AG AboutGender
International journal of gender studies

http://www.aboutgender.unige.it

Vol. 4 N° 7 anno 2015
pp. 209-228

How are reproductive technologies also social technologies? A comparative study of NRT use in the USA and Egypt

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Abstract

The wealth of insightful ethnographic research on NRT use in individual countries invites a comparative approach, focused on delineating the extent of NRTs' overarching and transcultural impacts on three key concepts: reproduction, kinship, and gender. In this paper, I compare and contrast the impact of NRTs on these key concepts in the sociocultural contexts of Egypt and the USA. My attempts to further delineate cross-cultural trends in the impacts of NRT use will draw together insights into NRTs' impact upon inequalities and reproductive rights, the "ideal" of biological kinship, the nature culture divide, and experiences of bioavailability.

In order to further define the overarching cross-cultural impacts of NRTs, I will consider NRTs' roles as "social technologies". I will present NRTs as social technologies in two senses. Firstly, as entities that can either disrupt or reinforce pre-existing sociocultural frameworks; and secondly as technologies that work in combination with cultural context to produce local variations within overarching trends.

By way of conclusion, I will consider how the medical sociology community can further synthesise existing ethnographic and theoretical work, to build a fuller picture of the global impacts of NRTs.

Keywords: IVF, infertility, gender, new reproductive technologies, and comparative.

1. Introduction

The term "new reproductive technologies" (NRTs) refers to «the means that are used in non-coital technically assisted reproduction where gametes are manipulated or embryos are created outside the body» (Thompson 2005, 1). The wealth of insightful ethnographic research on NRT use in individual countries invites a comparative approach, focused on delineating global trends in the impacts of NRTs. This paper will take a normative-analytical approach, comparing NRT use in the USA and Egypt in order to identify socio-cultural effects of NRTs that are consistent across contrasting cultural contexts. As part of this comparative approach, I will explore NRTs as "social technologies". I use this term firstly because NRTs in both the USA and Egypt impact upon existing sociocultural frameworks, consolidating or creating resistance to them. In this paper, I will use "sociocultural frameworks" to mean the structures of rules and conditions that govern individuals' and groups' interactions with the world. Secondly, NRTs are social technologies because they do not create these effects alone. Although we can identify overarching cross cultural trends in the impact of NRTs, local variations will exist within these trends, with their own distinct local character.

As a starting point from which to demonstrate how these processes of resistance and consolidation are affected by sociocultural context, I will compare and contrast NRT use in Egypt with NRT use in the USA. Comparing the USA and Egypt will enable us to explore how the impacts of NRTs on sociocultural frameworks hold or diverge across different cultural contexts. The USA and Egypt are significantly variant in their socio-religious contexts, development levels, and healthcare systems, as to provide contrasting

environments in which to study the impact of NRTs. In addition, significant and insightful research has been undertaken into NRT use in both these locations. To form the basis of my comparison, I will focus on Egyptian couples' experiences of NRT use, as portrayed in Marcia Inhorn's ethnography *Local Babies, Global Science: Gender Religion and In Vitro Fertilization in Egypt* (2003), with American couples' experiences of NRT use, as portrayed in Gay Becker's ethnography: *The Elusive Embryo: How Women and Men Approach New Reproductive Technologies* (2000). Inhorn and Becker have both completed extensive ethnographic work, in Egypt and in the USA respectively. I will compliment my analysis of their ethnographies by bringing in other existing work on NRT use in both regions.

The first section of this comparative study will provide context regarding infertility and the characteristics and availabilities of NRTs in Egypt and the USA. The second section will explore how the social actors that mediate existing social inequalities, in both the USA and Egypt, interact with NRTs to reinforce these frameworks of inequality. The third section will explore how infertile couples' experiences of NRTs across contrasting cultures similarly reinforce existing sociocultural frameworks, including cultural narratives such as individualism and pronatalism (the belief that the birth of children should be encouraged) the idealisation of biological kinship systems, and the nature-culture divide (the notion that nature and culture are opposite entities). The final section will focus on how and why the norms governing social relationships constitute the sociocultural frameworks that NRT usage challenges. The conclusion will summarise the socio-cultural impacts of NRTs that I have found to be overarching and common in both Egyptian and American contexts. Finally, I will pose the question as to how the sociological and anthropological communities could further synthesise existing ethnographic and theoretical work, in order to build a fuller picture of the global, transcultural, impact of NRTs.

2. Overview of NRTs in Egypt and the USA

Before developing my argument, I will outline the key characteristics of infertility and NRTs, and summarise the permissions and prohibitions that affect NRT usage in the

USA and Egypt. The World Health Organisation (WHO) defines infertility as «the inability of a couple to achieve conception or to bring pregnancy to term after a year or more of regular unprotected intercourse» (Thompson 2004, 2). However, alternative definitions of infertility may be appropriate in other social contexts. In Egypt, «conception is expected within the first few months of marriage…[and] anything less suggests infertility» (Inhorn 1996, 116). Regarding the prevalence of infertility, the WHO estimates that «infertility affects up to 15% of reproductive-aged couples worldwide» (WHO 2010, 881). In areas such as Sub-Saharan Africa, where "secondary infertility"[1] is more prevalent (as documented by Mascarenhas *et al.* 2013), this figure «rises to 30%» (WHO 2010, 881). Although infertility is frequently characterised a female issue, «men and women are equally likely to contribute to a couple's fertility problem» (Clay 2006, 44). Particularly in pronatalist environments, infertility frequently has consequences in addition to childlessness, including «depression» (Herbert *et al.* 2010, 1817) and poorer mental health and well-being during the peak reproductive years (Graham 2015).

NRTs can provide one possible solution to infertility. The NRTs that will be discussed here are: In Vitro Fertilization (IVF), Intra-Cytoplasmic Sperm Injection (ICSI), and to a lesser extent egg donation and sperm donation. A diverse range of social actors uses and seeks NRTs, including lesbian couples and single women. However, focusing on heterosexual couples, such as those in Becker's and Inhorn's ethnographies, will enable us to explore how individuals who expected to fall within perceived reproductive norms and traditions react to being outsiders as a result of infertility. Not all infertile heterosexual couples are willing or able to use NRTs. In fact, in the USA, «only 1% [of infertile women] resort to ARTs» (Chandra and Stephen 2005, Slide 23).

It is likely that low rates of NRT usage among heterosexual couples occur predominantly for two reasons. Firstly, expense is the largest barrier to NRT use. According to the American infertility association "RESOLVE", the average cost of

[1] Secondary infertility refers to «the inability to become pregnant or the inability to carry a pregnancy to a live birth following either a previous pregnancy or a previous ability to carry a pregnancy to a live birth» (WHO 2014), in contrast to primary infertility where no such previous ability existed (WHO 2014). These definitions are problematically gendered, over-emphasising the female role in infertility.

NRT treatment in the USA is $12,158 for one IVF cycle, with one ICSI attempt costing an additional $1544 (RESOLVE 2014). In Egypt prices range from $1,000-$2,000 per cycle of IVF or ICSI (Egyptian IVF Centre 2014). Due to both the largely private medical systems of the USA and Egypt, and the income disparity between the two countries, these prices make NRTs in both societies accessible predominantly to those with larger private incomes. Secondly, low IVF and ICSI success rates, which vary significantly with the woman's age, exacerbate the issue of NRTs' expense, as multiple cycles are often required. The highest rate of lives births resulting from IVF: 32.2%, were recorded for women under 35 using fresh embryos created with their own fresh eggs, receiving treatment in the USA (Human Fertilization and Embryology Authority 2014). For women aged over 45 the rate of live births from IVF (where the woman used fresh embryos created with her own fresh eggs, and received treatment in the USA) falls to just 1.9% (Human Fertilization and Embryology Authority 2014).

In both the USA and Egypt, the regulation of NRTs lies largely outside the remit of the state. In the USA, «regulation of NRTs has been almost entirely down to professional self-regulation» (Gunning 2003, 61). Professional bodies, such as the American Society for Reproductive Medicine (ASRM), advocate reproductive donation, and issue guidelines regarding elements of donation that present potential ethical issues in an American context, such as «the financial compensation of oocyte donors» (ASRM 2007). The ASRM also recommends that healthcare providers «should treat all requests for assisted reproduction equally without regard to marital/partner status or sexual orientation» (ASRM 2013).

Greater restriction of NRT usage exists in Egypt as a result of Sunni Islamic guidelines. Fatwas prohibit reproductive donation, and permit only heterosexual, married couples to receive fertility treatment (Inhorn 2006). Sunni Muslims of all classes in Inhorn's (2003) ethnography display a commitment to Sunni Islamic guidance on the use of NRTs. However, practices in Shi'a Islam provide the potential for a more flexible approach to reproductive donation under Islam. In 1999 the Shi'a marja Ayatollah Ali Khamanei issued a fatwa, which permitted donation using a temporary or "mut'ah" marriage between the husband and the egg donor. Accordingly, Sunni Egyptian couples may feel religiously justified in engaging in «reproductive travel»

(Gürtin 2011, 555) (the practice of travelling outside one's country of permanent residence in order to access reproductive health services), to predominantly Shi'a nations such as Iran, in order to access donor technology. American and Egyptian infertility patients can circumvent national laws and guidelines surrounding NRTs if they are wealthy enough to travel to access NRTs abroad.

The final important introductory point regarding NRTs concerns their status as technologies that are used across the globe (albeit to varying degrees), but that frequently take on a distinctly local character. The subtle contrasts between Becker's (2000) findings in the USA and Inhorn's (2003) findings in Egypt demonstrate that NRTs «are not immune to culture» (Inhorn 2003, 15). While we will explore overarching, cross-cultural trends in NRT use by comparing the USA and Egypt, we will find that, within these overarching trends, specific experiences of NRTs are frequently shaped «by the economic, political, cultural and moral environs in which they unfold» (Inhorn and Birenbaum-Carmeli 2008, 178). The variations in the impact of NRT use in Egypt and in the USA in fact emphasise that NRTs are social technologies because, in producing an impact on sociocultural frameworks, NRTs interact and associate with other forces: in this case with the sociocultural milieus of Egypt and the USA. This theme will recur throughout the paper as I consider how cross-cultural trends in NRT impact and use manifest themselves locally in the environs of the USA and Egypt.

3. NRTs and Inequality

This section will compare NRT provision in the USA and in Egypt, in order to demonstrate that the entrenchment of existing forms of inequality has so far been a significant cross-cultural effect of the way that NRTs are used. The first framework of inequality that NRTs reinforce is intra-national socioeconomic inequality. Three social actors: the healthcare providers and pharmaceutical companies who set high prices for NRTs, and the Egyptian and American governments that do not subsidise NRTs, make NRTs costly to access. As a result, in both the USA and Egypt, NRTs have become sites where intra-national socioeconomic inequalities are reinforced.

In both Egypt and the USA, NRTs perpetuate the phenomenon defined by Colen (1995) as «stratified reproduction». Stratified reproduction refers to «the power relations by which some categories of people are empowered to nurture and reproduce while others are disempowered» (Ginsburg and Rapp 1995, 3). As a result of the restriction of NRTs to wealthier couples, NRTs act as «social and racial gatekeepers» (Bell 2009, 693). Becker emphasises that, in the USA, «access to medical treatment has emerged as a class-based phenomenon, and, to the extent that class is linked to ethnicity, works to reduce access for men and women of colour» (Becker 2000, 20). Inhorn (2003) lends support to Bell's notion of NRTs as social gatekeepers, as the socioeconomic elites in her ethnography offer a «neo-eugenic view» (Inhorn 2003, 40) that reproductive technologies "should not be for the poor" (Inhorn 2003, 40). This insight is not intended to imply that socioeconomically disadvantaged individuals are not fighting this inequality. RESOLVE's campaigns include lobbying for provision for infertility treatment as part of public health insurance in the USA. Furthermore, Inhorn (1996, 2012) depicts socioeconomically disadvantaged Egyptian women borrowing and bargaining in attempts to gain access to NRTs. However, the fact remains that, at present, NRTs in both contexts act as social technologies by segregating reproductive health, and the ability to reproduce with assistance, along the lines of income, and therefore along the lines of race and class. This segregation reinforces existing intra-national socioeconomic inequalities.

Following on from this point, taken together, the examples of Egypt and the USA demonstrate that NRTs also currently reinforce intersectional social inequalities at an international level. The failure of Western governments and NGOs to do more to facilitate access to NRTs in the developing world privileges the reproductive rights of people in developed nations, over those of people in developing nations. Here I use the term 'reproductive rights' to refer to the rights of couples and individuals to access to reproductive health services, and to make their own informed decisions with regards to having children. Inhorn and Birenbaum-Carmeli (2008) emphasise that Western reluctance to facilitate NRT access in the developing world is based on a misrepresentation of developing nations as problematically hyper-fertile, unable to provide for multiple offspring, and therefore unworthy to access NRTs. This perception

prevails despite the high rates of secondary infertility in many developing nations, as documented by Collett *et al.* (1998), Larsen (2000) and Mascarenhas *et al.* (2013).

Not everyone agrees that lack of access to NRTs in developing nations is an "inequality" that needs to be rectified. Okonofua (1996), writing on Nigeria, argues that it might be inappropriate to «invest in an expensive curative health programme for infertility in a country that has mounting preventable reproductive health problems [and] widespread poverty and deprivation» (Okonofua 1996, 957). However, Okonofua's argument is problematic. Pennings (2008) emphasises that governments and NGOs should not focus on prevention to the extent that they «ignore the plight of people who are infertile now» (Pennings 2008, 18). Infertile individuals in developing settings have the same medical need as those in developed settings. Moreover, Inhorn (1996) emphasises that infertility causes further poverty and deprivation among those who are already poor. Provision can and should be made for both prevention and cure of infertility in the developing world. Western hesitancy to assist in providing NRTs to the global south evokes concerns that «for many women of color, the notion of a "woman's right to choose" to bear children has always been mediated by a coercive and racist state» (Talpade Mohanty 1991, 12). Western reluctance, including the reluctance of the USA, to facilitate access to NRTs in countries such as Egypt, which, at present, cannot facilitate comprehensive access to NRTs, perpetuates intersectional social inequity in the form of unequal access to reproductive rights.

The third framework of inequality that NRTs reinforce across the two cultures of the USA and Egypt is gender inequality. The debate over whether NRTs empower or oppress women has been a controversial and ongoing discussion in the field of reproductive studies. On the one hand, feminists associated with groups such as the Feminist International Network of Resistance to Reproductive and Genetic Engineering (FINRRAGE), support the view that NRTs are a «an extension of the patriarchal desire to control nature and women» (Lam 2015, 43). Contradicting this view, Goold and Savulescu (2009) have argued that IVF widens women's options as it «promotes equal participation by women in employment» (2009, 47), as women are no longer restricted by their biological clocks. However, Goold's and Savulescu's argument is problematic because for women aged 35 and over the chances of IVF being successful drop

significantly (Human Fertilization and Embryology Authority 2014). Moreover, Koropeckyj-Cox and Pendell (2007), writing on the United States, remind us that the existence of NRTs in the USA contributes to the perpetuation of the "motherhood mandate" (Russo 1976) which «equates womanhood to motherhood» (Koropeckyj-Cox and Pendell 2007, 1056). By contributing to the limitation of female identity to the identity of motherhood (a limitation that male identity does not face with regard to fatherhood) NRTs strengthen gender inequality in the context of the US. Clearly, NRTs can be highly beneficial for the well-being of individual women. However, in the current patriarchal climate, NRTs contribute to the oppression and inequality of women as a group.

It is important to clarify that the argument that NRTs reinforce gender inequality also holds for Egypt. Even though, as Inhorn (2003) argues, Western feminist criticism of NRTs as oppressive «pays little attention to the empirical reality of infertile (Egyptian) women's lives» (Inhorn 2003, 222), NRTs can still reinforce gender inequality overall in developing settings such as Egypt. Inhorn (2003) demonstrates that for many women in Egypt, becoming pregnant using NRTs can help to curtail some of the «patriarchal paradoxes» (Inhorn 2003a, 245) which infertile Egyptian women face. Furthermore, children can «serve as a valuable power resource in the realm of patriarchal social relations» (Inhorn 1996, 248). However, one should not lose sight of the fact that using NRTs to gain power within a patriarchal order represents a patriarchal bargain rather than representing real gender equality. One must keep in mind that, even though NRTs can provide some immediate empowerment to poor infertile women in Egypt, NRTs are still currently complicit in maintaining the overriding frameworks of gender inequality that both Western and Postcolonial feminists are seeking to challenge.

Overall, NRTs interact with a variety of social actors and contexts, in both the USA and Egypt, to reinforce three frameworks of social inequality: intra- and inter- national social inequalities and gender inequality.

4. NRTs relationships to other socio-cultural frameworks

This third section will move on to address how infertile individuals' micro-level interactions with NRTs in both the USA and Egypt reinforce three more sets of sociocultural frameworks: biological kinship as the ideal, the nature-culture divide, and national cultural narratives, in both cultural contexts.

Infertile heterosexual couples' interactions with NRTs reinforce biological kinship as the ideal. To provide context: the extent to which NRTs have disrupted the value of biological kinship is an important area of exploration for the field of reproductive studies. Franklin (1995) emphasises that NRTs create «a crisis of legitimacy [regarding] traditional beliefs about parenthood, procreation and kinship» (Franklin 1995, 335). In contrast, Strathern (1992) emphasises that NRTs «have had a main effect of privileging biogenetic relatedness as the ultimate and determinative form of kinship» (Inhorn 2003, 120). Strathern's argument is most convincing in relation to how the predominantly heterosexual couples in Becker's and Inhorn's ethnographies approach NRTs. Both Egyptian and American participants hierarchize available infertility treatments according to how close a solution brings them to their perceived ideal of biological parenthood. Couples in both Inhorn's study of Egypt, and in Becker's study of the USA, privilege NRTs that afford the «preservation of blood ties» (Inhorn 2003, 107) over all forms of social parenting. With regard to donors, Becker emphasises that «the donor's physical similarities to the social parent are important in that they pay lip service to the notion of biological continuity» (Becker 2000, 152). NRTs do have the potential to change the way that we value biological kinship. However, for heterosexual infertile couples, this potential does not extend to the disruption of notions of the ideal of the biologically related family. On the contrary, infertile heterosexual couples in both the USA and Egypt use NRTs in order to attempt to replicate this ideal, demonstrating that the reinforcement of the perceived ideal of biological parenthood has been a cross-cultural effect of NRTs.

Infertile couples' use of NRTs to replicate biological relatedness, in both Egypt and in the USA, helps to keep another social framework: the nature-culture divide, intact. The debate surrounding the nature-culture divide is central to new kinship studies. Rabinow (1992), and Haraway (2013) argue that advances in genetics are blending nature and culture together. However, Franklin (2014) emphasises that «the importance

of naturalizing a technique such as IVF is precisely in order to normalize it – suggesting that the grounding function of nature has not disappeared but is simply performing a traditional symbolic function» (Franklin 2014, 9). Through couples' attempts to parallel biological relatedness in their use of NRTs in Inhorn's and Becker's ethnographies, we can see ideas of what is "natural" acting upon the cultural, another overarching trend that experiences cultural variations at a local level. Using NRTs in a way that attempts to replicate 'natural' biological kinship helps to preserve infertile couples' sense of being grounded in and linked to their society's norms and ideals. This relationship of interaction between nature and culture in NRT use provides evidence of a scenario in which the nature-culture divide continues to exist.

The third sociocultural framework that Egyptian and American couples' experiences of NRTs reinforce is that of cultural narratives, of individualism in the case of the USA and of pronatalism in the case of Egypt. To begin with, I will outline the process by which couples' experiences of NRT use come to reinforce cultural narratives, before elaborating upon the specific narratives that NRT use reinforces.

Franklin (1997) emphasises that the experience of using NRTs «reduces women and couples to their biological selves, and strips them of their external identities» (Franklin 1997, 155), leaving individuals needing to re-establish a sense of self. In order to reclaim a sense of identity, infertile individuals in both studies incorporated cultural narratives into their own lives, thereby reinforcing these narratives. Giddens (1991) states that reproductive technology contributes to making the body «a phenomena of choices and options» (Giddens, 1991, 8). Yet despite the myriad of choices open to infertility patients in relation to their bodies, in both Becker's and Inhorn's ethnographies, across the USA and Egypt, patients experience a loss of agency which manifests itself as the experience of «disembodiment» (Franklin 1997, 119), that Franklin (1997) also describes in her study of NRT use. «Socially-reinforced inactivity, immobilization and inertia» (Inhorn 2003, 201) during treatment, as well as the removal of conception from the body itself, mean that NRT treatment can result in the phenomenon that Martin (1987) describes as the alienation of women from the reproductive experience. It is this alienation and disembodiment that contributes to loss

of identity in NRT patients. These experiences are particularly intensified for women, who bear the majority of invasive reproductive treatment.

Patients in both Becker's and Inhorn's ethnographies embody and reproduce their origin country's cultural narratives as part of reclaiming a lost sense of identity. Familiar sociocultural narratives are comforting when individuals lose a sense of self, providing pre-formed motivations, rationales and future directions from which infertile individuals can rebuild their senses of identity.

In Becker's study, American cultural narratives of individualism and progress are reflected and reproduced in couples' decisions to discontinue treatment with NRTs. Those in Becker's study who were discontinuing NRT treatment made comments such as «I want my own life again» (Becker 2000, 172) and «I am sick and tired of putting my life on hold» (Becker 2000, 178). Becker's participants looked to American cultural narratives of individualism and progress to direct their decisions. When the impact of NRTs on their lives fell out of step with these narratives, the couples changed their approach to their infertility, opting for childlessness, adoption or fostering.

In Inhorn's study, participants characterised Egypt as a strongly pro-natalist society in which motherhood is «culturally compulsory» (Inhorn 2003, 49). Accordingly, few participants in Inhorn's study speak of abandoning NRTs permanently. Ginsburg and Rapp (1995) state that «reproduction, in its biological and social senses, is inextricably bound up with the production of culture» (Ginsburg and Rapp 1995, 2). The couples in Inhorn's and Becker's ethnographies demonstrate the abilities of NRT patients to reproduce and strengthen the dominant narratives of their own cultures in their attempts to recover a sense of identity and direction that is initially lost during treatment.

As a clarification to the previous paragraphs, it is important to note that NRT patients are not deprived of agency as a result of their use of pre-existing sociocultural narratives to direct their future steps. Ginsburg and Rapp (1995) state that debates surrounding the way that individuals respond to NRTs frequently pit «Durkheimian models, in which the image and its interpretation are isomorphic, against reception theory…which recognises that such imagery is produced and consumed by a broad range of people who may resist, negotiate or accommodate encoded meanings» (Ginsburg and Rapp 1995, 6). The infertile couples in both Egyptian and American contexts made their own

interpretation of cultural narratives. Among Becker's American participants this personal negotiation of cultural meaning is inherent in the fact that participants are responding to American cultural narratives of *individualism*. Among the Egyptian cohort, infertile individuals frequently negotiate Egyptian narratives of pronatalism through their own personal relationships with Allah. Thus the reclamation of identity that has been lost in NRT use is characterised by individuals' interpretations and negotiations of cultural narratives, and not by the blind assimilation of these narratives.

5. NRTs and the normative frameworks governing personal relationships

This final section will now turn to the normative frameworks that govern personal relationships, which NRT users in different cultural environments challenge as they attempt to reclaim a sense of identity. The norms that govern personal relationships are challenged by NRTs, whilst other sociocultural frameworks are reinforced by NRTs, for two reasons: firstly, the normative frameworks that govern personal relationships present a directly felt challenge to infertile individuals' attempts to reclaim identity, and are therefore problematic to these NRT patients. Secondly, these challenges are present for NRT patients at a personal, everyday micro-level and so countering them oneself is feasible.

Whether NRT use challenges or reinforces sociocultural frameworks depends on the agency of the individual NRT patient. NRTs will be used to challenge norms when NRT patients feel the need and are able to enact these challenges. NRTs will reinforce sociocultural frameworks where NRT patients lack the agency or need to challenge the frameworks. With regard to the frameworks that govern personal relationships, NRT patients challenge these frameworks because peer interactions form an important part of one's identity. Giddens (1990) emphasises that the body's «practical immersion in the interactions of day-to-day life is an essential part of the sustaining of a coherent sense of self-identity» (Giddens 1990, 99). When NRT patients attempt to rebuild their identities, the norms that govern the day-to-day interactions that relate to their infertile bodies can become problematic. The normative views of friends and family regarding

the need for couples to produce children, as well as attempts by doctors to instil conventional paternalistic doctor-patient relationships, can inhibit NRT patients' attempts to rebuild self-identity as infertile individuals and as NRT patients. As a result, NRT patients are likely to challenge the social frameworks that govern these relationships.

The first normative framework governing social relationships that NRT patients resist is the conventional power gradients in doctor-patient interactions. Pilnick and Dingwall (2011) define the conventional doctor-patient power gradient as the paternalistic model in which the doctor controls the information flow and makes the majority of treatment decisions. In the USA, NRT patients counter the paternalistic model by acting as «smart consumers» (Becker 2000, 129). As infertility is not a life threatening illness requiring urgent treatment, NRT patients are more able than other patients to engage in consumer behaviour regarding their treatment, challenging the paternalistic model. Becker's study demonstrates NRT patients embodying an attitude of «consumer action» (Becker 2000, 113). Becker's participants use infertility organisations such as RESOLVE to review, rank and question fertility service providers. In Inhorn's study NRT patients engage in similar, but less organised, practices of «doctor shopping» (Inhorn 2003, 128). NRT patients use the consumer model of doctor-patient relations to challenge to the paternalistic model, regaining control over the direction of their treatment.

Additionally, couples using NRTs challenge the norms that govern the definition of the 'couple' relationship. In an Egyptian context (and to a lesser extent in a US context) the notion that «a husband and wife without children do not constitute a socially recognised definable unit» (Inhorn 2003, 227) frequently governs the trajectory of the heterosexual couple. However, the joint turmoil experienced by couples who undergo numerous cycles of NRT treatment serves to strengthen the bond between couples, keeping them together and therefore challenging the idea that childless couples do not form a recognisable social unit.

Admittedly, infertile couples undergoing treatment often lose the bond of sexual intimacy as a «private act of love, intimacy and secrecy (becomes) public, commercial and professionally managed» (Franklin 1995, 336). However, research by Repokari *et*

al. (2007) finds that «the dyadic experiences of infertility and its treatment: shared stress, bereavement and disappointments can increase a couple's feeling of cohesion and result in improvement in their marriage» (Repokari *et al.* 2007, 1488). Repokari *et al.*'s research, and other studies by Sydsjö *et al.* (2002) and McMahon *et al.* (2003), have challenged the hypothesis of Andrews *et al.* (1992) that couples using NRTs experience «reduced marital functioning» (Andrews *et al.* 1992, 1247). In both Becker's and Inhorn's studies, the majority of couples for whom infertility treatment was unsuccessful remained together, often childless, as opposed to the fertile partner re-marrying a new fertile partner. These findings are corroborated by Sydsjö *et al.* (2002) who found that the majority of couples in their study who experienced failed IVF treatment «displayed a stable relationship one and a half years after the last treatment» (Sydsjö *et al.* 2002, 1952). Thus couples using NRTs in both the USA and Egypt challenge the social perception that childless couples are not viable social units, demonstrating another cross-cultural trend in the impact of NRTs.

6. Conclusion

Overall, a comparison of NRT use in the USA and Egypt demonstrates that NRTs have a number of cross-cultural sociocultural impacts. We have seen that the interaction of NRTs with the pre-existing sociocultural frameworks of intra- and inter- national social inequality and gender inequality, and with the actors that mediate these frameworks, leads to the reinforcement of these frameworks in both contexts. Infertile individuals' and couples' experiences of NRT usage in the USA and Egypt also reinforce normative social frameworks. Couples in both Inhorn's and Becker's studies reproduce cultural narratives in order to regain a sense of identity during treatment, and also reinforce the ideal of biological kinship, and the nature-culture divide, by privileging NRTs that permit biological relatedness. Infertile individuals may also use their own experience of NRT use to challenge sociocultural frameworks relating to their personal relationships, and this was the case across both studies. Patients in both ethnographies challenge paternalistic doctor-patient power gradients and the assumption of failure placed upon many infertile marriages. Future studies could consider how we can further use

comparative work to further identify the sociocultural effects of NRT use that are consistent across different cultures.

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