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## ARTs and the problematic conceptualisation of declining reproduction

ANINDITA MAJUMDAR

### Abstract

*The routinisation of assisted reproduction in India has led to its proliferation and the easy identification of infertility. However, clinical and popular discourse tends to focus primarily on age-related deficiencies in reproduction. Here, both the “dangers” of declining reproduction as well as the facilitation of delayed reproduction are areas of focus and eulogisation. Bringing together the diverse elements of the medico-social conversation, the aim of this commentary is to examine the ways in which the ARTs are used to make sense of declining reproduction.*

### Background

In its representation in academic literature and in life, ageing is seen as a state of decline and debilitation. Its physical markers are associated with regression and a slowing down of the “normal” body. In the process, more often than not, ageing has conceptually also been compared to a pathological,

diseased state of being. This is especially so in relation to women’s bodies, where the idea of ageing within biomedicine is associated with progressive reproductive decline (1,2). This conceptualisation of ageing and its association with reproduction is the most provocative in contemporary medical practice and ideology.

In this commentary, I discuss how ageing and aged bodies become signifiers of failed and resurrected reproduction. This is particularly evident in the case of assisted reproduction through the use of technologies such as in-vitro fertilisation (IVF) and/or intracytoplasmic sperm injection (ICSI), besides other assisted reproductive technologies (ARTs) that are becoming popular in the “curing of infertility” as an emerging health problem. The paradoxical position that ARTs occupy within the socio-medical discourse on infertility is seen in the ways in which the failure of the technology to “cure” is often projected on to issues of age (3), just as the technology promises to alleviate the obstacles of age in seeking infertility treatment. However, the recent public fear of the ticking “biological clock,” especially with regard to working women in their 30s with no children - and the associated fanfare surrounding the birth of children to 70-year-old women through IVF (4) - has led to questions regarding how infertility and ARTs are marking ageing and reproduction in India.

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Besides surrogacy and donor insemination, which have received much academic and policy scrutiny in the past few decades, the linkages between infertility and ageing remain largely unexplored in the Indian context. This is significant, considering the popular perception that those who have reached a particular age that “makes biological reproduction difficult” seek ARTs. In the West, emerging literature within the vast corpus of writing on infertility and technology is now beginning to explore the ways in which age and ageing are “manufactured” in the infertility clinic and within infertility diagnosis (3,5–7). Maya Unnithan (8) has looked at the idea of reproductive ageing in relation to menopause in India, linking it to the classic study of menopause in Japan by Margaret Lock (9) that looked at how local notions regarding bodily processes do not always adhere to global medical notions regarding the same.

Underlying all of these concerns is the huge demand for ARTs that the reproductive tourism industry and the IVF–surrogacy industry cater to (10). The projections of large revenue earnings and the popularity that ARTs have in India have nonetheless not impacted public health interventions. The absence of a linkage between infertility and public health is connected to the way in which reproduction is understood in terms of population policy rhetoric, along with the corresponding association of infertility to a “lifestyle disease” affecting only a minority (11,12). This is problematic considering recent studies that suggest that infertility is not necessarily a “lifestyle disease impacting the urban rich”, but also impacts those living in rural and semi-urban areas and those belonging to the middle and lower middle classes (11,13). Despite this, most IVF clinics operate as private clinics providing niche, relatively expensive treatment to couples seeking fertility interventions.

For some years now, the Indian Council of Medical Research (ICMR) has drafted several versions of the Assisted Reproductive Technologies (Regulation) Bill (ART Bill) at the behest of the Ministry of Health and Family Welfare, Government of India, of which the 2010 and 2014 versions are the most cited (14,15). The bills aimed to control the use of ARTs amongst prospective parents and clinicians and covered aspects such as donor insemination, surrogacy, and the use of IVF. However, in September 2016, the Government of India unveiled a new draft bill called the Surrogacy (Regulation) Bill, 2016 (Surrogacy Bill) (16), which explicitly laid down the foundation for altruistic surrogacy, enacted a ban on commercial surrogacy, and set an age limit (for women, until 50, and for men, 55) to hire a surrogate. This was significant because an age cap to access ARTs had not been articulated before in the ART Bills.

In 2015, I conducted a brief pilot study at a private IVF clinic in South India regarding the process of imaging and imagining human gametes in the ultrasound and extraction stages of IVF. This was a follow-up study after my doctoral research of more than five years on commercial surrogacy, ARTs, and kinship in India (17). At the clinic, I found that medical processes map the human body through diagnostic tests that construct certain

ideas of ageing that are then coalesced with chronological ageing. Such diagnosis is the most acute for women, often identifying their eggs or oocytes as “aged” or “depleting”. Such diagnosis is not restricted to semantics alone (2) but is visually measured through these tests. In addition, the idea of ageing and declining gametes is now being extended to men as well, in the “quality” of sperm that a man would ejaculate for IVF. This is particularly provocative considering that new research in the area of infertility is now beginning to focus on men and masculinities that are formed through the process of infertility treatment and sperm donation (18). The ICSI technology aims to “hand pick” the best of the lot and manually inseminate the egg with the sperm in a petri dish, for higher success rates.

What forms of “age” and “ageing” are becoming part of the conceptualisation of decline within assisted reproduction? Below, I present three aspects of declining reproduction within the ARTs that are deeply problematic. As the thematics of the biological clock, post-menopausal reproduction, and infertility as chronic develop, they blend into each other in representing the ways in which ARTs work in identifying declining reproduction.

### **The biological clock**

How is the biological clock to be understood? Why is its linkage to reproduction so particularly popular? The perception of a ticking clock and time that speeds is an important part of the fear linked to the body as progressing towards an ending. That reproduction figures within such narratives both as a form of ending—but also a beginning (through the birth of children and kin)—needs more engagement.

Infertility medicine thrives on the perpetuation of the fear of the biological clock, which is coming to mark women and their productive years at increasingly lower ages. Thus, recent popular reportage suggests that after her 30s a woman is susceptible to increasing decline in reproduction and the reproductive body. Primarily, the “decline” in women’s reproduction is linked to the idea that women are positioned negatively in linear progression towards diminishing fertility, finally culminating in menopause.

The language of decline is predominantly imagined as a ticking time bomb, fixated especially on the falling oocyte reserves. “It has been suggested that at age 37 there is a sudden acceleration in the decline in each woman’s egg pool.... In addition, egg quality declines with age, but the rate and pattern of this decline are less certain” (19: p 3). The quality of the remaining oocytes is further under question in discussions regarding the health of the “aging” mother. The impact of advanced maternal age, identified to be after 35, is also seen in the form of “increased risks of gestational diabetes, placenta praevia, breech delivery, pre-term (and low birth weight) delivery, emergency and elective caesarean sections, and stillbirth” (19: p 3).

With such a long list of consequences, it means ARTs become an important and essential source of having children.

A number of prescribed biochemical (such as follicle stimulating hormone [FSH], anti-Mullerian hormone [AMH], and sonographic (antral follicle count [AFC]) tests are used to determine the quality and quantity of oocytes available in the ovarian reserve (19: p 4).

In popular discourse regarding the biological clock, which focuses on the gendered reproductive body heading towards decline, women's lifestyle choices become the focus of laments and hysteria. News reports successfully create these linkages leading to an image of infertility that is choice-based, in other words, voluntary, and part of a gendered rhetoric on the body and modern lifestyles.

*A new term doing the rounds on the infertility front is 'voluntary infertility' – a typical urban Indian syndrome. At the root of it is the idea that 'biological clock' is not a myth - 90 per cent of a woman's eggs degrade at the end of her 37th year. And at the centre of this phenomenon is the educated, independent, career-minded New Woman, who defers marriage or childbearing till she can afford all the good things in life. But by the time she decides to have a baby her biological clock often slows down (20).*

In a piece titled "The foul reign of the biological clock," Moira Weigel (21) suggests that "[T]he biological clock's cultural role was to counteract the effects of women's liberation... the existence of a biological clock [was] proof that women could not venture too far from their traditional roles... [defining] female life in terms of motherhood, or the failure to become a mother" (21).

The hysteria surrounding declining reproduction amongst women has led to research suggesting that women indulge in "reproductive expediting" or more frequent sexual activity as they grow older to "capitalise on their remaining fertility" (22: p. 516). Such ideas reposition women in their reproductive bodies despite increasing research and feminist critiques against the overwhelming control of the biological clock (3).

Tomlinson (23) explores how the representation of women's bodies as pathological is part of the rhetoric that depends on "intensification" of particular aspects of the human body—similar to reproductive decline. This intensification in language is not only evident in the medical representations of the "flawed" female body heading towards menopause (2, 23) but also in the representation of the "aging" mother herself—as seen in popular representations questioning women's choices that take them away from motherhood.

Yet the male reproductive body has remained beyond the bounds of the "biological clock," with mythologies of perpetual fatherhood seeming to make male reproductive ageing seem impossible. But newer research has begun to identify the long-term impact of late fatherhood in the form of autism and schizophrenia—and the gradual decline in sperm quality and production as a form of male menopause, also known as andropause, without the complete pause in reproductive capability (24). Research seems to suggest that if the male

partner of a woman aged 35+ is older than 40 years of age, the child is likely to develop genetic and other birth abnormalities (19,25). The "weak" sperm is increasingly the focus of research and the intervention of assisted reproduction: "Women should thus no longer be viewed as solely responsible for age-related fertility and genetic problems. Infertility is not just a woman's problem, and awareness of the male biological clock will allow couples and their physicians to proceed with proper testing, diagnosis, and (if needed) treatment of the male partner (24)."

The gendered biological clock is coming full circle in identifying declining reproductive bodies that need active and constant intervention of ARTs. In attempting to circumvent decline amongst women that menopause heralds, the ARTs are repositioning women's, and men's, reproductive bodies as under the constant threat of a permanent "pause".

### Postmenopausal reproduction

In May 2016, 72-year-old Daljinder Kaur became a mother to an infant son in the North Indian state of Punjab. The news was widely reported and mentioned the intervention of ARTs such as IVF for achieving the impossible (26). Daljinder and her husband, Mohinder Singh Gill, 79, had been childless for the most part of their married life until they decided to visit the local IVF clinic. This incident was not a stray event; over the past decade, many couples in India have been seeking assisted conception to overcome years of childlessness (27). The "miraculous" nature of such births is one of the reasons for the increasing popularity and focus on ARTs. In recent years, India (especially in the northern states of Haryana and Punjab) has seen a rise in post-menopausal motherhood with women and men of ages ranging from 60 to 80 years birthing children. This alarming trend has led to childless seniors seeking parenthood by actively engaging with ARTs and the subsequent mushrooming of IVF clinics in small towns to cater to this particular demand (27). Nonetheless, the technologies are not without fault - such as inflated success rates, chemical pregnancies, and serious health risks (28) - and are based on notions of fertility that must match ideal, typical conditions to be able to mimic a "natural" conception and birth.

The "post-reproductive" world is where age and ageing do not follow a chronological mandate; here, nature is constantly being manipulated and re-manufactured to provide solutions for "better living" (29). Age is the biggest source of manipulation, especially through hormone replacement therapies (HRT), to extend women's reproductive lives and delay the "death knell" that comes with menopause. The post-menopausal, then, are really not so much menopausal as they are post-reproductive. Grappling with the question of defining ageing couples having children through IVF means a reconceptualisation of chronological ageing itself. The biological clock under such circumstances stands exposed, making it necessary to conceptualise menopause in relation to menstruation to be able to understand how IVF reverses the "lack" in cases of "post-menopausal" women to facilitate the

birth of a child. When does reproductive life begin, and when does it end?

For Margaret Lock (1), the cross-cultural engagements with menopause (in her case, the study of Japanese menopausal women) means that bodily “decline” is not felt similarly everywhere. She finds that even though menopause is a biological process, it has cultural and racial meanings attached to it. The intervention of technology within such a narrative adds further complexity. That the aged seek such technology to resume a productive and reproductive life means that the idea of regeneration itself is coming under scrutiny. So, while modernity is the signal of moral and societal degeneration as seen in the emergence of old age homes and neglect of the elderly in India (30,31), the post-modern is seeking to regenerate the elderly into productive lives to prevent their social dissolution.

I would like to link the above argument to reportage that links the desire for children amongst the elderly infertile as means to ensure continuity and inheritance (27). Couples like Daljinder and Mohinder may have tried different forms of conjugal arrangements to overcome their infertility and childlessness, until the advent and intervention of IVF, signalling the importance given to biology and genes within this desire for children. In other words, the desire to *bear* children seems deeply entwined with the desire to *rear* them. Research has contradictory findings regarding the elderly and their experiences with childlessness (32). For instance, some research suggests that de facto childlessness<sup>1</sup> may have very little to do with involuntary infertility but more to do with social support as one ages (34). However, demographic trends in Europe suggest declining populations as women and men age and put off reproduction (35). The positioning of childlessness for social support can never be discounted. An IVF specialist in Haryana, where reportedly many of the ageing, senior couples have conceived children, is called the “rogue doctor” for facilitating conception amongst those who are socially seen as being of “inappropriate age” to be parents (36). Such images are constructed within the IVF community, reflecting on the paradox of how declining reproduction becomes an important part of ARTs and their preponderance.

### Infertility as chronic

In a recent news report, an IVF specialist is quoted as saying, in response to fears of declining fertility in the state of Telangana in India, “We are seeing a constant increase in infertility due to various reasons like late marriages, increasing incidence of polycystic ovary syndrome (PCOS), consumption of junk food, obesity, and even endometriosis” (37). Through public discourse, IVF specialists create a sense of the infertile as not only medicalised but also demanding immediate medical intervention. However, the nature of the technology and treatment create a sense of long-term debilitation, whose cure, ironically, rests upon the achievement of a single treatment of conception and the following pregnancy and birth.

In the aforementioned news piece, sociologist Satyapriya Rout connects declining fertility to a future with an ageing population: “While it [declining fertility] might not be a cause for immediate concern, in the long run the overall population will begin to reduce and can have several implications—like a huge ageing population (37).” The fear of decline and age is mesmerisingly enmeshed, and infertility is a sign of early decline and ageing. In theorising infertility, an association with the chronic may not have been explored fully yet. However, in reality, the nature of chronicity plays out in the framing of the “disease”.

This is seen especially in recent studies linking infertility to toxic environments. Clinical and epidemiological studies linking infertility to urban environmental toxicity are emerging as a major intervention. Largely because the linkages are not immediately evident (38), studies draw data from women and men visiting fertility clinics, and from particular regions. The regional differences become an important marker to assess the impact of urban environmental toxicity on fertility and reproductive health. In a review of available clinical studies, Foster finds that the weight of evidence and consistency of data linking fertility and fecundity, endometriosis, and spontaneous abortion to pesticides, dioxins, dibenzofurans, and PCBs (polychlorinated biphenyls) range from weak to moderate; none of the connections are overtly strong. According to Manderson and Smith-Morris,

*The distinction of chronic–acute is inaccurate even in strictly biomedical terms, since the notion of acute fails to distinguish between: (a) conditions that are relatively benign and self-limiting; (b) those that are life-threatening; and (c) those that shift from an acutely symptomatic phase to an extended period of poor health and physical limitations, as is characteristic of numerous medical conditions that have effective medicinal or therapeutic approaches (39: pp 3–4).*

The above formulation of the difficulty in conceptualisation plays out in relation to infertility treatment through its process and consumption. While positioned as chronic in seeking out continued treatment, the state of medicalised childlessness is seen as “acute” by the patients. The desire for a child and its immediate redressal are “acute” but come to be manufactured within the prism of “chronicity”. The state of infertility is both “self-limiting” and extended over long periods of “poor health and physical limitation”, which are brought on through the use of ARTs. Without ARTs, infertility is childlessness, a social state that does not impact bodily negotiations medically, though it may involve other alternative forms of healing (40).

However, their association with harmful urban lifestyles and increasing infertility has become staple fodder for public conversations moderated by infertility specialists. This makes good business sense while at the same time pushing for the traditional biomedical perception of the female body as “perpetually pathological” and thereby suffering from chronic, inevitable infertility.

## Conclusion

“Denaturalising ageing” involves, “[t]aking charge of aging is a prime objective today, in part because of government worries about the burden of aging populations on economies worldwide, and extensive investment is being made into the development of enhancement technologies for this purpose” (29: p. 201). This is what marks the engagement of ARTs with declining reproduction.

The destabilisation of chronological ageing through the “remaking” of biology in popular discourse and practice necessitates the use of ARTs and makes infertility an ultimate biological reality. Infertility has long moved away from a primarily social affliction to becoming the pursuit of genetically related children through the use of technology.

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## Note

- 1 “The de facto Childless are those who cannot rely on care from their children because relationships have broken down or because children have physical or mental disabilities, lack the resources to offer support or have moved away” (33: p 208).

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### Advertise with IJME

IJME welcomes advertisements for the print issue as well as the website.

- IJME does not carry ads from healthcare-related companies, including those for pharmaceuticals, medical devices, spare parts for medical equipment, and beauty/fitness related services and products.
- All content must be sent in the formats/dimensions mentioned below
- For more details visit [www.ijme.in/advertise](http://www.ijme.in/advertise) or write to [fmesmumbai@gmail.com](mailto:fmesmumbai@gmail.com)

Print and website rates for financial year 2018-19 are as under

#### (A) Print

SINGLE ISSUE (ONE QUARTER)				
COLOUR SCHEME	TYPE	DIMENSION (cm)	FORMAT	RATE
Black and white	Full page	24 height x 18 width	High resolution Pdf/jpeg	25000 INR
Black and white	Half page	12 height x 18 width	High resolution Pdf/jpeg	15000 INR
Black and white	Quarter page	10 height x 8.8 width	High resolution Pdf/jpeg	6500 INR
Colour cover – inside/outside	Full page	24 height x 18 width	High resolution Pdf/jpeg	40000 INR
FOUR ISSUES (WHOLE YEAR)				
COLOUR SCHEME	TYPE	DIMENSION (cm)	FORMAT	RATE
Black and white	Full page	24 height x 18 width	High resolution Pdf/jpeg	85000 INR
Black and white	Half page	12 height x 18 width	High resolution Pdf/jpeg	50000 INR
Black and white	Quarter page	10 height x 8.8 width	High resolution Pdf/jpeg	25000 INR
Colour cover – inside/outside	Full page	24 height x 18 width	High resolution Pdf/jpeg	125000 INR

#### (B) Web

Clickable Ads will be placed on the homepage in any of the following dimensions and will redirect to a landing page (the link to which should be provided along with the matter).

TYPE	DIMENSION (pixels)	FORMAT	PLACEMENT
Banner	60 height x 832 width	High resolution jpeg/tiff	Top of homepage, under navigation bar, covering middle and right columns
Box	165 height x 257 width*	High resolution jpeg/tiff	Top right, below the navigation bar
*In case of more matter, the height may be increased up to 180 pixels			

TIME PERIOD	RATE
One month (30 days)	20000 INR
One quarter (corresponding to issue cycle)	50000 INR
One year	200000 INR

#### (C) Print and web

- In case you have already taken a print advertisement for a colour cover, you may avail a website ad for 30 days for an additional sum of 10000 INR
- You may also advertise for a whole year (colour cover for 4 issues + website ad for entire year) for a sum of 300000 INR