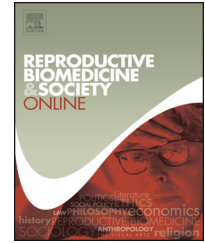




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SYMPOSIUM: IVF – GLOBAL HISTORIES

Introduction

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Abstract The contributions to this Symposium issue of RBMS have been prepared following a unique meeting held at Yale University in April 2015 entitled *IVF: Global Histories*. The articles gathered here present empirical histories of the development of IVF in various countries. These are not intended to be ethnographic, or to develop major new theoretical or conceptual arguments, but rather aim to be indicative case studies situating the development of IVF in specific national contexts with an emphasis on how particular societal influences in the various countries affected the development of the IVF industries there. To date, these histories have never been documented. This Symposium issue aims to begin to rectify this deficit, and to encourage further similar studies of the global development of IVF.

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Since its inception in England in 1978, IVF has proven not only to be an ever-more popular technology but also an increasingly global one. In addition to its well-established use in Europe, North America and other Western countries, the development of an IVF sector has a lengthy history in many non-Western countries including India, China, Iran, Egypt, Argentina, and Nigeria, to name just a few. In contrast to the famous account of the origin of IVF in the UK (Edwards et al., 2012), its emergence is less well-documented in Asia, the Middle East, Africa, and South America – despite the fact that these are regions where IVF has early, as well as deep, roots. The histories of the development of IVF in the USA, Australia, Scandinavia and Europe are thus only part of a much wider picture of the global development of the technique. In India, for example, scientists claimed to have perfected the IVF procedure at the same time as the British team of Robert Edwards, Jean Purdy and Patrick Steptoe succeeded in the late 1970s (Bharadwaj, this issue). Together with the spread of IVF throughout the wealthier developed nations of the global North, the history of its development in the global South reveals a great deal about processes of globalization and technological diffusion, as well as about global disparities and stratifications. In some regions of the world, particularly East Asia, the Middle East, and Latin America, IVF has flourished, while in other areas, especially in sub-Saharan Africa, the need for IVF is great, but access to this reproductive technology is very poor.

One of the reasons the world picture of IVF remains unevenly charted is because it is changing so rapidly. As of 2002, IVF services were available in only about one-quarter of the world's nations – mostly the affluent, Western nations, which accounted for 91 percent of the world's gross domestic product (Collins, 2002). By 2007, that fraction had expanded to nearly one-third of the world's nations (Jones et al., 2007). By 2010, more than half of the world's nations had developed, or were on the cusp of developing, IVF services. In that year, between 4000 and 4500 IVF clinics were estimated to exist globally (Jones et al., 2010). More than one-quarter of these clinics were located in just two countries, Japan (606 to 618 clinics) and India (more than 500 clinics). Yet, not all of the rapid post-millennial expansion in IVF provision occurred in the West or in the 'Asian tiger' nations. By the mid-2000s, both the Middle East and Latin America were home to two of the most rapidly expanding IVF sectors, with widespread regional coverage and the existence of many clinics in some countries. As of 2009, nine Middle Eastern countries could be counted among the 48 countries performing the most annual assisted reproductive technology (ART) cycles per million inhabitants, with Israel ranking ahead of all the world's nations, followed by Lebanon (6th), Jordan (8th), Tunisia (25th), Bahrain (28th), Saudi Arabia (31st), Egypt (32nd), Libya (34th), and the United Arab Emirates (UAE, 35th). Although Latin America ranked in the lowest quartile of IVF clinic development, nine Latin American countries – Argentina, Uruguay, Brazil, Chile, Peru, Mexico, Ecuador, Dominican Republic, and Guatemala – made the list of the top IVF-performing nations (Adamson, 2009). The successes of these three regions – Asia, the Middle East, and Latin America – stand in stark contrast to sub-Saharan Africa, where only one-quarter of all countries hosted an IVF

clinic as of 2010 (Jones et al., 2010). Three nations – Ghana (7 clinics), Nigeria (16 to 20 clinics), and South Africa (12 to 15 clinics) – can be considered comparative regional success stories. However, as summed up by a European Society for Human Reproduction and Embryology (ESHRE) Task Force *Providing Infertility Treatment in Resource-poor Countries*, sub-Saharan Africa consists of 'islands of high-tech infertility treatment in a sea of generalized poverty and medical neglect', a situation that was deemed 'highly inappropriate' (ESHRE Task Force on Ethics and Law, 2009).

Given the rapid development of IVF services that has occurred worldwide throughout the first 15 years of the 21st century, we might expect to see more social scientific study of this remarkable technological transformation. However, despite the fact that the global development of IVF reveals both intriguing patterns of technological diffusion, as well as familiar evidence of stratification, the globalization of IVF remains relatively understudied. Indeed, the global spread of IVF – which might be considered one of the most successful examples of translational biomedicine to have emerged during the 20th century – has been traced in a very small number of journal articles (Inhorn, 2003a; Inhorn and Patrizio, 2015) and edited volumes (Hampshire and Simpson, 2015; Inhorn and van Balen, 2002). Unlike the Internet, mobile phones, the Human Genome Project or Facebook, IVF has rarely been analysed as a transformative global technology (Franklin, 2013), and thus its global history remains largely unwritten.

We emphasize 'largely unwritten' because it is hardly the case that the rapid worldwide spread of IVF has gone entirely unnoticed by scholars working in the humanities and social sciences. On the contrary, there is ample evidence of the emergence of a new interdisciplinary field of reproductive studies, in which the role of reproductive technologies – including everything from contraception to IVF – figures prominently. In sociology, history, psychology, demography, law, philosophy, economics and many other disciplines, the social implications of ART have been extensively studied. This journal, *Reproductive Biomedicine and Society (RBMS)*, is itself a reflection of this trend. And what is timely about *RBMS* is precisely its ability to bring these fields closer together, and to facilitate the effort to draw out some of the more generalizable conclusions that emerge from their ever-closer union. To achieve this end, we need to work both within and beyond disciplines simultaneously. Within the disciplines we need to identify patterns in the findings and lessons learned over time, and thus to gain the benefit of increased scale. And to scale-up even further, we then need to work across disciplines to build a bigger and better picture of what the rapid global expansion of IVF can tell us, including how it can inform policy and practice as well as social analysis and basic science (Inhorn and Patrizio, 2015).

In this Symposium we contribute to this process from the discipline of anthropology. Generally called 'social anthropology' in Europe and 'cultural anthropology' in North America, 'socio-cultural' anthropology has also spawned a large and evolving sub-discipline called 'medical anthropology' (Inhorn and Wentzell, 2012), with which most of the contributors to this special issue would readily identify. Since the study of reproduction and kinship are two core disciplinary themes in anthropology, it is not surprising that

the study of ART has become so prominently established that it is now considered canonical in anthropology (Strathern, 1992), and taught in introductory anthropology textbooks (e.g., Wiley and Allen, 2012). Although anthropological approaches are less commonly invoked in mainstream debates over IVF than other disciplines such as bioethics, law, theology or social psychology, anthropology is in fact one of the main sources of empirically-based research on the social implications of ART worldwide (Inhorn and Birenbaum-Carmeli, 2008). Moreover, the perspective from anthropology is uniquely global. For more than a quarter of a century, IVF has been the subject of ethnographic research by anthropologists, resulting in a rich scholarly literature comprised of detailed local, regional and national portraits of the development of this technology in more than 30 countries. In addition to hundreds of journal articles, numerous book-length ethnographic studies (anthropological monographs) have documented the local development and reception of IVF in many countries, including Ecuador (Roberts, 2012), Egypt (Inhorn, 1994, 2003b), India (Bharadwaj, 2016), Israel (Kahn, 2000; Nahman, 2013), Italy (Bonaccorso, 2009), Lebanon (Clarke, 2009; Inhorn, 2012), the Netherlands (Gerrits, 2016), Thailand (Whittaker, 2015), Turkey (Goknar, 2015), the United Kingdom (Edwards, 2000; Franklin, 1997; Edwards et al., 1999), the United Arab Emirates (Inhorn, 2015), and the United States (Becker, 2000; Sandelowski, 1993; Thompson, 2007).

Importantly, these studies have not aimed to evaluate the success or failure of IVF, nor to determine its moral or ethical legitimacy, but instead have used highly qualitative descriptive methods to chart the distinctive characteristics of IVF in specific local, regional and national contexts and to identify the changing cultural values, norms and rationalities with which this technology is most closely linked. As such, a key theme in much of the anthropological literature on IVF has been the interplay between existing definitions of conception, parenting and kinship, and their transformation in the context of new forms of technological assistance to reproduction (Franklin and Ragone, 1998; Ragone, 1994; Strathern, 1992). Anthropologists have argued, for example, that IVF both reproduces and changes ideas of 'biological relation' because while many IVF users continue to refer to the fundamental importance of personal biological ties, they also manipulate the meanings of this term to accommodate a wide range of previously unimaginable forms of relation – some of which have new names, such as 'donor parent', 'surrogate mother', or 'Google baby' (Franklin, 2013). Many anthropological studies of IVF and other forms of assisted conception belong to what are known as the 'new kinship studies', in which social changes in basic definitions of the relationship between parenthood and procreation are analysed in order to develop new analytical models of social relations (Carsten, 2000, 2003; Edwards and Salazar, 2012; Franklin and McKinnon, 2001).

During the 1980s and the 1990s, when the anthropology of ART was still in its infancy, too few studies existed to undertake any systematic comparison. It was not until the first decade of the new millennium that a sufficiently large body of anthropological work on infertility and IVF began to enable comparative work, which Inhorn and her colleagues promoted through a series of publications on IVF and its globalization (Birenbaum-Carmeli and Inhorn, 2009; Inhorn,

2003a, 2003b; Inhorn and Birenbaum-Carmeli, 2008; Inhorn and Tremayne, 2012; Inhorn and van Balen, 2002). The sheer scale of anthropological work on IVF had been dramatically transformed from the earlier decades, in which only a few scholars specialized in the anthropology of ART. As Inhorn and Birenbaum-Carmeli (2008) documented in their publication for the *Annual Review of Anthropology*, entitled *Assisted Reproductive Technologies and Culture Change*, by the middle of the first decade of the new millennium, this topic had become mainstream. They noted that 'more than 50 anthropologists around the globe are producing a rich body of ART scholarship' (2008, p.179), adding that 'ARTs not only reflect, but contribute to, the construction of global power relations and new notions of local modernity' (2008, p. 180). As a consequence, they argued, 'ARTs are a key symbol of our times [and] an illuminating lens through which to examine contemporary social relations during a very fluid, complex epoch' (2008, p. 186).

As both a symbol of technological change, and a vehicle for social transformation, IVF increasingly deserves to be the subject of global comparative study. Only recently, however, has the task of critically assessing the anthropology of IVF begun to be undertaken more systematically, with a view to characterizing its major findings and most generalizable conclusions. This assessment is revealing key features about the social organization of IVF technology that demonstrate how closely reproductive technologies are interwoven with projects of social, moral and national reproduction, at the same time they are changing personal, familial and conjugal identities.

This kind of systematic, comparative, anthropological analysis is the focus of this Symposium issue. The papers presented here represent the outcome of a unique, two-day international workshop called *IVF: Global Histories* which was organized by Marcia Inhorn and Sarah Franklin and which was held at Yale University in April 2015. The workshop represented the first-ever gathering of many of the anthropologists who currently research IVF around the globe. Their research spans countries in the West, the Middle East, and Asia, with fewer of them working in Latin America and sub-Saharan Africa. Indeed, Latin America has a thriving IVF sector, which is anthropologically under-represented, while Sub-Saharan Africa, with its underdeveloped IVF sector, has at least two anthropologists devoted to it. Because this Symposium issue reflects the countries in which anthropologists happen to work, certain countries and regions are not represented, even if they happen to be IVF 'powerhouses' (e.g., Argentina, Brazil, Chile, Japan, and Korea).

This Symposium issue, then, reflects the current state of IVF ethnography, in which papers initially presented at the Yale workshop were honed through discussion and revision for publication. In the invitation letter from the workshop organizers, the 16 participants were asked to prepare papers reviewing the emergence of IVF in the country in which they were undertaking their ethnographic research, in part by reviewing any existing ethnographic literature on the subject. It is important to note that anthropologists are not trained historians; but for the workshop they were asked, in effect, to prepare short accounts of the means by which IVF began and became institutionalized within the country they had studied, and

to offer anthropologically informed reflections on what was distinctive or notable about the 'history' of IVF within that particular locale.

Over the course of two days, pre-circulated papers were discussed by the 16 participants in a closed workshop format. Like many paper assignments for small workshops that are intended to open up new perspectives on an established topic, the brief for *IVF: Global Histories* was not only ambitious but also provocatively bordering on the impossible. Whereas some participants worked in countries with long traditions of IVF ethnography (e.g., the US, Denmark, and Israel), most of the anthropologists at the workshop were the only ones studying IVF in their particular country. This meant that there was very little literature to review in some countries – or none at all save that of the author. A consequence of this pattern was that our contributors were often forced to adopt the role of a descriptive narrator, looking back at the early days of IVF in a given country and attempting to describe how the first clinics were set up, the first babies born, and how these events had been reported in the national press, the professional scientific journals, and in the wider academic literature. Another difficulty arose from our explicit request to authors that they look back at their own work and consider revisiting topics which they felt had possibly been underemphasized, or which might have acquired new significance since they were initially reported. While for a discussion paper this suggestion made sense, it created the difficulty that some of the material in the articles drafted for the published Symposium was drawn from previously published work. Inevitably, there were other discrepancies, too: In some countries IVF has a very recent history, while in others it is much longer and more complex. Similarly, no 'history of IVF' is ever exactly that: Like all histories of technological innovation, IVF histories are social, economic, political and scientific as well as regionally specific. And while distinctive and specific, no regional account of the emergence of IVF is ever just an isolated local one. Ultimately they are all world histories involving complex connections across time and space.

If asking participants to attempt such a difficult task had its inevitable disadvantages, the organizers' hope, nonetheless, was that the results of the workshop would exceed the sum of its parts. Our goal was an experiment in comparison never previously undertaken. We deliberately urged our contributors to offer open-ended, descriptive accounts since we felt that the benefits of comparison would only become visible once the entire set of papers was put together. This proved to be the case – although we are still left with more questions than answers. There remains an enormous amount of work to be done before we can extract the most generalizable conclusions from the disparate data that emerge from comparing IVF histories cross-culturally.

Indeed, the immediately most striking fact is quite simply the enormous range of variation among national IVF infrastructures, which often differ radically, even in otherwise similar and/or adjacent countries. Equally notable is the substantial amount of change within individual nations over time, and the often dramatic shifts in policy and practice that combine to produce the characteristically 'zig-zagging' development of IVF. Although some drivers that shape IVF provision (or lack thereof), such as religious beliefs, might

seem to explain a large proportion of the considerable national variation in how IVF services are socially organized, it is simultaneously evident both that pressures from religious authorities can be side-stepped, ignored or overridden, and that many other factors play an equally important role – including economics, popular media, charismatic individuals, high profile court cases, and political leaders or parties (to give just a few examples). Complicating the diversity of the already highly varied national histories of IVF are its multiple rationalities, diverse uses and locally specific logics of practice. After all, in addition to being a technology for making babies, IVF is also a technology for making many other things – including national pride in scientific achievement, hope for the infertile, and proof of modernity and progress (Franklin, 1997, 2013). The path taken in relation to IVF provision can express the cultural and religious values that demarcate a country or region – sometimes by distinguishing it from neighbours, and sometimes by following other countries' leads (Inhorn et al., 2010; Inhorn and Tremayne, 2012).

In charting these different paths to IVF across the globe, we found useful in our discussions several analytic concepts that deserve brief mention here. Across the globe, we observed a pattern of specific national events – such as the role of influential clinics, media coverage of IVF, public controversies and court cases, political and legal decisions, religious edicts, or maverick individuals/teams – moulding IVF provision into a specific shape. We thus described these as 'reprognational histories'. The early history of IVF in the UK, for example, can be characterized by a number of key influences, including the persistence of the Edwards, Steptoe and Purdy team in Oldham when funding was refused, the comparatively supportive governmental climate toward permissive legislation, increasing public demand for infertility treatment, the lack of effective religious opposition, and an intermittently favourable national press (Cunningham, 1991; Franklin, 1997; Mulkay, 1997; Johnson et al., 2010; Johnson and Theodosiou, 2012). Over the course of the longer term, British IVF has come to represent not only the country's longstanding commitment to scientific achievement in the name of national health, but also its commitment to a liberal but highly regulated IVF sector, which is backed up by an Act of Parliament (Jackson, 2001). The UK's reprognational profile is characterized by a stable social consensus favouring a primary commitment to scientific progress subject to the rule of law over religious values, party politics, or market forces. In contrast, the USA's reprognational history has been shaped by a combination of powerful religious influences, free market principles, an absence of federal regulation, and prominent social divisions concerning many forms of reproductive intervention, including abortion, contraception, embryo research, and IVF (Becker, 2000; Spar, 2006; Thompson, 2007; Thompson, 2016).

A second concept we found helpful in comparing the diverse developmental pathways of IVF across the globe was 'reprognational choreographies' – a term inspired by Charis Thompson's useful phrase 'ontological choreography' in the making of IVF babies (Thompson, 2007), and that we use to describe the specific movements, or mechanisms, resulting in the distinctive reprognational histories that characterize, for example, IVF in the US versus IVF in the UK. Since IVF is

a technology enabling unprecedented control over human reproduction, it is hardly surprising that the terms of its provision are shaped by powerful social forces, and thus we would expect that these would vary significantly internationally (Jasanoff, 2005; Johnson, *in press*). As a previous Symposium issue of our partner journal *Reproductive Biomedicine Online* illustrated (Inhorn and Gürtin, 2011), the rapid expansion of cross-border reproductive care (CBRC), involving massive movements of people in search of IVF across borders, is both a consequence and a measure of the high degree of variation in the world's ART sectors. In turn, this high degree of reproductonal diversity has become a driver of specific regional practices – as in the case of the U-turn taken by the Emirati establishment when it decided to transform its British-inspired IVF sector from a global marketplace into one more reflective of local religious sensibilities (see Inhorn, *this issue*). We found that such movements, or shifts, are typical of IVF histories in most countries: in Denmark a brief period of more conservative IVF provision was swept away by an incoming government based on a revised calculation of the long term economic costs and benefits of offering this technique (Mohr, *this issue*); in Turkey government subsidization of IVF cycles dramatically increased citizens' access to IVF while at the same time legally banning access to third-party donation (Gürtin, *this issue*); in Thailand the controversy over the fate of a specific child – Baby Gammy – led to radical changes in the entire ART sector, in yet another not-atypical example of an IVF U-turn (Whittaker, *this issue*).

In such instances we see not only the complex shifts and movements through which reproductonal histories are re-choreographed, but we are reminded again of the important role of IVF as a symbol of national values. As the Danish anthropologist Tjørnhøj-Thomsen (1999) argued in her very early study of IVF in Denmark, IVF is a technology of social belonging as well as a means of overcoming infertility. As the narratives of infertile couples from many studies demonstrate, the desire to pursue the hope that IVF offers is not only a desire for a child *per se*, but a response to all of the social values linked to parenting, intergenerational community, kinship and succession. Consequently, IVF is also, in Tjørnhøj-Thomsen's phrase, 'a technology of social contract' (1999, p.216) which implicitly suggests also that IVF can be understood in terms of 'reproductive citizenship' – as a form of belonging (or not) to a national body politic and its continuity over time.

Returning to the question, then, of how we understand the distinctive developmental pathways IVF has taken in diverse countries such as China, India, Mexico or Mali, we need an account of the specific local dynamics that shape the IVF sector in each national context, but we also need to consider how IVF becomes a more general expression of social contract, reproductive citizenship, and national belonging. From an anthropological perspective, we would expect the social organization of human reproduction to implicate a wide range of practices and institutions – from politics, law and economics to religion, science and the media. Likewise we would anticipate that individual expectations of IVF are socially complex, and consequently that the form of IVF provision in any country will be interpreted as an expression of individual as well as collective needs. For all of these reasons, the changing choreography of

reproductive services in any country must be interpreted in symbolic as well as practical terms, and as a part of the way in which citizens and societies are constituted – legally, socially, ethically and biologically.

Although specific local moral, cultural, and social values and practices have been critical in the development of each country's reproductonal history, it is also important to bear in mind the significant degree of international collaboration that has been involved in some of the stories of IVF development reported here. As shown in this Symposium issue, the globalization of IVF to diverse countries in the global South often entailed the work of 'IVF troubadours' (Simpson, *this issue*) – clinicians, usually from the West, who literally carried the practices and infrastructures of IVF from one nation to another. In Ghana, Uganda, and the UAE, for example, teams of Western experts were sometimes imported, or at least collaborated with local practitioners, teaching them IVF and inculcating a Western standard and ethics of practice. Having said this, 'transplanting' IVF from one place to another has not necessarily led to uniform outcomes. As Inhorn has argued elsewhere (Inhorn, 2003a, 2003b), the 'globalization' of IVF is always shaped by the 'local', leading to significant accommodations, hybridity, and sometimes to outright rejection of certain IVF practices at a local level. Such variations and curtailments of IVF are often linked to moral anxieties, bioethical conundra, and legislative impasses, as shown in many of the reproductonal histories described in this Symposium issue.

To date, IVF has often been viewed as a form of fertility treatment largely available to privileged Western consumers in the global North, and in general as a technology that affects relatively few people. As the country-specific studies in this Symposium reveal, however, IVF plays a much larger role in the definition of social, cultural and national values and identities than has perhaps been fully recognised in the past. From the perspective of understanding IVF as a highly symbolic technology that can reflect a variety of values and ideals, its influence may be far greater than has to date been acknowledged. It is for this reason that IVF needs to be analysed in terms of how it connects together ideas about national belonging, parenthood and science, as well as gender, fertility and generation. From this perspective, IVF's reproductonal histories raise issues that concern us all, and remind us that the governance of reproduction is a fundamental part of social, economic and political life.

Ultimately then, the reproductonal histories of IVF speak to the local complexities. Anthropology, with its dedication to ethnographic rigour and its devotion to fine-grained social and cultural analysis, is ideally positioned to explore the fascinating local–global dynamics of the development of IVF worldwide. Indeed, this is the goal of this first-of-a-kind *RBMS* Symposium issue, which charts the historical trajectory of IVF as a very 'local' global technology.

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