

THE WHITE COLLAR

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Rewriting the Laws of Conception

"When I found so astonishing a power placed within my hands, I hesitated a long time concerning the manner in which I should employ it. Although I possessed the capacity of bestowing animation, yet to prepare a frame for the reception of it, with all its intricacies of fibres, muscles, and veins, still remained a work of inconceivable difficulty and labour."
- Chapter 4 Frankenstein 1818

This excerpt from Mary Shelley's iconic 1818 novel Frankenstein describes the moment man attains the ability to give life to a lifeless body. It is a fitting place to start this discourse, concocted in fiction; it quite aptly surmises the limits of acceptable and unacceptable endeavour through medical advancement.

The Perfect World

Imagine a world devoid of disease or infirmity. A world where human beings no longer have disabilities or genetic predispositions to ailments like Cancer, Diabetes or even the HIV virus. The genetic traits for these ailments having been identified and eliminated long before conception to ensure that every new born baby is healthy and genetically designed to be "perfect". In this world, human beings from before they are even conceived, as sperm and egg cells are "screened" and "designed" to have the most genetically advantageous features. Height, complexion, athleticism, intellect are all modified to varying degrees to give the child the best combination of features to allow them excel and even thrive at particular careers, and all this even before conception happens. Anyone may be forgiven for thinking this world is implausible or farfetched, even just some scientific fiction of a time far from now, that is however, until they realise that the basic technology to achieve this already exists, even here in Nigeria, today.

The Technology

The term "Designer Babies" refers to babies that have been genetically "edited" to enhance beauty, intelligence, as well as being free from disease before they are even conceived. The technology to make this possible- **In Vitro Fertilization (IVF)** is already gaining significance and importance in Nigeria where child-conception has a strong cultural overtone and, as in most developing nations, is a seriously impassioned area of medicine. IVF itself is a critical medical procedure that enhances child-conception.

As part of the procedure and to ensure the best likelihood of conception, blood, ultrasound and a Pre-implantation Genetic Diagnosis (PGD) are carried out. Now today PGD allows the detection and screening of genetic diseases and conditions that may be passed on from parent to child by checking the genes in each embryo i.e. the potential human offspring to become a baby. In fact by identifying the chromosomes in each embryo PGD allows the prediction and selection of the gender of the baby. Along with a person's genetic history (familial predispositions), blood work tests reveal some basic information about the probable success rates or other incompatibilities by identifying particular considerations, such as genotype disorders, average Red and White blood cell count, cholesterol, glucose levels etc.

Today we know that there is a correlation between, for example white blood cell count and immunity, cholesterol and obesity or glucose levels and diabetes to consider only a handful of basic health indicators. And while the exact nature and predictive technologies concerning



such factors may not exist as an exact science, even the technologies that do exist allow doctors to screen the healthiest specimens of embryos, their gender and screen major inheritable diseases that are likely to occur.

Playing At God

It is therefore not farfetched to imagine what may be added to scientific capabilities in the near future- height, complexion, hair type, intellect, beauty, athleticism- these are all but a combination of genes and chromosomes yet to be unlocked. A combination, which is, now firmly out of the grasp of humanity, but may one day soon be obtained, and when that day comes what should be done with such capabilities? Some believe that this is an unwelcome intrusion; a foray into divine territory, "playing God" is the term that is vividly evoked in our minds. But others, those for whom this knowledge and these techniques mean the difference between life and death, or parents and children spared critical illnesses prevented by these medical technologies of tomorrow may themselves say that once *Penicillin* was viewed with suspicion and *Heart-Pacemakers*, the technology preserving the lives of millions today, was once seen as irreverent and unnatural, yet today it is part of the medical capabilities of the 21st century.

The Good - "First Do No Harm"

It is in this unknown, in the grey space between what we know, what is perceived as acceptable and what is perceived as "unnatural" or an intrusion into the natural order of human life that the law will step in to regulate the minimum standard of acceptable conduct and practice. Ultimately provoking the question "What is legally acceptable modification of a human embryo?"

Medical ethics and philosophy will of

course direct us to the longstanding history of self-regulation and the employment of all medical procedures, including these new capabilities being developed, within the strictest of Bioethics codes, we are quickly reminded of one of those foremost precepts ~first do no harm~ the principle by which all healthcare professionals are to be guided. In fact the use of PGD to select gender is often first based on medical reasons i.e. to specifically eliminate chromosome-based diseases that occur more in one gender for parents that have a particular predisposition to such diseases.

These medical technologies are developed to be applied for the benefit of humanity. For instance 3D Printing technology- the ability to precisely manufacture a three dimensional object from digital specifications, in November 2015 was used to predetermine how an adult kidney donated by a 35 year old father would save the life of his 3 year old daughter and the same technology has actually been used to produce a living sample of a kidney. When we imagine what can be achieved when combined with stem cell research for instance- using dynamic human cells to replicate damaged or infected ones, the possibilities are astonishing.

The Bad and the Ugly

However the reverse is also the case, many times these technologies are used to perpetrate purposes that directly interfere or threaten the traditional notions of human existence. For instance the ordinary gender ratio of any specie, including man is naturally 1:1- for every male there is a female counterpart, however India's population ratio by gender is 1.08%- i.e. for every woman in India there is more than one man. To put this clearer, India has 35 million less women than men. Census data in India also shows that the reduction in girl-children correlates with medical improvements in technologies enabling

the monitoring of unborn fetuses.

China, the world's largest nation by population has a gender ratio of 1.1% and is more skewed, with 51.3 million less women than men. The impact of the 37-year one-child policy has had the effect of creating a significantly aging population where according to current projections in another 34 years 1 in 4 Chinese will be over 65 years.

The Law as the Delimiter

It is in a bid to prevent such perceived "abnormalities" that the law becomes the delimiter of what is acceptable. Nearly 50 nations have passed laws or policies that prohibit the use of sex-selection procedures in national medical centres except where there is clear medical benefit to do so. These countries include of course China and India with the greatest skew in gender ratio, but they also include Egypt, South Africa, Morocco, Tunisia and Yemen. In Europe some 21 countries subscribe to the same perspective on the matter, they include the United Kingdom, Germany and France. Notably the United States does allow sex-selection techniques for family balancing purposes i.e. where a family has an imbalance in the sex of children born.

The Council of Europe's **Convention on Human Rights and Biomedicine**, (the Council of Europe is the body within whose structures the European Court of Human Rights operates and through which the European Convention on Human Rights are enforced) speaks to the issue clearly in:

Article 12 - Predictive genetic tests

Tests which are predictive of genetic diseases or which serve either to identify the subject as a carrier of a gene responsible for a disease or to detect a genetic predisposition or susceptibility to a disease may be performed only for health purposes or for scientific research linked to health purposes, and subject to appropriate genetic counselling.

Article 13 - Interventions on the human genome

An intervention seeking to modify the human genome may only be undertaken for preventive, diagnostic or therapeutic purposes and only if its aim is not to introduce any modification in the genome of any descendants.

Article 14 - Non-selection of sex

The use of techniques of medically assisted procreation shall not be allowed for the purpose of choosing a future child's sex, except where serious hereditary sex-related disease is to be avoided."

The Grey Area

IVF as a critical medical procedure should not be compared in significance with the aesthetics of plastic surgery or even to the creation of so called "Designer Babies". The purpose of this discourse is by no means to trivialise this procedure that has revolutionised this area of medicine. Rather the object of this discourse is to inspire thought on the area here at home in Nigeria. We do not currently have laws prohibiting very many cutting-edge procedures that medicine is beginning to develop- that is not to say that we need laws in these areas, nor is it to say we do not. What it should do for us is turn our minds to the great leaps and bounds being made in these areas of human endeavour, and to ensure that we understand how they affect us today and could affect us in the future as a nation, and in so doing enable us to plan how we want to take advantage of them and allow them shape us.

One proverb of unknown origins says, "May you live in interesting times". Undoubtedly, we do indeed live in interesting times; times when reality begins to seem like fiction, and fiction, reality. The question though is, how and what these interesting times will shape and transform us?