**Genetic Moral Enhancement: A Flawed Concept.**

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**Abstract**

This article criticizes the idea of genetic moral bio-enhancement presented by Julian Savulescu in his several publications. Savulescu thinks that personality has a genetic basis and suggested moral enhancement of future generations through selection of human embryos with better personality traits and selectively aborting the rest of them. Current paper discusses some of the major flaws in the theory and emphasizes improvement of future generations through modification of socioeconomic conditions, which could play a more vital role in shaping human morality.

**Keywords**:

Enhancement; moral enhancement; selective abortion; eugenics; genetic screening.

**Introduction**

“Any change in the biology or psychology of a person which increases the chances of leading a good life in the relevant set of circumstances” is termed as human enhancement (1). Whereas use of biological means (e.g. biotechnology) to enhance human capacities is termed as bio-enhancement. Similarly, if such biological means are used to increase human capacities to develop moral behaviors, this will be termed as moral bio-enhancement. The ultimate goal of human enhancement therefore is to improve persons’ well-being, as demanded by the certain set of circumstances. Therefore, any increase in human capacity (life span, IQ etc.) will not be considered as enhancement where increase in human capacity is not beneficial to a person, even if it increases the level of human capacity beyond the normal levels (1).

Julian Savulescu is a Professor and Director of the Institute for Science and Ethics and co-director of the Oxford Martin Program on Geoengineering in University of Oxford. He has contributed substantially to the literature related to ethics of genetics, however many of his theories are controversial and widely debated. He is one of the great supporters of an interesting, yet controversial, theory of genetic enhancement in human beings. In an issue of Reader’s Digest published in 2012(2), Savulescu had emphasized on the genetic moral bio-enhancement of future generations through embryonic screening for personality flaws and selective abortion of such flawed embryos. According to Savulescu, such morally elite people will be of greater advantage to the society (a utilitarian stance) therefore, it is a “moral obligation” of the parents to raise such morally elite generations. The academician defends the genetic screening of embryos for personality flaws by equating it with the genetic screening (pre-implantation genetic diagnosis) of the embryos for certain serious genetic disorders (e.g. Down’s syndrome).

**Flaws in the Theory**

The theory as presented by Savulescu is defective both in its practical application, as well as in its conceptualization. Some of the major flaws in theory are discussed below:

***Genes, the Environment and the Organism***

One of the biggest flaws in this theory is that it is just based upon the assumption that personality has genetic basis only, thereby totally negating the role of environment on the personality. The studies in the field of behavioral genetics involving identical twins (who have almost identical genetic makeup) reveal that although genetics have some influence (statistical association) on the personality but environment plays a leading role in shaping it (3, 4). Even though genetically identical twins share the same genetic makeup but they have two distinct personalities under the control of environment (e.g. how and where a person has been raised).

Let us take the example of Monoamine Oxidase A (MAOA) gene, also known as “warrior gene” due to its possible role in aggression. The MAOA gene encodes for an enzyme that regulates the levels of neurotransmitters in the brain. The level of activity of MAOA enzyme is different in different people and the variant having lesser activity (MAOA-L) is generally considered as associated with the aggression. However, a study conducted in Brown University (USA) suggests a strong correlation exists between the enzyme activity (the gene), aggression and provocation (the environment) (5).

***The Return of Eugenics***

Sir Francis Galton in 1883 put forward the idea of Eugenics, the science that deals with the improvement of inborn qualities of human race (6). The idea had led to misguided attempts by the Americans and the Germans in the early 20th century, in the name of improvement of human race. This has led to compulsory sterilization programs, culling of the disabled and formulation of prohibitive mixed marriage laws, resulting in immense damage to human race. Similarly, when Savulescu talks about “more intelligent and less violent society” he is most probably talking about the revival of the eugenics in the modern era through improvement of inborn qualities of human race, although methods proposed are different (genetic screening and selective abortion) than applied in the history. Savulescu assures that the new eugenics would be different from the early eugenics movement, as he thinks that the objectionable feature in the early movements was its compulsory nature but moral bio-enhancement would be voluntary. However, there was change even in his own position from making it “obligatory” like fluoride in the water to allow parents to “choose” over time. However, previous experiments with eugenics show that they ended up in coercion of individuals and a loss of voluntariness.

***Screening for Personality Traits***

Genetic screening and selective abortion themselves are controversial. The justification for the applicability of genetic screening for personality traits is irrational and faulty. The genetic disorders Savulescu talks about, severely affect the quality of life of a person, whereas no such rational ground exists for moral bio-enhancement. However, one could argue here that moral bio-enhancement could be used to eliminate potential killers/criminals and terrorists. But the problem is once started the technique may not remain limited to the screening of the personality traits only. For instance, pre-implantation genetic diagnosis meant for the screening of genetic disorders in the human embryos has led to sex selection in various parts of the world.

***Moral Status of Human Embryos***

Much controversy exists regarding moral status of human embryos both in the scientific and the religious worlds. Are human embryos are merely clumps of undifferentiated cells or are they potential human beings? Can “undesirable embryos” be just thrown into the garbage? Can they be destroyed in the early stages of development in the name of advancement of science? These are the key questions tagged with any protocol involving destruction of human embryos, for instance as proposed for moral bio-enhancement by Savulescu (2). The underlying controversy is regarding the beginning of life and at what point it actually begins. Whether it begins at the time of conception or later? Substantial difference of opinion exist in theological as well as in scientific circles. According to Islamic jurisprudence life begins at the time of “ensoulment”. However, considerable difference of opinion exist in this regard not only among different schools of thought but also within the same school of thought. Although, majority agrees that ensoulment occurs at 120 days but few believes that it happens at 40 days (7). In contrast, Christianity preaches that life begins at the time of conception therefore, destruction of human embryos equals to murder (8), which is strictly prohibited by the Ten Commandments (9). Therefore, strictly prohibiting the destruction of human embryos as it is the artistic work of God.

Robert George, Professor of Jurisprudence at Princeton University, USA, advocates the “equal moral status” of human embryos therefore, they should not be “harmed or considered to be less than human on the basis of age or size or stage of development or condition of dependency” (10). However, equal moral status view fails to persuade Bass Professor of Government Michael Sandel from Harvard University, USA. He regards human embryos as merely objects available for unrestricted use (10). Irrespective of the point of view presented above by the scholars regarding the moral status of human embryos, it should be kept in mind that this “mass of cells” have the potential to become a fully functional human being. Therefore, they should not be destroyed for the sake of scientific fantasy like genetic moral bio-enhancement.

***Different Perspectives of Morality***

Morality has no global standards and it differs not only among the nations but also from individual to individual, similarly as the individuals differ in their appearances, habits, emotions, thoughts, experiences and interpretation of those experiences etc. For example, in some part of the world it might be considered as extremely immoral to leave parents to old age homes however, it might not be considered as moral elsewhere. Therefore, the question arises here that whose moral standards should be followed.

***Science, Still in its Infancy***

Despite a large number of discoveries in the field of genetics, as far as practical aspects are concerned; genetics is still in its infancy as most of the discoveries are based upon laboratory level work only. Therefore, the implications of such work on human beings is not very clear yet. Hence, our understanding about the genome is very limited at the moment. Moreover, it is not clear at the moment that what would happen by removing certain genes (selective abortions) or by inserting (via injection) certain genes. It is quite possible that the gene thought to be responsible for negative behavior might have some other more important function(s) as well e.g. MAOA have role in the regulation of levels of neurotransmitters in the brain, as well as thought to have role in aggression as well (5). Furthermore, personality traits are thought to be most complex. Despite the role of environment in their expression and modulation, they are multi-allelic and multi-genic as well. Hence, potentially making it impossible to play with these traits on practical grounds.

***Rise of In-egalitarian Society***

In my opinion, genetic bio-enhancement would give rise to social and political inequalities in the society by splitting it into two groups, the outcome of which would be greater violence than ever before. For instance, a morally enhanced more empathetic person could be subjected to greater exploitation by the morally unenhanced person(s). Similarly, a morally more empathetic law enforcement agent, under the influence of his genes, might never be able to perform his duties fully while fighting against vicious criminals. His heightened sense of morality might occlude his rational decision making. According to Morioka, morally sensitive bio-enhanced people would get trapped in such moral dilemmas of right or wrong on the daily basis, exerting unbearable emotional stress on them (11).

***What are the solutions?***

It is strongly emphasized that the improvement of future generations through modification of socio-economic conditions (rather than through genetic moral bio-enhancement) could play a more vital role in shaping human morality. Previous studies on this topic indicate strong correlation between the lower socioeconomic status and the severity of violence (12). Furthermore, economic stability is directly correlated with the decrease in crime in various countries. For instance, a sharp decrease in number of homicides has been observed in Japan during 1955-2000 which represent 45 years of economic prosperity, abundance and peace (11). Additionally, formulation and implementation of stronger laws would further help to subside the crime rate.

**Competing interests**

The author declare that they have no competing interests.

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