

# There are more things in Obstetrics and Gynaecology, Horatio, than are dreamt of in your Philosophy – Part I

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## Abstract

This paper will review contemporary advances in fertility and sterility and future prospects for the treatment of such conditions.

## Introduction

The field of modern medicine is vast in breadth and depth beyond individual comprehension, and mere mortal doctors are only capable of assimilating a single particular speciality in medical studies.<sup>1</sup> Moreover, as new science and technology evolves, so too does the practice of medicine and the advancement of its myriad specialties along with the inception of new subspecialties,<sup>2</sup> further compromising the possibility of interdisciplinary dialogue, since ‘although the primary concerns, sources of evidence and concepts remain the most important nodes of difference among natural scientists, [...] social scientists, and humanists, the three communities vary on [...] additional dimensions’.<sup>3</sup>

The acquisition of knowledge and skills, and their continual update and upkeep, is coloured and complicated by diverse ethical and moral considerations, with doctors today performing seemingly contradictory work within their specialties, and nowhere is this more evident than in the field of obstetrics and gynaecology,

where doctors may be asked to assist an infertile couple or to advise on contraception, to perform a sterilisation procedure such as a tubal ligation, or attempt to reverse the same procedure, and to assist in a birth, sometimes surgically, or to terminate a pregnancy. For example, radical decisions with regard to rendering oneself infertile, usually for contraceptive purposes, and later changing one’s mind must be very common indeed as evinced by the sheer number of cases portrayed by Silber and Grotjan who reported vasectomy reversal in 4010 cases.<sup>4</sup>

To further complicate matters, these very different procedures may be carried out on the very same individual at different stages of the individual’s life, with diverse ethical dilemmas.<sup>5</sup> This duality in role is simply a reflection of the varied and varying condition that is inherent in human nature, never perfect and never content.

## Infertility and Sterility: Definitions and Overview

Virtually every significant scientific advance, medical progress included, gives rise to a new challenge for moral philosophy. Thus, while modern medical techniques have greatly enlarged and refined humanity’s choices, decision-making by individuals becomes progressively more problematic. This is particularly evident in the field of infertility, a branch in medicine that is traditionally dealt with by specialists in obstetrics and gynaecology. Some definitional considerations would be appropriate at this stage, and the International Council on Infertility Information Dissemination

(INCIID) considers a couple to be infertile (or subfertile) if they have not conceived after a year of unprotected intercourse in women under 35 years of age, or after six months in women over 35 years of age, and in women who are incapable of carrying a pregnancy to term.<sup>6</sup> Medically, infertility is subdivided into two broad types: secondary infertility is the inability to have a child after having conceived at least once, while primary infertility is the inability to ever conceive.<sup>6</sup>

It is estimated that about 10% of couples in the developed world experience infertility, and that this number rises up to 30% in developing countries

The difference between infertility and sterility is that a sterile individual is unable to contribute to the conception of a child at all, whereas an infertile individual can potentially contribute toward a successful pregnancy but is prevented from doing so by one or more physical or psychological factors. For individual couples whose children are ‘kidnapped, abducted, and killed’,<sup>7</sup> their loss constitutes ‘a hegemonic social and cultural construction of the late twentieth century and a dominant structure of feeling [...] phenomena, also connected to the several theories that warn that childhood is disappearing or that we are witnesses to the ‘end of childhood’.<sup>7</sup> Thus, at the level of the individual couple, infertility frequently has catastrophic psychological effects on individuals involved, and may have a devastating carry-over effect on their relationship.<sup>8</sup>

### Causation and epidemiology

Infertility may arise from a multitude of causes. Very briefly, female infertility may be caused by ovulatory problems that are often hormonal in nature, such as polycystic ovary syndrome or premature menopause; blocked Fallopian tubes (such as with sexually transmitted diseases) that prevent released ova from encountering spermatozoa or even result in a potentially fatal ectopic pregnancy that ruptures a Fallopian tube with

massive internal bleeding; the inability of a fertilised ovum to implant into the uterine wall; the inability to carry a pregnancy to a viable gestation: genetic or chromosomal abnormalities in the potential mother; and a general deterioration in fertility after the age of thirty years, with a progressive decline in the ability to conceive and carry a pregnancy to term. Male infertility is usually caused by poor sperm quality, with seminal fluid that contains few or no sperm (oligospermia and

azoospermia respectively); or sperm that is poorly motile and incapable of reaching the ovum (asthenospermia); or by the production of sperm with abnormal morphology (teratospermia). Rarer causes include erectile dysfunction and retrograde ejaculation. Males also experience reduced fertility with declining sperm quality with age.<sup>9</sup> A modern, reversible and almost science-fictional cause of contemporary male infertility is working with a laptop on one’s lap, as this heat source is detrimental to sperm production.<sup>10</sup>

Infertility is not an uncommon problem. It is estimated that about 10% of couples in the developed world experience infertility, and that this number rises up to 30% in developing countries where sexually transmitted diseases are more rampant due to lack of prevention (contraception and education) and treatment. In the 1960s, syphilis and gonorrhoea were the only significant sexually transmitted diseases and were easily treated with penicillin. Today there are over twenty known diseases with an estimated twelve million newly infected individuals each year, and over half of these infections occur in persons under the age of twenty-five, with increasing rates of antibiotic resistance. These diseases damage the reproductive organs of both sexes, sometimes irreparably, with a resulting loss of fertility that may be permanent.<sup>11</sup>

Spread is facilitated by the fact that 80% of infected (and potentially infectious) individuals are asymptomatic.<sup>12</sup> Young women are more susceptible to these infections than older women, with higher rates of pelvic inflammatory disease that obstruct Fallopian tubes.<sup>13</sup> Contrary to popular belief, barrier contraceptive techniques reduce but do not eliminate the risk of acquiring sexually transmitted diseases.<sup>14</sup>

Moreover, both sexes in developing countries are exposed to higher levels of dietary and environmental toxins, including cigarette smoke, than populations in developed countries, and such toxins are known to depress fertility due to their deleterious effects on gametes.<sup>15</sup> S

to be continued

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