Impact of Religion on Opinions on Gene Therapy

A Plea to Pope Francis to Convey To His Followers his Opinions On Genetic Engineering and its Potential Benefit to Mankind

Tag Words: Pope Francis, Playing God, Gene Therapy, Religious Views, Genetic Engineering

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Summary: Much of the scientific community is met with heavy religious opposition and this is due to the deeply instilled teachings of faith and religion. One such field that is currently facing much pressure from the religious community is that of Gene Therapy/Field of Genetic Transgenic. It is with the utmost importance that the community as a whole, both religious and scientific come together to understand the purpose of these studies and scientific advances. Much of education is deeply traced back to religion and its beliefs, through means of educating the public as a whole on this subject it might be enough to pave a path so that this field of science can move forward in a positive direction with acceptance from both parties. To properly implement a plan that is both efficient and informative, the proper steps must be taken to convey a message that which targets both the young and the mature audience through a method that is most accepted in our current society, media.

Video Link:

Tampering with Our Genes - Are We “Playing God”? 
What is the Human Code? The human code is also most notably referred to as the genetic code an intricate series of protein sequences that which code for human life. More notably every human on this planet begins with a single strand of genetic information that codes for specific proteins that regulate certain biological functions and while the beginning stages of human development have been studied heavily so that scientists may further understand the workings of the genetic code. This code is the essence to life itself, by starting a chain reaction of various protein reactions the human organism slowly develops and as a result we witness the creation of the human organism as a being with functions already inscribed in their genetic code, functions ranging from transport proteins in the body carrying various essential proteins to various parts of the body or the intricate reproductive system that helps generate this human code through a system of probability. As a result we may experience certain mutations in this genetic code that have a deleterious effect on the outcome of the development of the organism. For example, a mutation in the sequence that codes for pigment coloring is perhaps mutated and as a result we experience the resulting feature of albinism. As the field of science moves forward so does the technology behind fixing mutations and or errors produced within these intricate biological systems. Gene Therapy a procedure that in essence replaces faulty/damaged genes with healthy genes so that the outcome of the organism may be free from disease/ailment. In current society the field of science is always met with an obstacle far greater than that of molecules or cell interactions, the human faith is an obstacle that has always hindered science from progressing.
forward into regions where advancements would greatly benefit the well being of individuals everywhere. Religion has always been a strong backbone in current society’s perception of science as a whole; the teachings of faith tend to sometimes limit our perception of the greater picture. The world as a whole is predominantly religious in some way shape or form either utilizing faith as a means to a moral guide or to that of worship and practice and due to that we may view the opposition of religious parties as ‘ignorance’. This is simply a result of a lack of proper delivery of information, as a society we have developed such advanced methods of communication and delivering information yet much of society is either misguided and or ill informed but the proper root of this problem lies deep within faith and education. Much of society truly does not understand the benefits of certain Genetic/Scientific research, to educate the public through reliable means that is the best approach; an informed audience is what is needed so that society as a whole can progress forward.

What Is Gene Therapy?

What is Gene Therapy one may ask, it is the application of Genetic Research at the very molecular level that which affects the individual as a whole. Geneticists have found a medical technique that which will revolutionize the field of Medical treatment as a whole, currently in the very late stages of research and development. The fundamental idea of simply excising a defunct gene and replacing it with gene when expressed could inevitably alleviate certain diseases and or ailments. (Culver, 1994). This method of therapy is a tool most reliable for its ability to treat or prevent diseases; examples of medical application are as follows: replace a mutated/defunct gene with a healthy copy of that gene, altering a mutated gene by inactivating it, and possibly insert a completely new gene to help fight the targeted disease/ailment. The research currently conducted by institutions around the world is making great progress, this field of study is risky due to the nature of unknown variables but this the usual norm when something in its beginning steps would typically generate much caution.

Genetic Engineering/Transgenic

Genetic Engineering has a negative connotation attached to it and has carried that connotation over the years, but that was due to society’s misinformation on the topic at hand. Genetic Engineering is not science fiction it is in fact a viable genetic technique used in many labs around the world. Genetic Engineering is the direct manipulation of a gene of interest; a geneticist can target and locate a gene of interest perhaps a gene favorable for insulin production in humans. A geneticist can then take that gene and insert in into an organism that can produce insulin due to the presence of the inserted gene and as a result a transgenic is produced. A transgenic is a term used to define an organism that has had its genetic code modified through genetic engineering. For example insulin, a scientist can take the insulin producing gene and insert that gene into bacteria that now after modification can produce insulin at a rate greater than humans. As a result, we have a method to produce insulin at a great rate and at an efficient rate, so patients in need of insulin can have access to insulin when needed.

Application of Gene Therapy/Genetic Engineering in Humans

Certain diseases such as cystic fibrosis, inherited diseases, a majority of cancer, and diseases that arise from mutant genes, much research has shed light on certain immunodeficiency syndromes
that have had much success with Gene Therapy. (Cavazzana-Calvo et al.,2000)(Cavazzana-Calvo et al.,2001) Much of this research was still in development but some scientists began to delve deeper into the human genome and molecular sciences. In early 90’s a group led by Steven Rosenberg, MD/Ph.D utilized a retroviral vector as a means to transfer a neomycin resistant marker gene into tumor infiltrating lymphocytes (Rosenberg et al.,1990). This can be seen as the beginning steps of Gene Therapy by using retroviral vectors to transfer genes to target locations. As the years continued the final step in the forward propulsion of Gene Therapy was the advancement of recombinant DNA Technology. The field of Gene Therapy was dealt a devastating blow when a clinical trial that was being run at the University of Pennsylvania ended up with a patient dying as a result of his body’s immune reaction to the vector used in that clinical trial. The investigation into the trial found that there were many violations in protocols and as a result was due to various errors made in that trial, this began to draw much skepticism towards the field of Gene Therapy. Shortly after this incident, a research team in Paris was able to cure a pair of children with (SCID-XI Severe Combined Immunodeficiency Disorder)

Religious Views on Gene Therapy/Genetic Engineering/Transgenic
With the ability to genetically modify an embryo prior to birth, scientists can mechanically select for certain favorable traits. This grants parents the ability to select for sex, hair color, eye color, height, skin color, and as well, as insert immunity to certain diseases and ailments. There is much social concern over the production of ‘designer babies’, with a concern over the fact that only the rich can possibly afford these expensive procedures and this could in turn develop an actual physical difference between social classes. Many individuals of various faiths possess a similar opposition to the progression of Gene therapy, religious followers of the Christian faith view the modifying of life is seen as playing god and that it portrays an image that god is flawed. “Christians must resist the tendency to reject technology merely because it is foreign or merely because it is technology”. (Kerby, A 1998) Islamic beliefs share similar interests and concerns as other faiths towards the topic of Gene Therapy/Genetic Engineering “Particularly relevant is the Islamic religious prohibition against ‘changing what allah has created’ “ (Vardit R et al..1998)

Various Popes and Views on Genetic Engineering/Therapy
Over the years various Popes and their views on the topic of Genetic Engineering/Gene Therapy have been voiced. Pope Benedict announced “Within bioethics there are areas where we absolutely must denounce some violations of the fundamental rights of human nature through experiments and genetic manipulation whose outcome is difficult to predict and control”. Pope Benedict was also against Genetic Engineering and the processes behind ‘designer babies’ and made it known that in vitro fertilization and the use of diagnostic tests to perform abortions of babies with predicted ailments/defects are heavily condemned. (CBC Network, 2008) Pope John Paul however, was very accepting of the study of Gene Therapy and Genetic Engineering, stating that the church supports genetic engineering with enthusiasm if it respects the rights and dignity of the human person. "Our era has made great strides in the scientific knowledge of life, fundamental gift of God of which we are administrators. Life must be welcomed, respected and defended from its beginning until its natural death. Together with it, must be protected the family, cradle of every life that is born." (Pope John Paul II, 2003). The current Pope, Pope Francis, has expressed his views on science and its benefits to society. Pope Francis is in position to help alleviate the religious cloud over this topic due to his background as a scientist prior to
joining the church. His views and beliefs could help sway the public opposition to Gene Therapy/Genetic Engineering. Pope Francis is from Argentina and has expressed his joy over Genetically Modified Crops, as it has brought much aid to the farmers struggling and the efficiency of providing food resources to the poor. (John Rigolizzo 2014)

Plea to Pope Francis

In today’s day and age a plan targeting society through a means of media and education would most impact the clarification of religious opinions on the field of Gene Therapy/Genetic Engineering. To address the Pope about the current situation and other religious figures to help sway the major religious groups to better understand the topic at hand. Education is another key part in this situation, much of society has developed a system of education that at times leaves certain things in the dark and as a result develop a sort of fear of the unknown. The unknown is always feared but shining some insight and knowledge can aid in truly understanding the once unknown.

Letter to the Pope:

To: His Holiness, Pope Francis
Apostolic Palace
00120 Vatican City

From: Shayenthan Rajeswaran
Home address

Your Holiness,

I write this letter to ask you to re-convey your opinions on genetic modification and engineering to the people. You have stated that the advantages of GM crops seemed miraculous; giving us a powerful new tool to generate food to feed the world. You have expressed much praise for the use of genetically modified agricultural crops in South America in its benefits for the people. However, much of the society has the strong belief that god’s creation is not to be tampered with and that religious leaders believe this is so. The teachings of the Popes before you as well as other religious leaders perhaps have fostered the idea that we shouldn’t use advancements in science and medicine if we are to alter god’s given genetics. Today, much of society has the wrong impression and whenever the term GMO is spoken about in a public setting, there is outright rejection or usually great concern expressed possibly stemming from these religious teachings. In this current day, the people need to have clarified the blurred teaching behind not tampering with god’s creation and helping man live a good life without starvation and disease.

The field of genetic modification/engineering has great potential for helping people have enough food to eat and live without disease and disability. We live in a society that has the capability to do so much and with that we should do the best that we can to help better the lives of everyone.

This why I write this letter to you, your Holiness, so that you may come forward and help address the confusion amongst our current day society, by properly educating and discussing how genetic modification can help mankind. By alleviating the fear of the unknown, we can help
this field of science move forward so that it can begin to contribute to everyone. We need to become capable of producing food for our ever expanding population. Those that have been given a life of disease or disability could, with advances on genetic engineering, be freed from this burden so that they too can enjoy the life we all enjoy. Your influence can help change the tide on this forbidden (by some) field of science which, in turn, will stimulate advancements in the genetic engineering field that would positively affect the health and well-being of people.

With every good wish to Your Holiness, I am, Sincerely Yours

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New Brunswick, NJ USA

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Letter to the Editor

Dear Editor,

It is with great pleasure that I write this letter to you the Editor, I wish to contribute some scholarly material to your opinion section of the Star Ledger/NJ.com. Through the many years the community as a whole is confused on the great question of Science and Religion and where it stands, as an aspiring Researcher I have compiled a thorough evaluation and prepared a paper that I wish to publish in your opinion section. The growing subject of Genetically Modified Organisms and Gene Therapy is a field that is greatly debated and I have compiled the position of religion and its affect on the progression of this field of research. In publishing this paper in your opinion section I wish to see what discussions it may spark and collectively understand our society’s current point of view on the subject at hand.

Sincerely,
Shayenthan Rajeswaran

Below is an editorial that will be sent after revision to include at the beginning, Pope Francis’s viewpoints on genetic modifications to cure disease.

Shayenthan Rajeswaran

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