

RESEARCH ARTICLE

Sanctity of the human genome as foundation of life

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Abstract

In times before ethics and laws were formalised, it was commonly held that human life is sacred since it is divinely ordained and because of this divine intervention human life must be protected by implication due to it being holy. As a result, people often assume that this meant that human life is completely inviolable. This view of life is more prominent in western religious philosophies and had been raised in many legal debates about human life such as abortion and euthanasia. To ensure survival and peaceful coexistence the uniqueness of human life was emphasized so that people would respect the worth of human life. This respect entailed values such as equality and autonomy and incorporated both reciprocal rights and obligations to one another. History, in the form of wars and pandemics, has proven that when legal systems ignore these basic human rights, it will lead to tyranny and anarchy. The atrocities committed during the Second World War prompted nation states to collect the values of human life into a single concept termed ‘human dignity’. This term was then adopted as a new form of legal humanism deriving its basis from the concept of sanctity of human life. The recognition of this concept enables an entire set of human rights and obligations to find practical application on a universal basis setting apart from the diverse religious and other philosophical views on human life.

Keywords: human genome; human dignity, human rights, sanctity of human life, sanctity of human genome

1. Background

The significance of human life was debated amongst the greatest philosophers since the beginning of time. Bertrand Russell, prominent British scholar, opined that man instinctively encapsulates himself within his private interests, but should man desire a life of greatness and freedom, he needs to escape this private capsule filled with individual interests. Russell's prescribed solution is knowledge, because he views the acquisition of all knowledge to be an enlargement of man himself.^[1] An inquiry into the meaning, nature and value of human life, as captured in the human genome, may allow us to understanding ourselves as well as our relation with other humans, including our rights and obligations to each other as well as future generations, especially when gene editing is involved.

2. Sanctity of human life as a universally accepted doctrine

The government signatories to the Atlantic Charter in which the international organisation known as the United Nations was founded, have subscribed to a common program of purposes and principles, being convinced that victory over their World War II enemies is essential to defend life, liberty, independence and religious freedom and to preserve human rights and justice in their own, as well as in other lands.^[2] During World War II a general need existed to concretely shape the concept which could be treated as a

common standard and enforced in a common forum, irrespective of differences in religion, race and language which applies to all human beings unlimited by geographical boundaries. Subsequently, the inherent worth of human life was recognised and the word dignity was used in place of sanctity to describe the recognition of this unique value or status of man. This recognition was not only practical, but also ensured peaceful coexistence that overcame religious, political and ideological differences. After World War II the United Nations General Assembly formalised and embedded the concept of human dignity in articles 1 and 2 of The Universal Declaration of Human Rights on 10 December 1948.^[3] This declaration further served as the foundation for the International Covenant on Civil and Political Rights^[4] and the International Covenant on Economic, Social and Cultural Rights^[5] which both protect human dignity, amongst others. The concept of human dignity can also be found in other international treaties such as the International Convention on the Elimination of All Forms of Racial Discrimination,^[6] the International Convention on the Elimination of Discrimination Against Women,^[7] the United Nations Convention on the Rights of the Child,^[8] and the United Nations Convention Against Torture.^[9] Any violation of human dignity, which need not necessarily be a physical act, but can also be psychological in nature such as discrimination and social exclusion, subsequently denotes the violation of self-

worth, which constitutes the violation of human rights.

3. Sanctity of human life in the context of gene therapies

Gene editing and other gene therapies allow scientists the ability to modify one little detail in the whole DNA sequence of an organism in such a way that it may cure or even prevent certain diseases.^[10] Considering that any changes to an individual's genes will inherit to his or her offspring, genes can be seen as a relationship that links generations and represents the physical reality of this intergenerational relationship. This link is therefore 'generative' in the sense that alterations within the composition of genes will alter the shape, structure and functional capabilities of the bodies and minds of generations to come.^[11] Although we cannot directly experience human genes, we know about its effects in the context of familial relationships. Nevertheless, in our everyday lifeworld and intergenerational relationships, genes exist as knowledge in the sense that we know that we have inherited certain traits.^[12] However, these novel therapies are thrive with scientific uncertainty and ethical questions which are prominent among gene editing, genetic mapping, human cloning, the application of certain types of rDNA technology, embryonic stem cell research and pre-implantation genetic screening and diagnosis.

Primary apprehensions and doubts in these areas had centred around the concept of the

sanctity of human life and question the fundamental notions and values of human life now and in future generations. Specific concerns entail possible physical, psychological and social repercussions of these scientific endeavours which may include the susceptibility of human nature itself to genetic modifications which results are not yet scientifically certain or known. These effects are not only confined to the individual but also affect entire communities and populations. In addition, the commercialisation of gene therapies demands a serious inquiry into the effect these types of interventions have on the sanctity of the human genome which should aim at protecting the interdependent interests of human beings, consisting of man's physical and psychological integrity, his status in society and his dignified position as part of humanity.

Gene therapies clearly affect a multitude of human rights such as right to life, bodily integrity, autonomy and privacy that are all based on the internationally recognised concept of the sanctity of human life. Further considering that this concept also affects future generations, there exist a clear need to adequately regulate human gene therapies and genomic research.^[13]

4. Scientific views towards the concept of life

Different scientific methods tried to provide some understanding of the concept life in theories like the big bang^[14], bio genesis^[15] and evolution^[16] which introduced new perspectives on nature and

man's position within it. As a result, the philosophical thinking which attributed divine intervention as the basis of the worth of human life was increasingly displaced by these scientific theories.

Rene Descartes approached the concept of life based on his famous reasoning '*Cognito, ergo sumor*, I think, therefore I am' in an effort to provide certainty to the existence of man, rather than relying on metaphysical explanations as the ultimate truth behind the existence of man.^[17] He thus conceived man as an immaterial thing with faculties of intellect and will.^[18] The era of scientific humanism, however, required man to respect nature and other beings as a whole due to the fact that man is also conceived as being part of nature. Albert Einstein observed in this regard that 'a human being is a part of the whole, which we call the 'universe' which is limited in time and space. He experiences himself, his thoughts and feelings as something separated from the rest – a kind of optical delusion of his consciousness. This delusion constitutes a prison that restricts us to our personal desires and to affection for a few persons close to us. Our task must be to free ourselves from our own prison by widening our circle of compassion to embrace all humanity and the whole of nature in its beauty. Nobody is able to fully achieve this but striving for such achievement is itself a part of the liberation and foundation of inner security.'^[19]

These views dispel the common belief that science and scientific methods do not

consider any value systems that has been studying the different aspects of man to fully understand life through a vast array of scientific methods such as physiology, psychology, sociology, physics and chemistry. In his Nobel prize winning work 'Man the Unknown' Dr Alexis Carrel emphasizes the importance of scientific methods that investigate all aspects of human life to enable us to understand man by stating that '[t]he essential needs of human being, the characteristics of the human being, the characteristics of his mind and organs, his relations with his environment, are easily subjected to scientific observation. The jurisdiction of science extends to all observable phenomena, the spiritual as well as the intellectual and the physiological. Man, in his entirety can be apprehended by the scientific method. But the science of man differs from all other science. This science alone can give birth to a technique for the construction of society. In the future organisation of the individual and collective life of humanity, philosophical and social doctrines must give precedence to the positive knowledge of our selves'.^[20]

This view of man acknowledges the fact that man consists of a complex collection of materialistic particles including a sub conscious, a soul, rational faculties, intelligence, whilst being part of the community, environment and economy in which he or she lives and belongs.

5. Sanctity of human life as a human right

Most of the discussions about the underlying philosophy of human rights have always centred around the concept of the sanctity of life and the notion that by nature humans are equal.^[21] Cicero claimed the term 'dignity' to express the view that humans have a special status by virtue of being humans when compared to other creatures which later on also signified that human life had an inherent worth which has to be recognised by every legal system that exists.^[22] Locke then observed that individuals should be free to decide how to live their own lives on condition that they do not interfere with the liberty of others, thereby strengthening the concept of sanctity of life and respect for the life of other as the foundation of human rights.^[23] Kant felt that the concept of human rights and worth of life must be acknowledged as a universal phenomenon and John Rawls, a neo Kantian philosopher, stated that 'each person possesses an inviolability founded on justice that even the welfare of the society cannot override.....therefore in a just society the liberties of equal citizenship are taken as settled, the rights secured by justice are not subject to political bargaining or to the calculus of social interest'.^[24] In 'Sovereign Virtue: The Theory and Practice of Equality',^[25] Dworkin expresses his view that all human beings are responsible for their own choices they make in life and echoed in the writings of Morris and Linda Tannehill who claimed that man has a right to

ownership over his life and property because he invested time in it, thereby extending his life.^[26] However, man did not extend time or energy in the creation of his own genes and should therefore not have any entitlement to ownership in respect thereof, but as man may have a say in the modification of the genes that will be inherited by his or her offspring and therefore that of future generations, man should still, in line with these views, be responsible for his decisions. Kant's moral philosophy founded many human rights declarations and movements, whilst Dworkin's philosophical reflections gives hope for resolving some of the contemporary ethical and human rights issues. Any discussions about human rights are thus based on the essentials of sanctity of human life, or respect for the inherent value of human life of the individual, as well as the life of fellowmen.

6. The application of sanctity of life in legal system

Vitalism, the quality of life and the intrinsic value of human life are the three main approaches that justify the concept of the sanctity of human life. Vitalism tries to establish human life as the supreme good that must be preserved at any cost. Quality of life emphasizes that human life is not inherently valuable because it is merely used as an instrument to do good and that its value depends on meeting a specific threshold of quality or usefulness. This approach is founded on the belief that certain lives are simply not worth living and may rightfully and intentionally be

terminated. To the contrary, the approach based on the intrinsic value of human life specifies that all humans possess an inherent and inalienable value, regardless of usefulness.

All legislation, regulations, rules, norms and guidelines originate from a system of values. Legislative processes generally decide on values from a group of competing values that best serve societies' needs and grants preference to certain values over the other, claiming to uphold the moral values of that society. Policy makers can thus not afford to ignore the concept of sanctity of human life because it is a fundamental norm on which all other moral norms and regulatory frameworks are based and validated. The philosophical nature of this concept does not intend to provide answers to specific problems but rather provides standards to apply when the laws and regulations that govern such issues are appraised. This application is confirmed by Kant who viewed the nature of this concept not as a rule of conduct but a formula for testing rules of conduct.^[27] This concept can thus be seen as a spectrum of values that range from the preservation of the human species to the inviolability of the human body and mind. The concept of sanctity of human life also establishes the principle that humans must respect and foster his fellowmen in order to sustain their own survival. This principle can thus be used as a test of the survival of any legal system and as a primary norm to every law under that legal system. Regardless of the differences in terminology used to describe this concept,

any law that touches on any aspect of human life needs to reflect this principle and uphold the values embedded in it. Subsequently the concept that the sanctity of human life is inherent in every individual by virtue of him or her being a human being thus came to be recognised by all major legal systems and ingrained into many constitutional schemes through the term 'human dignity.' Human dignity entitles every individual equal respect and consideration by the state as well as from fellowmen. This will not only ensure equality of all individuals before the law and will limit the state's power.

In the landmark South African case in which the death penalty was abolished, the Constitutional Court discussed the various international legal approaches to the right to dignity.^[28] The principal arguments advanced in support of the contention that the imposition of the death penalty for murder was a 'cruel, inhuman or degrading punishment,' were that the death sentence was an affront to 'human dignity' and therefore inconsistent with the unqualified right to life entrenched in the South African Constitution.

In the *Gregg v Georgia* the court found that although the United States Constitution does not contain a specific guarantee that the concept of 'human dignity' has been accepted by the United States Supreme Court, but that this concept does indeed constitutes the core of the prohibition of 'cruel and unusual punishment'.^[29] In terms of the South African constitutional order the right to 'human dignity' is

specifically guaranteed and can only be limited by legislation which passes the stringent test of being 'necessary'.^[30] The weight given to 'human dignity' in the *Gregg v Georgia* case is similarly echoed in the South African constitution. In Germany, the Federal Constitutional Court has stressed that respect for 'human dignity' requires the prohibition of cruel, inhuman, and degrading punishments and that the state cannot turn the offender into an object of crime prevention to the detriment of his constitutionally protected right to social worth and respect.^[31] That capital punishment constitutes a serious impairment of 'human dignity' has also been recognised by judgments of the Canadian Supreme Court.^[32]

7. Conclusion

Only by fully understanding ourselves and our relationship to and with other humans can we adequately regulate people's rights and obligations to one another. Due to its inheritable nature, gene editing, amongst other advanced scientific developments, will have an impact on the intergenerational relationship between people. The evolution of the concept of

sanctity of human life to the universally accepted concept of 'dignity' has now been entrenched in numerous international regulatory instruments to protect this and other human rights which provides a backdrop and context in which gene editing and other advanced therapies must be judged having regard to its effect on future generations. Science accepts that humans can only be fully understood by investigating all the aspects of a human being that consist of physical, psychological and intellectual aspects. Although the vulnerability of human life and dignity was tragically exploited during the Second World War, the protection of the sanctity of human life, in the form of dignity, has since been universally formalised in many declarations, national constitutions and case law. Courts can now enforce these rights and order protective steps against violations thereof. Sanctity of human life and dignity have come a long way, but further evolution and protection thereof is needed to also protect future generations that will suffer and/or enjoy the results of, or even be the products of scientific and medical advancements to ensure a society in which human rights are still valued.

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14. Big bang theory is the cosmological theory on the early development of the universe. According to the theory, the universe was originally in an extremely hot and dense state that expanded rapidly. This expansion caused universe to cool and resulted in the present diluted state that continues to expand today.
15. Abiogenesis is the study of how biological life arose from inorganic matter through natural processes and the method by which life arose on this earth. Most amino acids called building

- blocks of life can form via natural chemical reactions unrelated to life.
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 22. Cicero points out that man is superior in nature to cattle and other beasts since animals do not have thought except for sensual pleasure and this they are impelled by every instinct to seek. But man's mind is nurtured by study and meditation, he is always either investigating or doing and he is captivated by the pleasure of seeing and hearing. Though man is inclined to sensual pleasure, he is little too susceptible to attractions of pleasure. According to Cicero, sensual pleasure is quite unworthy of the dignity of man and we ought to dispose it and cast it from us. Cicero, M.T. De Officiis Book 1, XXX. Walter Miller (trans.). www.constitution.org/rom/de_officiis.htm (accessed 13 July 2020)
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