertility. This produces the intervention of Argentine women's bodies in a manner that cannot ultimately ensure the preservation of their health. For all the rhetoric of 'variation', its benefits for populations and the need to preserve it, this variation is not accounted for when numbers are enacted in an abstract and de-historised manner. The investments oriented to ensuring variation thus intervene into bodies as if they were non-varied, identical versions of the same purportedly abstract body.

But this lack of attention to variation that is part of the enforcement of variation also has consequences for kinship, for how people come to be actually related *biologically* and for how such biological relatedness (or its absence) is culturally rendered. This is better illustrated by the second example in this section, which assumes that the measure that works for the US (twenty-five in 800.000), with regard to the particular characteristics of the US population, will also produce the same effect in Argentina. In doing so, it fails to account for the biological, geographical, material specificity of Argentina's population. It implies the assumption that probabilities are not context-related and that their mathematical capacity can be realised in abstraction of the physical (and cultural) conditions in which they act. Such lack of acknowledgement has material consequences that actually affect the biological relationship of some people with others: it might well be that the outcome of the transportation of probabilities from one context to another does not produce the expected result; that people procreated from similarly originated gametes actually come to be *closer* or *more distanced* than was stipulated by the probability in its original place[203]. In short, this shows that the investment that seeks to ensure separation between people is not enacted equally in different contexts by the application of the same number; that people come to be biologically separated (that is, related) differently by the use of the same number in different physical contexts; that kinship between people is the differential result of the same mathematical operations.

I have explored above two concrete examples of how the norm of genetic variation is practically enforced in Argentinean fertility medicine, discussing the extent to which investments arranged to ensure its materialisation can be said to be, in their own terms, successful. In examining these cases, I have argued in favour of acknowledging both the specific production that such investments facilitate, and their failure in materialising the objects they want to performate (a varied population, healthy bodies), and of accounting for overflowing, for how failure to produce what is purported enacts instead different objects (a population uncertainly varied, bodies that may come out as not so healthy). I have arrived at these conclusions by looking at the operation of a specific kind of clinical device, the statistical number. In the following section, I focus my attention on another type of device, the clinical register, so as to understand the kind of work that it is made to do in fertility medicine.

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[203] A more specific answer to this question (does the twenty-five in 800.000 measure create more or less variation?) is impossible given the absence of a calculation that accounts for the specific conditions of the population of Buenos Aires. As I hope to have made clear, however, my point is not only the absence of such a calculation, but the foreclosing of the bioethical and biological obligation to produce such a calculation by the specific way in which the investment is deployed.

From distanced to concrete: registers and the materialisation of less varied individuals

Like the numbers analysed above, registers are also used in fertility medicine in Argentina to regulate how many times a donor donates, with the aim of preventing an increase in consanguinity. The way in which registers work is by recording the number of times that a donor has donated, materially enforcing the more distanced regulations posed by numbers. As in the case of numbers, the use of registers is also indicated in the ASRM/SART guidelines[204], yet as I will show below the concrete way in which registers are employed differs from their stipulated use in those international standards.

Taking the above into account, in the following paragraphs I look at how registers are concretely employed in clinical practice. I argue that although the use of registers aims at keeping those who are imagined as being the same conveniently separated (i.e. reducing the possibilities of their encounter and mixing), the way in which they are concretely deployed produces the paradoxical effect of reducing variation and ensuring the reproduction of the same. This result has important consequences both for how a public health policy on the matter is (and should) be conducted, as well as for how the nature of the bodies coming out from such investments is performed.

Registers are only used within the confines of a given institution, whether this is a fertility centre or a sperm bank. This means that the information they collect is not later transferred to a central or national register, a fact that is particularly important given the characteristic way in which egg donors tend to circulate across many centres, something I will discuss below. In addition, because donation limits always depend on a given geographical area, registers are also used to re-distribute gametes from a donor who has already reached her/his quota, to recipients in other regions or who live abroad, outside the population group which has already been 'served' by such donor:

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[204] The ASRM/SART guidelines indicate that 'In the opinion of the ASRM, a permanent record of each donor's screening and test results should be maintained. To the extent possible, the clinical outcome should be recorded for each donation cycle' (ASRM, 2008: S36; S40).

> Suppose there is a [sample] kept of someone who, let's say for here, for Buenos Aires, has already given….we reach ten [pregnancies per donor] and we say 'enough' (…) But if I have an order from Salta, people I know that need a sample of certain characteristics, we already know that it's not part of the same population, it's from another place that is far away, then the probability of an encounter is even lesser, then we can do it (Geneticist 1).
>
> G: A donor can donate a thousand times. But the thing is that she can't have... for us, she can't have more than six pregnancies. However, she is a spectacular donor. So I reserve her for people that come from Bolivia, from Paraguay, from the US, from Venezuela. *So with these ova, having taken them out of the geographical region, I reduce the probabilities of consanguinity*
> LA: So you need to keep a daily register (...)
> G: Yes (Gynaecologist 3, my emphasis).

Insofar as the regulation of endogamy is to a certain extent an interaction of humans with nonhuman devices, registers partake, hence, of the regulation of how actual and potential persons are going to be related, aiding in the decision regarding the granting of permission for a donor to donate more or not. As data-recording systems aiding human mnemonic agency, registers help to build an account of past clinical practices, actually remembering the amount of times a donor donated, and the results of such donations (pregnancy, child born alive). By way of exercising their mnemonic function, and working in association with the biostatistical measures above, registers help to make decisions regarding whose donations to allow or not, a margin of normative agency which is delegated to them by humans and which helps them outgrow their recording role:

> And then this goes again to the laboratory, the laboratory when they have the sample, *it is always indicated* if there was a pregnancy or not, to be able to count the number of pregnancies and the number of newborns from a certain donor… (Geneticist 1, my emphasis)

Yet this discretionary margin of action gained by registers as normative regulators of disconnection between people is exercised in complex ways. In effect, in talking with practitioners about how registers are concretely used and what registers do, I found that other rationales and interests complicated the way in which registers perform as recorders/managers of relations between future people, that is, between people procreated from gametes from the same ancestor. In particular, insofar as the regulation of endogamy is a human/device interaction, registers act conjointly with humans, an agencement that I will show has very particular results.

For example, despite the expectation that registers, aiding practitioners, will forbid further donations from a certain donor once this donor has fulfilled her/his quota, in certain occasions practitioners will allow a specific donor to donate 'more', or even acquire a sort of 'indefinite leave to remain' status as a donor. In the case of egg donation in particular, these donors would generally be those with 'nice ova' and who usually 'get other people pregnant', donors who are sometimes alluded to as 'preferred' by the practitioners in charge and, who, given the qualities of their ova, may sometimes be allowed to exceed their expected quota:

> E: A donor should not donate many times, that is established according to consanguinity (...) four times, five times
> LA: but is that [quota] fulfilled?
> E: [Silence] …. I don't know… An attempt is made to fulfil it… (...)
> LA: and centres have registers, like 'this is the last time that this donor donates'?
> E: yes, like 'this donor can't donate anymore'. *The reality is* that there are preferred donors, like 'oh, today comes so-and-so', because you know that she has nice ova, that in general she gets other people pregnant (Embryologist 1, my emphasis).

The quotation above shows the specific way in which the agency of the register is limited by counter rationales connected to the need to have continuous access to ova and to ova of particular characteristics. The practitioner's doubt ('I don't know… An attempt is made to fulfil it') over the extent to which the register can effectively control how many times a donor donates is indicative of the way in which numeric norms come to be enacted by the agencement of registers and practitioners. As the practitioner said, despite the more distanced indication of numbers regarding how many times a donor should donate, the particular way in which registers materialise numeric norms is a result of how their agency is agenced with that of practitioners, an agencement that ultimately implies that 'preferred donors' who 'get other[s] (...) pregnant' donate many more times than the limit stipulates.

A similar thing happens with those donors who have 'difficult' phenotypic characteristics. As I have suggested in Chapter 6 where I examined the production of parent/offspring physical coherence, the forms in which what are taken to be the norms of nature are concretely enacted in many fertility clinics in Argentina implies forms of nature preservation that are ultimately indicative of a differential valuing of nature (for example, of that of blue eyes and blond hair). In the case of the use of donor registers, an analogous valuation and preservation takes place, this time when those with sought-after characteristics which are 'less frequent in the general population' (Gynaecologist 2) are allowed to donate more than the stipulated amount of times:

> LA: Some people have said that in some cases there are exceptions to the number of donations by the same donor, when the latter has special characteristics, like having physical traits difficult to get hold of, like being blond and blue-eyed. *Is this in effect like this, that a donor donates more for having these characteristics?*
> *G: Yes, it is like that. We try to ensure that this is increasingly less frequent, but it is like that* (Gynaecologist 1, personal communication, my emphasis).

As both examples above allow us to see, the existence of 'preferred donors' who 'in general get other people pregnant', and of donors with special characteristics whose physical difference is valued differently as rare and therefore in a sense in need of preservation, contravenes the isolated role of registers as purported regulators of the amount of donations. On the contrary, the concrete agencement of registers and practitioners makes patent ways in which difference is differently valued, with the outcome that some donors will donate more than the stipulated number of times. This result is significant in the light of claims about the need to ensure genetic variation in the population. In effect, by materialising in concrete decisions the distanced regulation of numbers, the register/practitioner agencement is part of an investment whose result is the formation of individuals who do in effect come, in more than the stipulated number of times, from the same ancestors. This has the effect of actually reducing genetic variation and preserving a certain physical aspect of the population (blond and blue eyed).

A final example also illustrates the ways in which registers are part of a normative investment which does not contribute to producing the expected variation, but rather helps to produce individuals who will come as less genetically varied. This is the lack of a collective register that centralises information coming from registers of the different clinics, a lack which is locally significant given the characteristic circulation of Argentine egg donors across many centres. The centralisation of all clinics' registers into one single record has been for a long time considered fundamental to efficiently regulate gamete donation and conveniently guarantee the observance of biological variation:

> LA: is there a register for other centres?
> G: for other centres, what do you mean?
> LA: a collective register
> G: no. There is an association *that is being organised now*, that is the Argentine Association of Reproductive Centres, *that is* [emphatic] *starting... Here* [Argentina] *things are much slower than in the rest of the world*, you see? ... *They are starting* [emphatic] *to think of a donor register... that would be fundamental*
> LA: do you think that it's important?
> G: [Ironically] *and what do you think?* (...) For you to have an idea, I had a meeting in this [Argentine Reproductive] Association, and I went with two friends. On the way there they told me, they are part of SAMER, and they told me that two or three friend-centres got together, and said 'let's see, bring ten donors, registers of ten donors, let's do it…', and one of the clinics had a donor who had donated fifteen times, [emphatic] fifteen!. Imagine [emphatic] the amount of pregnancies that she has given in that centre, plus the ones she has given in other centres…! (...) And *I can't be phoning*, '*che* [name of doctor] have you got a donor [named X]...?' *It would be a mess*, because I would have to call thirty clinics (Gynaecologist 3, my emphasis).
>
> LA: Because there isn't a collective register….
> G: No, (…) *this register is about to be created….* (…)
> LA: is there talk about this register among the doctors?
> G: haven't I told you that one of the things that SAMER is doing is creating a register *precisely so that this does not happen*? (Gynaecologist 4, my emphasis).

As the above quotations illustrate, most practitioners agree on the importance of the central register as a device that would complement the work done by clinics' registers. Yet this central register has so far failed to materialise, partly because arrangements take time ('things are much slower than in the rest of the world... [They] are *starting* to think of a donor register'), partly because this is no task for a single individual ('I can't be phoning (...) it would be a mess'), but also partly, arguably, because the establishment of a central register with a stronger capacity to regulate would also limit the present unlimited availability of donors.

Thus, taking into account Argentina's current lack of regulation of assisted conception, the absence of a central register means that donors fulfil their donating quotas in a given centre and (even if there are no 'exceptions' and the donor is effectively refused the chance of donating again) they go to another centre, where they donate *again* the stipulated amount of times:

> The same donor donates here X amount of times and afterwards she goes to another centre (...) We clarify this with the patient, we have exclusive donation, that means that all the ova retrieved from one donor are for the recipient, *but I can't guarantee that that same donor [doesn't] go to another centre and donates*. In reality *one is not chasing the donors* (Gynaecologist 7, my emphasis).
>
> We require that there is a maximum of six times that it's allowed to donate, but the donor who donates six times here has also donated six times in [name of fertility centre], six times in [name of fertility centre] (Gynaecologist 2).

As these two interviewees explain, the lack of a collective, centralised register makes it difficult to ensure the fulfilment of the numerical criteria given in the relevant guidelines. As one interviewee says with reference to 'exclusive donation', without the aid of a centralised register she 'can't guarantee that the same donor [doesn't'] go to another centre' because 'one is not chasing the donors'. Even if most members in the field agree on the bioethical and biological principle concerning the need to ensure disconnection between certain individuals, arrangements cannot be made firm, agencies do not come together to create the central register. Yet, does this mean that there is no investment of any kind; that agencies do not normatively – and immanently – accomplish any object? Certainly not. In fact, what is shown by the examination of the specific ways in which registers work is that the nature of people is being performed in very specific ways. These attain the preservation of certain physical aspects, like blond hair and blue eyes but also, concomitantly, the potential harm to those donors who are excepted from the rule to donate only a limited number of times, because they have difficult phenotypic characteristics or 'nice ova'.

Discussion

This chapter opened with a discussion of the importance of genetic variation for modern theories of evolution, showing the extent to which these shape Argentinean medical rhetoric and its enthroning of diversity as a basic norm of nature. An upshot of this centrality is, I have argued, the rising biopolitical concern with the future health of a population increasingly composed of people born from donated gametes, that is, of people who have the same ancestors. Such preoccupations are beginning to trigger the emergence of a population surveillance apparatus stabilised through investments oriented to control how many times donors donate. This apparatus, which can be thought as a way of supplementing the absence of the Argentine state in matters of reproductive technology, but also, more broadly, as a mark of the non-modernity of such an strategy (Rose, 2001), aims to ensure population variation as a way to sustain individual and collective health. It works by aiming to keep those thought to be siblings separated. Yet as my analyses have illustrated, 'siblings', and the concomitant categories of donor, offspring and recipient, are not the pre-existent entities whose disconnection needs to be ensured through the variation investment, but rather figures emergent in and through this very investment.

In examining the work done by registers and numbers, a central focus of this chapter has been the *actual enactment* of the norm of variation, by which I mean the ways in which elements of a material investment, typically sourced and/or deployed following US standards, are concretely acted out in relation to local demands. The demands include, on the one hand, the need to implement measures to prevent risks to egg donors' health, a demand that I have argued is specific to Argentina given the tendency of donors to donate frequently as a result of favourable conditions (lack of regulation, high compensations). On the other hand, these demands are related to the need to count on a good number of donors (given the dynamism of 'ovodonation'), and the (much less explicit) attempt to ensure the preservation of certain physical traits. These are demands that, I have suggested, are never discursively stated but rather immanently materialised. In examining these specifics, and making use of Callon's notions of 'investment' and 'failure', I have suggested that the concrete forms in which arrangements that aim to guarantee nature are organised and acted out produces specific characters, while overflowing the expectations with which devices were originally devised in the US, (the country where epidemiological measures are usually sourced from). In other words, numbers and registers take part in investments which produce certain figures but also fail, in the terms in which they are formulated, to regulate the objects and subjects they propose (a population varied according to a measure of twenty-five in 800.000, the healthiness of women's reproductive bodies). Pointing out such failures is not, however, aimed at 'denouncing' Argentine medicine for not producing sufficient variation. It is rather aimed at establishing how the failure of an investment is productive in other ways, insofar as it is the source of a population not-so-varied and the occasion for the preservation of a certain version of Whiteness, while it involves the paradox of producing potentially unhealthy female bodies while purportedly aiming to ensure individual and collective health.

These conclusions, which offer an example of the more overarching claim by Ian Hacking (1990) regarding the capacity of statistics to 'make up' people, can be further specified by recurring to the work of feminist thinkers who have shown how the very materiality of bodies can be shaped through material and discursive (scientific) practice. Taking this work into account, it is now possible to affirm, with Barad (1998, 2003), the inseparability of the objects and subjects of observation (the not-so-varied population, the potentially unhealthy female body, the donor, the sibling, the recipient, the offspring) from the agencies of observation (the numbers and registers that aim at controlling variation and health). In this sense, as Barad suggests, the apparatus that observes, or aims to regulate, is emergent in the very practices in which 'its' subjects/objects are constituted, insofar as the existence of an international guideline says very little about how such guidelines will be actually deployed. In a similar way, Judith Butler's understanding of the normative materialisation of matter helps to bring into view how the materiality of kinship, the biological relatedness that connects individuals, together with the physical aspect of a population, and with the health of its individuals, are not 'nature' or givens, but as shown through this particular example, the result of scientific practices through which a normative ideal of a varied nature is materialised. As I recounted at the beginning of this chapter, it is Strathern's suggestion that to think about kinship in the West is to think about diversity; that diversity is taken to be both an a priori and a result of kinship; a lesson with which I would like to conclude by pointing out the particular type of kinship thinking that appears to be embedded in scientific practice, and which instigates the production and prioritisation of *particular kinds of variation* (that is, blond and blue-eyed) as the way in which a group thinks its possibilities of preservation and evolution in time.

Chapter 8: Conclusions: nature as a matter of norms

This thesis has examined the conditions under which nature is normatively performed in Argentine fertility clinics. Looking at the use of donor gametes as one particularly telling assisted reproduction practice hailed as de-naturalising, even more than 'conventional' IVF, the 'facts of life', this project set out to understand the extent to which 'nature' may still be implicated in donor conception. This overarching question has been answered through the focus on three key problems. These were, first, the attempt to produce exchanges of reproductive material as moral, non-economic exchanges; second, the effort taken to produce physical coherence between parents and donor children; and, third, the endeavour to ensure that the population comes out as naturally varied given that this is prescribed by the healthiness of variation. In dealing with these three sets of issues, the analyses presented in this thesis have proved that in Argentine fertility medicine nature is normatively enacted, materialised as a construct that guides how medicine is performed, while producing as its results the nature of individuals and populations in very specific ways, giving rise to the performation of particular kinds of characters, such the donor and the recipient, the sibling and the offspring, and the fertility doctor.

To look at these three sets of practices, norms were used as a 'methodological lens' through which to examine the implication of nature in practice: Is nature conceived and handled as being good and important in medical practice? Do medical practices enact an idea of the natural while helping individuals to procreate? And if this is so, what does this tell us about the implication of norms in practice? Such were some of the questions posed by this research, and their empirical answers substantiate the premise that norms are involved in practising gamete donation. This premise was devised taking into account the fragile state to which – it was claimed – the practice of gamete donation had reduced nature.

Norms and nature are mutually implicated, then, and nature in gamete donation is a *matter of norms*. But, what has this meant in the context of this research? Why is such phrasing appropriate? These are questions with answers on different levels. First, by making norms *matter* in ways that enable the constitution of its research object, this thesis has corroborated the appropriateness of using norms as a lens with which to enact the objects of enquiry. In effect, by applying norms as a methodological lens, this work has been able to construct 'issues' as sociological objects, to actually performate them in ways that illustrate how the social sciences are also performative. Were it not for such optics, themes vaguely figuring in the public mind as part of the gamete donation 'problem' would not have been successfully scrutinised as *sociological* objects. And by this it is meant as objects whose inquiry is able to draw a distinction between *normative*, juridico-legal considerations of *how should* norms work, and a form of thinking and researching that economises on the imperatives, asking simply how (...) norms work. This attempt at finding a distinctively 'sociological' understanding of the enactment of norms is, of course, not a simple 'addition' to otherwise 'non-social' events (cf. Latour, 2005) but, rather, a form of performing the connections between medical, organic, legal, material, bureaucratic, human, semiotic, numerical, non-human, ethical, etc., 'entities'. And, in this sense, the 'sociology' done in this research is as much performative as the norms it aims to explore in practice (cf. Law and Urry, 2004); it is not one more 'perspective' that can be added to otherwise 'medical' or 'technical' practices (Mol, 2002), but the form in which the various elements of those very practices are re-arranged and become, thus, 'social' and hence liable to a 'sociological' analysis.

Second, nature is performed in Argentina as a *matter* of norms because, as has been demonstrated here, the enactment of norms has in this particular setting an inherently *material* quality. This means that the way in which norms emerge and are enacted is highly dependent on the materiality and practicalities of medicine, on how it is practised through human/nonhuman normative agencements. Examples of the latter examined in this thesis are the enrolment of the informed consent form as a device that performates altruism, anonymity, gratuitousness and, more broadly, morality; together with the use of the portrait picture and the phenotypic data form as devices that aid in producing parent/offspring coherence and the emergent preservation of a particular White body; and with the deployment of clinical numbers and registers as devices employed to avoid the mixing of those who should not, while immanently allowing for the reproduction of a blond and blue-eyed body.

In one strong sense, then, the analyses carried out in this research prove that 'norms matter' also because their enactment takes a material form, one which has been described in this thesis by recurring to the language of 'investments', of 'sociomaterial' and 'sociotechnical' *arrangements* (or assemblages), of 'performation' rather than simple 'construction' or even 'performativity'. Used most notably in STS, such a language facilitates the depiction of how norms are concretely enacted in practice. Key to the deployment of such language is not only the fact that it emphasises the degree to which norms need to be continually and materially iterated in order to be gradually stabilised, but also – and more fundamentally – that the slow sedimentation of such normative sociomaterial repetitions has as its immanent effect the production of certain types of nature (an Argentine White population, blond and blue eyed persons, persons that look alike, persons who are related, persons who are disconnected, women who may become ill). This production is, as I have argued in Chapters 5 through 7, as much the result of the success of the investments, and the way in which they fail and overflow. The consequence is clear: nature is the norm that, insofar as it is not external or transcendental, is not 'already there', is immanently enforced, enacted into things.

Natural orders, moral orders

So here I am suggesting answers to the overarching question about the ongoing relevance of nature in *assisted* conception: yes, nature *is* good; it is *still* relevant; *and* (because of the previous two), it needs to be assisted once it might be considered 'in danger'. Yet the ways in which these affirmations are made viable is not, as my analyses have shown, by addressing them explicitly and discursively, as if the relevance and goodness of nature was a set of *external* ideals that needed to be obeyed, for example in the manner in which public discourse on health might enforce certain acts on disciplined subjects (‘smoking is bad for your health, therefore I should not smoke’). Rather, I have suggested empirically that doing nature is a much more immanent, emergent, material endeavour – one which might not even be ‘discussed’ (as other aspects of practice might be, for example in a medical symposium), might not even be rationally considered (as something that becomes accountable: ‘should we do it or not?’), and might not even be ‘intended’ (in the sense of being the result of a conscious attempt of the individual or institutional will). On the contrary, I have illustrated how nature is a construct that, without being exterior to its instantiation, ‘is forcibly materialised through time’ (Butler, 1993: 1), thus guiding practice; a norm which is not external to practice but rather materialised in and through its effects. ‘Nature’, or ‘the nature of conception’ is not something practitioners ‘agree’ to do; nor is it something that a singular medical will in the form of a single practitioner’s agency ‘decides’ to do. Medical decisions and agreements are not usually formulated in terms of ‘doing things naturally’, ‘doing nature’; they pertain to much more local, almost trivial and short-term issues, such as how many times should a donor donate, or how to select a given donor for a given recipient, or how much money to offer to lure a donor to donate. Yet the ways in which such decisions are practised entails the immanent realisation of nature as a construct; a realisation that as I have argued is highly normative, insofar as its result is nature as *a very particular* kind (Argentine White, physically similar, connected, disconnected, varied).

Given the foregoing, it seems possible at this point to endorse the celebrated science studies’ insight that ‘nature’ and ‘society’ should not be understood separately; that efforts to distinguish them are part of a particular modern project (cf. Latour, 1993) rather than a reflection of ‘the order of things’. In effect, in this research I have shown that the production of a certain nature is coextensive to that of a certain society. What are the examples of this? As I have demonstrated in Chapter 6, it is clear that the specific way in which physical resemblance between parents and offspring is enforced through the sociomaterial arrangements of Argentine clinics, is co-constitutive of a certain ‘culture’. This culture is of course not that of ‘Europeanness’ (as if preserving a particular phenotypic appearance would in fact preserve a set of cultural traits magically attached to the latter), but rather of a culture where the colour of skin is taken to signify a particular belonging, and thus a particular basis for making distinctions between kinds of people. At the same time, another type of culture, both different and related, is being made here. That is in fact the (medical) culture which enacts itself as 'respectful' of nature. In effect, by aiming to safeguard the norms of nature (namely, that of the recessiveness of certain genes, and that of the randomness of genetic recombination), Argentine reproductive medicine performs itself as a field which does not depart drastically from nature, but which rather remains attentive to the way in which nature works.

Chapter 7 has illustrated, likewise, how by attempting to maintain what is (normatively) taken to be the healthy genetic variability of the species, a particular society is also being produced. This society is one which is, as above, attentive to the forms in which nature works, which does not attempt to infringe its norms but rather to sustain them. Concomitantly, and because as I have suggested the biological threat of sameness is conflated with the social disquiet of incest, the society enacted is also one 'observant' of kinship rules, of the necessary disconnection between certain (types) of individuals, like 'siblings'. Yet the pragmatic enforcement of disconnection produces (in an immanent, non-determined manner) society in yet another way as well. This is one in which certain natures should not re-mix, where the different bodies that constitute the nation (those of the donor and her family, and those of the offspring) are kept conveniently separated; a result which is further materialised by the preservation of certain physical traits, like blond and blue-eyed.

Finally, if Chapters 6 and 7 show, then, that the production of a particular *culture* is coextensive to that of a certain *nature*, Chapter 5 works somewhat in the reverse, by showing that the normative production of a moral culture partakes in the normative performation of nature. It does so by suggesting that, by enforcing an altruistic, moral, anonymous culture, fertility medicine creates the space in which 'nature' can be *safely* traded, produced and handled once it has been made clear that all this happens according to a moral aim. Thus, the aim to produce a moral space where gametes can be exchanged without the suspicion or adjudication of commerce is especially relevant for how nature is dealt with, a task whose examination was undertaken in Chapters 6 and 7.

'Neither discontinuous nor homogeneous': the co-making of individuals and populations in gamete donation

Discussing the forms of action of biopower and the order of sexuality, Michel Foucault famously claimed that between the individual and the society 'There is no discontinuity (...) as if one were dealing with two different levels (one microscopic and the other macroscopic); but neither is there homogeneity (as if the one were only the enlarged projection or the miniaturization of the other)'. He went on to claim that 'rather, one must conceive of *the double conditioning of a strategy* by the specificity of possible tactics' (1979: 99-100, my emphasis). In his particular way, Foucault was pointing out how modern biopower encompassed the production of populations and individuals in ways that made them both *distinguishable* and *related*, enacted through *the same* 'strategy' yet at the same time one which had 'a double conditioning', which operated differently according to the variable objects it performed. Such a way of thinking about the relation between individuals and populations as both different and linked seems appropriate to summarising some of the findings of this thesis, which in other ways owes so much to Foucault's concept of the norm, even if this has been more frequently deployed by recourse to the work of Judith Butler.

As my analyses have established, entailed in the 'making' of gamete donation is, in effect, the making up of 'people', a word that conflates productively both the sense of a group of people, and of a group as composed of individuals. So why claim that 'people' are being 'made up'? And what does this tell us about the difference – and continuity – between the individual and the population? First, gamete donation has been shown in this research to make up *people* because, as I have suggested, individual and population are two interconnected domains. So there is continuity. What happens to each of the individuals and characters it makes is not irrelevant to what happens to the collective. One is an argument for the other, and vice versa. One example of this is, for instance, Chapter 6, in which I explored a variety of themes including the ways in which the making of family phenotypic coherence, the selection and matching of an *individual* donor with an *individual* (or sometimes a *family*) recipient, with the aim of making an *individual* child that will be entangled in an individual family, with its idiosyncrasies, the ways in which it enjoys holidays or likes to have a stroll with the animals it keeps. In doing so I showed that this was also the opportunity through which a particular idea of the Argentinean *population* (namely, that of the ascendancy of Whiteness among differentiated strata) was immanently materialised. Yet the reverse is also true, and that is why the individual and the population need to be thought as levels whose production is coextensive. Hence, in Chapter 7 I accounted for the ways in which a type of biopolitical reasoning concerned with *collective* health, with the future of the group taken as a total entity that can be the object of characteristically population-based measures, like the statistical probability, comes to be the occasion for the individualization of agency, including siblings, donors, recipient and offspring. So where in Chapter 6 the argument works to show how the concern with the individual immanently materialises an (Argentine White) population (and with it the prioritisation and preservation of certain sectors of society), Chapter 7 shows how a preoccupation with the group immanently materialises a certain type of individual – the sibling and, concomitantly, the donor, the recipient and the offspring as kinds who should not re-mix.

Yet it is a question of continuity, as Foucault suggested, but also of heterogeneity. In effect, as much as individuals and populations are conjointly materialised, there is also difference; their distinction remains substantial. What proves this in this thesis? The answer to this question lies fundamentally in the types of devices whose deployment was shown to embody, as it were, the objects they produce. In fact, the portrait picture, and the phenotypic data form, whose analysis was undertaken in Chapter 6, need to be thought as intensely involved with the individual that they regulate. There is, in effect, no 'portrait' picture of a population, and nor can a form be filled out by 'looking at' a group, whose definition necessarily invokes ideas of internal difference and combination of elements, of plurality and adding up of units, of assemblage and categorisation.

The only way in which a collective can be thus carved out in such two inscriptions (the portrait picture and the phenotypic data form) is by passing through the level of the individual, a point that reunites, again, the latter and the population, while making their distinction significant. A similar point can be made of the statistical measure and of the clinical register: they are devices intrinsically involved with the group, they can produce an output only on the basis of an addition of individual cases. Thus it is, to use Karen Barad's (2003) terms, a matter of the co-emergence of objects/subjects of observation, and agencies of observation, of the inseparability of the 'observed' subject/object, and the agency which observes. A population demands 'its' own statistical, registry-like devices, in the same way in which the individual makes individual-tailored devices emerge.

Yet does the above mean that families are intentionally 'deployed' to produce a version of the Argentine White population (Chapter 6)? Does it imply, moreover, that a concern with the population's health is deliberately enacted to produce blue-eyed, blond, potentially unhealthy individuals (Chapter 7)? Certainly not. What it implies, rather, is that the normative organization of arrangements is an open-ended process, that while investments are made to produce phenotypic coherence or ensure genetic variation, every other possible result (a White Argentine population, unhealthy bodies, a not so varied population) needs to be understood as emergent, as not preordained in the ways in which sociomaterial arrangements are set. There is no other way than this to explain how normative investments aimed to produce variation end up performating similarity (Chapter 7), and how arrangements aimed to perform similarity end up producing distinction (Chapter 6). Such 'paradox' underscores the fact that despite all the 'heaviness' and conservatism that may be attached to a concept like normativity (insofar as it appears to emphasise more reproduction than innovation, what remains the same rather than what changes), normativity can be made into a tool to think about the emergent.

Making people abstract and concrete

I have described above how the individual and the population are enacted as different, insofar as they are the focus of specialised tools. Yet as my analyses have also revealed, despite this heterogeneity, population and individual are also linked; producing one is the occasion for the (emergent) production of the other; both are the product of a single strategy which *makes up* people (a *group* of *individuals*). To make up people through gamete donation is then, clearly, to make more than babies. In this subsection, I review the specific forms of individuals and individuation that are made up in gamete donation, and I link them to two dynamics that I term abstraction and concretion.

We can begin with the individuals. In effect, the analyses of the medical practices in this thesis show that these practices produce, in fact, individuals, and these need to be firstly understood with regard to their biological qualities. Hence, individuals are produced in material ways that provide them with different sets of biological qualities, and thus such individuals are not *only* babies, but babies who represent a certain version of Whiteness (and thus embody a different (Argentinean) valuation of nature (Chapters 6 and 7)); babies who have a good chance of resembling their (non-genetic) parents (Chapter 5); and – because the investments also partially fail – egg donor individuals who may be susceptible to a higher risk related to the frequency of donation, and babies who may be too closely genetically related to each other (Chapter 7). Yet it is obviously not only the material, biological qualities of individuals that are made in gamete donation: other forms of the individual are made as well. These include the agencement produced so that the individual acts in a certain way, something to which I have referred to throughout the thesis as 'characterisation', or the formation of characters, but which can also be termed following Callon, and as described in Chapter 5, 'individuation'.

In effect, as the analyses offered here have illustrated, one of the most important forms of 'individuation of the agency' (Callon, 2007: 346) that emerges in gamete donation is that of donors and recipients. As I have argued throughout Chapters 5 to 7, donor and recipient cannot be understood as entities that come to partake in the three investments examined (informed consent, phenotype matching, enforcement of variation) as already well-constituted characters. In this sense, 'donor' and 'recipient' are not *natural* entities, natures already-there. On the contrary, donor and recipient are figures whose characterisation is possible in and through the investments studied, which provide the felicitous conditions for such performations to take place. As is clear, and as suggested by Callon (2010), the configuration of such characters is always temporal and functions exclusively within the arrangement that makes it possible. Thus, acting in/through the informed consent form (Chapter 5), a person becomes a donor, a recipient, etc., but this configuration is not exhaustive or permanent; it is maintained only as long as and where the investment is maintained. A similar thing can be said about the donor and recipient who are configured in/through the phenotype matching (Chapter 6): by acting through/in the portrait picture, and by being further configured through the use of the phenotypic data form, donor and recipient are performed as figures *of* the matching; yet this configuration is always limited (in the double sense that it can fail, and that – even when successful – it finishes as soon as, and where, the investment ends). Lastly, the performation of the donor, the recipient and the offspring has been also illustrated by examining the enforcement of variation (Chapter 7). Here, I have argued, the configuration of these figures takes place by extension to the performation of siblings: if siblings are those who should not mix because they share genes, then – for the same reasons – those others who also share genes (the donor, the offspring) should also not mix.

But there are also other forms in which the agency is individualised. As has just been mentioned, the sibling is one of those who is characterised by the use of a formula which performates her/him as someone who should not mix with those who are 'the same'. In this case, (as in the configuration of the donor examined in Chapter 7), the action of probabilities is distant – they do not require the *willing* participation of those who are being performated (as in the case of the signing of ICFs, or of the use of portrait pictures), yet this does not in principle make the investment less effective in materialising the figure of that one who should not mix. Likewise, although this has not been the focus of this thesis, the fertility doctor, and the fertility centre, can also be thought as being characters ‘made possible’ by the arrangements of the clinic, where by being agenced with the devices of their practice (numbers, registers, forms) they are constituted as characters concerned with health, with respecting nature, with ensuring wellbeing, with the future of the species, with overseeing the constitution of proper kinship links, with observing the norms of proper kinship, with guaranteeing morality.

But perhaps this production of individuals and individuation can also be described in other terms, more particularly in terms of the co-extensive-ness (rather than the fixity of a dichotomy) between the abstract and the concrete, and back again. In effect, it is an insight of this research that the production of individuals is linked to, or necessitates, processes of varying abstraction and concretion – in different ways. So for example concrete individuals like those who exchange their gametes for a monetary compensation need to be abstracted from their peculiarities and produced as examples of generic kinds. This was shown in Chapter 5, where the donors’ particular motivations for donating were made irrelevant through the moral investment, and the person exchanging her gametes was performated instead as generically altruistic. This process is further illustrated by the anonymisation, or loss of personal characteristics, of those performed as (abstract) donors and recipients, and by the voluntarisation of those who are made to act as generically voluntary. In Chapter 6, it was shown how the physical and family idiosyncrasies of the donor were abstracted through the use of NID-style photographs and through particular modes of picture-procuring, thus making the donor not someone in particular, but an ‘unspecified specific’, or a specific generic (the specific combination of general traits). The chapter also showed how the specific colour continuity of the donor and the recipient (the fact that it may be difficult to accurately ascribe the colour to white, matt or brown) was abstracted through the phenotypic data form and made to come out effectively as white, matt or brown. This form of abstraction entails thus the production of abstract kinds (white, matt or brown). And Chapter 7 illustrated how the donor was enacted as an abstract character with no ethnic, environmental or physical particularities by the attempts at rendering certain measures abstract and detached. By abstraction I mean, then, the processes through which a concrete someone is deprived of uniqueness, stopped in a sense from 'being herself', and made to become, through a sociotechnical arrangement, one more example of a generic kind ('the donor'). This process of abstraction can, however, be specified, in that the abstract kind which is performated in the investment can be an abstract qualified. In other words, the concrete someone who performs *in the character of* abstract donor can in fact perform as an abstract donor who is altruistic, voluntary, anonymous, etc; in the same sense, the concrete baby who is regarded as an abstract sibling is specified by the fact that it does not mix; and the abstract recipient who becomes such in the informed consent accepts to do what all recipients do: perform parenthood. An abstract is, thus, not anyone in particular, but someone as it performs the specificities of a generic kind.

In this research, such rendering abstract by the agencement produced in a sociotechnical investment was more common in the case of the donor than in the case of the recipient, a fact that points to how the donor tends to partake in the arrangements of the clinic not in character of someone in particular, not as a representative of herself, but only as someone who is part of a generic kind. By contrast, although the person who performs as the recipient does so at times also as part of a generic (most notably, in the analyses offered in Chapter 5), Chapter 6 showed how the one(s) who are performed in the agencement as recipients are so agenced in character of themselves, that is, they become recipients not (only) by acting as generic kinds, but also as particulars. 'Particular' refers, then, to the individuality of the person(s) who act(s), thus in a sense being irremediably different to a character, an entity which can be embodied by many and thus necessarily different to a particular someone. These dissimilarities in the way the donor and the recipient are constituted in the matching are significant, as argued especially in Chapter 6, for the ways in which the future child is made to entangle with the particular recipient, and disentangle from the generic donor, and thus for the ways in which the donor and the recipient are produced as two distinct, unrelated kinds.

Lastly, besides producing abstractedness, and agencing particularity as a way of producing entanglement, the practices of fertility clinics also enact concreteness, or kinds which are concrete. By this I mean neither the abstract character as it can be performed by anyone, nor the particularity as it can be enacted only by the particular, but the production of the materiality of bodies in ways that incarnate specific colour versions. As I have shown in Chapters 6 and 7, it is the emergent product of the way in which investments are arranged that a certain *concrete* is materially preserved, specifically a concrete version of (Argentine) White (Chapter 6), and the concrete of blond and blue-eyed (Chapter 7). These are outcomes that are not preordained in the ways in which investments are originally devised, but rather made to happen immanently yet with notorious consequences for what it means to donate and use donated gametes in Argentina. In this sense, it is clear how not only is nature normatively done in Argentina, but how this doing entails the production of specific forms of nature, and specific forms of kinship. In fact, it is now possible to claim that it is the specifics encompassed within the abstract (voluntary, anonymous, free; in avoidance of re-mixing, disconnected; entangled and in acceptance of the responsibility of parenthood, disentangled and in acceptance of the detachment of the offspring), and the concreteness of the products that derive from the enactment of abstraction, that speak of the ways in which nature and kinship are done in Argentina. I say more about this in the following paragraphs.

The global, the local, the particular

Above I have accounted for the findings of this thesis in terms that can be ascribed to the logic of dichotomies but which, I have suggested, can also be re-interpreted in terms of continuity and flexibility. Thus, in the four pairings with which I have opted to recount the lessons of this work, one can find both *opposition* and *communication* between each of the compounding terms. I suggest, for example, that norms and matter need be thought together while also maintaining their distinction (not all administrative matter, not all material investments may in fact 'behave' normatively, although this is left at this point for future interrogation), a point which applies also to the relations between nature and society, individual and population, abstract and concrete. I shall now add one more layer to the complexity I have spun so far, and this is the (dis)connection between the local and the global.

In effect, as has been illustrated at several stages of this research, and because as Elizabeth Roberts (2007) has so rightly observed, ARTs are far from being an 'immutable mobile' in the Latourian sense, a set of technologies which changes place without a change in meaning, making people with ARTs in Argentina is very different to making them in other contexts. In this sense, for all that they might be 'global' and core-developed technologies (and their regulatory devices), it is an insight of this research that such technologies also always have a situated use, one which I have claimed comes in the form of an emergence. In effect, if the forms, epidemiological measures, ethical guidelines, registers, photographs, etc. that are used in Argentine reproductive medicine may in fact be part of an administrative set of IVF techniques similarly used worldwide, this research has shown that the way in which they are concretely deployed is inherently local, producing immanently, and emergently, something which might not be 'ingrained' in the bureaucratic devices themselves. This is, as I have pointed out, the (re)production, preservation and prioritization of (a certain version of) Whiteness, which is taken to sustain a certain cultural identity, and a certain form of family belonging, and which is materially more valued precisely because of such preservation and prioritization. Such a 'result' needs to be understood, I suggest, not as 'contained' in the bureaucratic devices used to administer ARTs, but rather as an emergent, local, immanent and normative actualisation.

Such actualisation involves, as my research has shown, putting a considerable amount of work into 'connecting' and 'disconnecting' Argentina from the rest: if on many occasions I was told, by way of reassurance, that 'international guidelines' were being followed, that techniques are implemented according to 'global consensus[es]', it is clear that such 'stapling' of Argentina to the developed world also sometimes takes the form of its reverse: in Argentina the phenotypic matching 'does not make sense' because 'there is not a multiraciality' (unlike in the US), while eggs are not 'sold', 'because selling is what happens in the US'. Such discriminations, that entail making clear that in Argentina commerce is not the environment in which eggs are exchanged, and population homogeneity implies that there is no need to produce coherence, are constitutively involved in what I have here empirically described as the upholding of nature's goodness, relevance, and its need for assistance. They guide, materially and pragmatically, why and how nature is to be done; yet in doing nature as a form of preservation they also appear to be involved in making nature and kinship a concrete.

Enacted through the normative material processes that have been studied here, in Argentina nature is thus performated into specific things, or kinds, and specific kinship relations between these. These are the result of the ways in which Argentine individuals and populations are 'made up' in gamete donation, a technology that produces people in the form of abstract kinds (donor, recipient, sibling, offspring, doctor). These kinds, and their kinship relations, encompass sometimes abstract specificities. These specificities are, in the case of the donor, being voluntary, anonymous, altruistic, disentangled and accepting the detachment of the offspring, being white, matt or brown. In the case of the abstract recipient, these specificities are being entangled and accepting the responsibility of parenthood, and also being white, matt or brown. For the sibling these abstract specificities entail being disconnected and in avoidance of re-mixing. And for the doctor, they involve being good, moral and respectful of nature. The enactment of such abstract kinds, their kinship relationships (entangled, disentangled, in acceptance of responsibility for the offspring or of lack of it), and their specificities, (re)produces normatively in Argentina the materialization of certain concretes (a version of Whiteness), whose emergent preservation as a concrete kind, and therefore hierarchization in relation to other possible concretes (Latino, African), makes this population enact a particular kind of kinship thinking.

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