

In 'This City of Man', from DNA/SNP, due to Pollution/ Contamination/ Infection/ Mutation, overcoming Global Warming, battling Religious behaviors, Ethical Issues of Genetic Modification and then ending up towards Spiritual Growth

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Research Article

Volume 2 Issue 1

Received Date: June 14, 2018

Published Date: July 17, 2018

DOI: 10.23880/ggtij-16000107

Abstract

The swift advances in decoding the human genome and the tools available to decipher the genetic information will undoubtedly increase our capacity to understand the evolution of the world we are in. Moreover, through this stunning achievement, we are witnessing the wonder of God's most sacred gift, which is life. This paper will explore on why human beings differ from one another. It can be their physical appearance or their susceptibility to disease and response to medications. These differences are referred to as "single nucleotide polymorphisms" or SNP. Today, we have a growing number of people suffering from health issues, this is due to the mutation that arises from pollution, contamination, global warming. This is the price we have to pay for population increase as well as advances in technology. This paper will explore this range of topics. Lastly, this paper will dwell on the issue of genes modification. What are the ethical concerns about genome editing? The debate around genome editing has regained attention following the discovery that CRISPR has the potential to make such editing more accurate and even "easy" in comparison to older technologies. Does Jehovah God allow DNA Damage and Repair? What should we do when we find any difference between the bible and the science?

Keywords: Genes; Science; Pollution; This City of Man; Human Genome; Global Warming; Single Nucleotide Polymorphisms

Introduction

The SNP reveals that there are unique SNP on top of commonly inherited alleles.

a) It is noted that disease-genes (and drug targets) are discovered based on allele elucidation on DNA/RNA array. Generally, among 80% SNP polymorphism, there are merely 50% are in common between Caucasians, and colored people. This fact could only mean all

human primates have no astonishing genetic differentiated characters.

- b) Between-race and even within-race differentiated characters in SNP profiling is usually noticed as well.
- c) For example, a can of Bud Light beer made in the US will easily make this author face rosy red, but perhaps you can deal with a half dozen cans of them quite easily; all depend on genes and SNP.

Helix DNA is the Gene

Gene is the fundamental unit of heredity and the basic component of all biological information. However, the gene is not all genetic information, it only accounts for about 3% of DNA. The other 97% of DNA information is not rubbish at all, all of them is useful. SNPs affect not only genes, but also other biological effects of DNA expression. Hence, in order to fully understand an organism, we must first understand its genes. Dutch biologist Hugo de Vries once said as following, "Just as physics and chemistry go back to not only molecules and also atoms, the biological sciences have to penetrate these units (genes) in order to explain ... the phenomena of this living world [1]. "The narrative of a race to unlock the Holy Grail of biology is a fascinating and an exciting one. It appears to be an impossible task to predict the final outcome of the quest while there are so much left to play for, but undoubtedly, the swift advances in decoding the human genome and the tools available to decipher the genetic information will likely forever alter the practice of medicine. In 1953, Francis Crick and his colleague, James Watson, discovered the double helix structure of DNA. For this breakthrough discovery, Watson, Crick, and their colleague Maurice Wilkins won a Nobel Prize in Physiology, in 1962, it is of paramount importance to remember that this discovery was dependent on many other scientists that came before them. Miescher, Hershey and Chase, Chargaff, Wilkins and Franklin, and others deserve to be acknowledged for the work in helping to unravel the role of DNA in biology. Rosalind Franklin, succeeded in taking an X-ray diffraction pattern from a DNA that allowed researchers, Watson and Crick to work out on the 3D structure of DNA which revealed a clearly recognizable cross or helical shape.

The narrative of DNA often appears to begin in 1944 with Avery, MacLeod, and McCarty revealing that DNA's the hereditary material. But, the DNA story has already begun in 1869, with the young Swiss biochemist, Friedrich Miescher isolated a new compound from the nuclei of some white blood cells and called them "nuclein" (a term now is still preserved in today's name

deoxyribonucleic acid). And In 1950, Erwin Chargaff showed that the proportions of the bases included in the structure of DNA followed a certain law. He stated that in DNA of any given species, the ratio of adenine to thymine's equal, as is the ratio of cytosine to guanine.

The transformation of genetics should be reaches their high peak in 1990. The U.S. Government approved a 15-year, 3 billion dollars plan to launch the Human Genome Project, whose goal was to map and sequence the entire human genome. In 2001, President Bill Clinton unveiled the human genome sequence. He said, "We are here to celebrate the completion of the first survey of the entire human genome. Without a doubt, this is the most important, most wondrous map ever produced by human kind [2]. "This very stunning achievement was brought about by the combined knowledge and perception of biology, chemistry, physics, engineering, mathematics, and computer science; it was as well brought about by the combined effort of the best scientists in the global community. Via this revolution in medical science, we are witnessing the language in which God created life and we are more in amazement of the wonder and complexity of God's most sacred gift. In 2007, the first genome of a single and identifiable individual was published to public,

Craig Venter's Achievement

Craig **Venter** is best known for founding the company Celera and leading the privately funded project to sequence the human genome. He in fact launched the era of genomics by sequencing the first bacterial genome in 1995. Several other advances resulted from the Venter Genome Project [3]. The significant one is that human cells contain two copies of our genome. Twin sets of 23 chromosomes: one from our mother and one from our father. Previous projects only sequenced one set to make matters simpler. As to the price tag of Venter's genome was US\$100 million which was a bargain compared to US\$3 billion Human Genome Project. The price of the next genome sequence was a mere US\$1.5 million. It was that of James Watson, a Nobel Laureate and co-discoverer of the double helix. On the heels of the Human Genome Project, sequencing project that are designed to uncover the associations between genetic signatures and key traits were initiated. The first large-scale collaborative project was the International HapMap Project. It was an organization that aimed to develop a haplo type map (HapMap) of the human genome and to describe the common patterns of human genetic variation. HapMap's used to find genetic variants affecting health, disease, and responses to drugs and environmental factors. The

project focused on special sites in the genome called 'single nucleotide polymorphisms' or SNPs. SNPs (Single Nucleotide Polymorphisms) are common DNA variations where a single base-pair has been mutated or deleted. SNPs are important because they will alter DNA function. Depending on where they are, this can hypothetically cause critical illness by altering an important genetic feature. At the other end of the spectrum, they may have no discernable impact. Genetic epidemiologists use SNPs as genetic markers to track diseases with large studies called Genome Wide Association Studies. It studies the SNPs in tens to hundreds of thousands of people and find associations between specific SNPs and certain disease.

An Overview of SNPs

The announcement of human genome in June of 2000 nicely sent shock waves throughout the scientific circle and the general world population. It proclaimed the completion of a draft of human genome, along with the coming of post-genomic era. In fact, in the post-genomic era, we are focusing on DNA sequences, as these sequences in the human body determine the specific trait of an individual. To fully understand the significance of these sequences in the human body, we must first truly understand the "single nucleotide polymorphisms" (Single Nucleotide Polymorphism, SNP) [4].

All human beings differ from one another, it can be their physical appearance, susceptibility to disease and response to medications. DNA and genes are the blueprint from which we are made. Therefore, differences between people are evident in the sequences of their DNA. Scientists have found that many of these differences are single nucleotide substitution in the DNA sequence. These are referred to as "single nucleotide polymorphisms" or SNP. For example, a SNP may replace the nucleotide cytosine (C) with the nucleotide thymine (T) in a certain stretch of DNA.

What are the so-called single nucleotide polymorphisms? Within the DNA lies the code that makes us human. DNA molecules look the same, yet they have different functions depending on the information they carry. The information in DNA is stored in the form of building blocks known as bases. The human genome is normally composed of about three billion base pairs of nucleotide bases: A, T, G, and C. The information content of DNA derives from the order of the bases. Every three bases specify one amino acid, a building block of protein. Proteins are structures that make each cell and organ distinct. Enzymes, hormones, and neurotransmitters are

proteins. Therefore, what proteins we are made of depends on what DNA we have. Every human being has pretty much the same DNA, but there are subtle differences from one person to the next. There is a single nucleotide polymorphism in about every 500 bp - 1000 bp (bp: base pair), therefore, the chance of the appearance of single nucleotide polymorphisms in the human genome is quite high [5].

Single Nucleotide Polymorphisms or SNPs (pronounced "snips") are variations in a DNA sequence that occur when a single nucleotide in the sequence is different from the norm in at least one percent of the population. When SNPs occur inside a gene, they create different variants, or alleles, of that gene. In fact, polymorphism exists when the commonest identifiable allele has a frequency no greater than 0.99 ($P = 0.99$ or $q = 0.01$). This signifies that, when the Hardy-Weinberg law applies ($p^2 + 2pq + q^2$) and when 1% is taken as the lower limit of frequency for the rarest allele, the distribution of phenotypes would result in 98.01% of homozygous individuals for the commonest allele, 1.98% of heterozygotes, and 0.01% (1 in 10,000 subjects) of homozygotes for the least frequent allele. This is according to the allelic definition of Harris [6]. SNP in this Post-Genomic era really needs our adequate attention for further effort in the research. The methods are as follows:

Methods

The following research methods have been used in this manuscript:

- a) Extensive literature reviews
- b) Observational study, as per the definition of both lay term and academic term in the study of research designs. With the exceptions of studies such as that of Dr. Hammer Dean as well as that of Dr. Patty Tacchino.

The Scientific Approaches to Identify and Characterize SNPs

The **genomic** approach is used by scientists who want to see the big picture. Many institutions participated in several large-scale projects to identify and catalog all of the SNPs in the 3-billion-base pair human genome. Each project involves hundreds of scientists, who compare the genomes of numerous individuals to categorize the differences. These comparisons require countless computer-powered data analysis. As they work, scientists sort and catalog their results in databases that are available to anyone who are interested. The first large-scale project is the International HapMap Project. Its

penalty area is to identify common genetic variations among people. This project represents a collaboration of scientists from public and private organizations in six countries. Data from that project is freely available to researchers worldwide. Researchers can use the data to learn more about the relationship between genetic differences and human diseases. Scientists who are interested in any particular disease or drug response use the functional approaches. The biological processes involved in diseases and drug responses are measured by the activities of many genes. Scientists interested in a particular process will select genes known to be involved in the process and examine them in people who have a response or disease, as well as those who don't. By paralleling people's DNA sequences, scientists can identify SNPs that correspond with a particular function or response.

The Difference between a SNP and a Mutation

The new definition of genetic polymorphism was proposed by Cavalli-Sforza & Bodmer in 1971. It is defined as the occurrence in the same population of two or more alleles at one locus, each with appreciable frequency and widely accepted at arbitrary threshold of 1% [7].

This author's knowledge of the genetic polymorphism was broadly expanded by the book, "The genetics of human populations". It is a very informative and instructive book. The book was last updated in 1999 and therefore does not contain some of the most recent results. It is a "gigantic" book with more than 800 pages and covers many topics. What this author appreciates most is that it contains a section of answered examples. It shows the complexity of the issues in population genetics and how it can be answered with mostly algebra. If one is studying population genetics, this book would be highly recommended [8].

In fact, SNP and mutation are both single-nucleotide differences in a DNA sequence, but SNPs should not be confused with disease-causing mutations. First, to be classified as a SNP, the change must be present in at least one percent of the general population. No known disease-causing mutation is this common. Second, most disease-causing mutations occur within a gene's coding or regulatory regions and affect the function of the protein encoded by the gene. Unlike mutations, SNPs are not necessarily located within genes, and they do not always affect the way a protein functions.

However, SNPs are not homogeneously distributed over the entire human genome, neither over all chromosomes, and neither within a single chromosome. There are about one third as many SNPs within coding regions as non-coding region SNPs. Within a single chromosome, SNPs can be concentrated about a specific region, usually implying a region of medical, or research interest. For instance, the sequence that encodes proteins that present antigens to the immune system in chromosome displays very high nucleotide diversity compared to the other areas of that chromosome [9].

Summary

Today, we live in a world full of health problems and diseases. The truth is that as population increases along with technology, we have a growing number of people suffering from obesity, cardiovascular disease and diabetes among other health issues. With the rapid advance in biotechnology, a variety of life experiences has gradually and has at least partially unraveled the mystery of creatures, but SNP is still the key to unlock such mystery. If this mystery can be totally unlocked, it will bring more understanding in the prevention of disease in human body, the treatment of various diseases, and ultimately the development of a variety of drugs that can extend the life span of human being. The development of biotechnology vastly improves the longevity of human life. The improvements of daily diet and living environment also have significant benefits. We are looking forward to seeing further advancement in the field of biotechnology and also have a high degree of anticipation that the development of a safe and effective cancer drug therapy will not remain elusive in the near future. Biological determinism or genetic determinism is the belief that human behavior is controlled by an individual's genes or some component of their physiology, generally at the expense of the role of the environment, whether in embryonic development or in learning [10]. Is it still around in this 21st century?

Some scientists and social critics have severely criticized much of the work in human behavior genetics. For example, Steven Rose, a professor of Biology and Neurobiology and a frequent critic of human behavior genetic research, wrote a brief critique of "genetic determinism". He claimed that trying to explain social problems like violence, alcoholism, or homelessness by genes is bad science and a bad guide for social policy (1995). Noticeably, social responsibility doesn't lie in our

DNA. Hundreds of other studies have come to the same conclusion, showing a clear genetic influence on intelligence. But that doesn't mean that intelligence is determined by genes alone. However, according to Rose, it is bad science because it tries to reduce complex social problems to things like brain chemistry, shyness in early infancy. It appears to be a bad guide for social policy because it can result in blaming victims for their problems, in diverting scarce resources from effective solutions, and in suggesting genetic engineering solutions for social problems.

In 1980, religious leaders from Protestant, Catholic, and Jewish communities wrote a letter to Jimmy Carter, then president of the United States, to express their concerns about the risks of genetic engineering to humanities. They all assert that human beings are created in the image of GOD, from which they derive power and responsibility over creation. Technology is viewed as part of this power as derived from the sovereign creator and therefore should be harnessed with discretion, to achieve goods for individuals and society.

DNA molecules are Shimmering their Own Images.

Religious behavior is every so often defined as those that involve supernatural beings. There seems to be a parallel between the DNA molecules, the fundamental biological means for the shaping of specialized behavior among the members of the very large populations of biological cells and religious behavior. Some religious rituals such as repeated prayers, baptisms, and masses of Christian churches are usually expected to influence behavior in predictable ways. The religious world is presently dominated by the presence of giant and very long verbal strings. Patterns are not always visible, long-standing attempts to deal with the detection of hidden behavioral patterns contributed much to the biological view of religious behavior based on the concept of repeated patterns. A basic principle in the realm of modern behavioral sciences is that behavior consists of patterns in time. Using the multivariate approach known as T-pattern analysis, recurring orders of behavioral events, usually hard to distinguish, can be divulged and carefully described. T-pattern analysis can be used to the research of the temporal characteristics of behavior in varied species from rodents up to human beings. A t-pattern is generally hierarchical, recursive, and self-similar structures. In some other words, a t-pattern is self-possessed of t-patterns of t-patterns, etc. Secular practices such as lunch, dinner are t-patterns examples while

religious rituals such as baptism, marriage observances are behavioral essentials taking place sequentially and with to some extent more or less flexible and restricted distance between them. The information in DNA is kept in the arrangement of building blocks known as bases. The human genome is generally self-possessed of about three billion base pairs of nucleotide bases: A, T, G, and C. The information content of DNA takes from the order of the bases. Every three bases specify one amino acid, a building block of protein. Proteins may be "building materials" and have special parts for communications (communication modules) and show strong restrictedness with regard to their protein "interlocutors," which result in fairly well defined social links. Thus, there is a high patterned information molecule (DNA) with numerous crucial segments (genes) and plentiful short-lived (RNA) transcripts of these that shape and coordinate the behavioral potentials that is leading to temporal t-patterns in neuronal interactions and ultimately in the behavior and exchanges of humans. In humans, the comparatively short-lived verbal strings such as teaching materials which are taken from segments of comparatively long-staying strings e. g. religious scriptures are duplicated into human brains by specialized individuals, e. g. teachers or preachers. The specialized proteins in the ribosome handles translating comparatively short-lived transcripts of the various segments of its giant DNA string into the respectively corresponding molecular strings, the proteins, whose behavioral potential is decided by their specific molecular sequence [11]. In general, cultural transmission is about transmitting behavior between individuals and their own generations through the so-called non-DNA means such as verbal behaviors. Humans thus started copying "verbal control strings" quite exactly, by vocal means first and then through writing. Yet, the written verbal control strings are becoming highly durable independent objects that can be kept and collected, in that way constituting an endlessly extendable external memory. There are so called giant strings that have developed containing many K segments, each with fairly predictable effects on the behavioral potential of the specially prepared receivers of ever-larger communities. Other than the standardized religious texts which as well comprises the extremely voluminous and complicated legal, scientific, and technological texts that today fill the libraries. Whenever we are watching a military procession with thousands of human Individuals, moving in the same perfect and flawless rhythm, we should be wondering who control this behavior, the brain, or the society.

Does Jehovah God allow DNA Damage and Repair? Yes

The term "Jehovah God" may be not so commonly used in most Judeo-Christian religions. But it is used in the Old Testament [OT]. When Judeo-Christianity talks about the God of OT, they still use "Jehovah God". This is evident in the translation of the four Hebrew alphabets "YHWH" into "Jehovah". In old English bible like the King James, it uses "Jehovah" to translate YHWH. In today's academic writings scholars use "Yahweh" instead of "Jehovah" because they think it is closer to the YHWH. In newer translations, translators follow the Jewish people to just "Lord", to show respect to God. Basically, YHWH is quite a covenant name of God: God has established a covenant with His people Israel and showed "HIMSELF" to be YHWH.

In Judeo-Christianity, since we are now after the NT, we don't usually use "YHWH God", as aforementioned, YHWH is the covenant name of God showing HIS relationship with the Israel people. We use God's fuller revelation of Himself, so we use "God the Father", "God the Son," "God the Holy Spirit". Or just Father, Son, and Holy Spirit. In theology or theological discussion, we still use YHWH when we refer to the God of the OT, who is a covenant God with His people of Israel. But, in the last few years, molecular biologists have been using CRISPR/Cas9 to intervene and preferred method for genome editing because it is fast, cheap, and relatively simple for biologists to use. CRISPR is the abbreviation for regularly interspaced short palindrome repeats. CRISPR/Cas9 has two components. The first is an enzyme Cas9 that functions as a cellular scalpel to cut DNA. The other consists of an RNA guide that leads the scalpel to the precise nucleotides it has been sent to cut. The accuracy of the guide is uncanny; biologists can dispatch a synthetic replacement part to any location in a genome made of billions of nucleotides. When it reaches its destination, the Cas9 enzyme snips out the unwanted DNA sequence. The cell then inserts the chain of nucleotides that has been delivered in the CRISPR package to patch the break. It will be relatively hard to overstate the potential of CRISPR to improve human medicine. This technology has already transformed cancer research by making it easier to engineer tumor cells in the laboratory, then test various drugs to see which can stop them from growing. It also had been used to modify yeasts to make biofuels and to genetically modify crop strains. CRISPR [12] can also be used to change mosquitoes so they cannot transmit diseases such as malaria. The precision and efficiency of CRISPR technology could make genetically modified superhuman

a reality. Nevertheless, many scientists are terrified about the future prospects of gene editing. Eric Lander, director of the Broad Institute of Harvard and MIT and who served as leader of the Human Genome Project, said, "This is a remarkable technology, with many great uses. But if you are going to do anything as fateful as rewriting the germ line, you'd better be able to tell me there is a strong reason to do it, and you'd better be able to say that society made a choice to do this that unless there's broad agreement, it is not going to happen" [13]. Edward Lanphier of Sangamo Biosciences in Richmond, California, argues that "genome editing in human embryos using current technology could have unpredictable effects on future generations. This makes it dangerous and ethically unacceptable." George Q. Daley of Boston's Children Hospital correctly observes that "It raises the most fundamental of issues about how we are going to view our humanity in the future and whether we are going to take the dramatic step of modifying our own germline and in a sense, take control of our own genetic destiny, which raises enormous peril for humanity" [14]. It appears impossible for us to foresee how this technology of gene editing will lead in terms of future developments. But we need to weigh what may be the future issues now before this technological "horse" bolts from the stable and it will be too late to close the door. The application of CRISPR/Cas9 technique involves risks since it may produce off target mutations, which can be damaging. A team of US based researchers from Stanford University, Columbia University and the University of Iowa sequenced the whole genome of mice that had previously undergone CRISPR gene editing. Later, by looking at the full genomes of the mice, they also found that two of the mice treated with CRISPR technology had undergone 1500 unintended single nucleotide mutations, as well as more than 100 large deletions and insertions of genetic material [15]. Until now, all therapeutic interventions in humans using genome editing has been performed in somatic cells, but the experiment of Chinese researchers Junjiu and collaborators has created concern over the possibility of making changes in human germline [16]. This research ignites ethical concern that the therapeutic genetic modifications in the germline may be transmitted to following generations. What are the potential scope and scale of genome editing modifications? If the genome editing could mean eliminating harmful genetic conditions, or enhancing traits deemed advantageous, such as resistance to diseases, if the suffering and death caused by such terrible single-gene disorders as cystic fibrosis and Huntington's disease [17], might be averted, the decision to delay such research should not be made lightly. However, gene editing may also open the door to

eugenics, where those with access to the technology could select for future generations based on traits considered merely desirable: eye, skin or hair color. This'll create ethical, legal, and medical quagmire. Because of the crisis of moral authority in western civilization, there's no absolute ethical framework to help address issues.

Are there any Ethical Issues of Gene Editing? Yes!

The power of this newly discovered technology called CRISPR are forcing scientists to engage in the ethical debate on the issue of genome-editing. People of faith are so much concerned whether genome-editing disregard on the belief that Jehovah God made people in His image and whether by controlling genes, people were still assuming a power that originally and entirely Jehovah God should have. Even among people of faith, such as Martin Luther, opinions were hardly uniform. In 2016, Dr. Francis Collins, the noted director of the US National Institutes of Health said, "I do believe that humans are in a special way individuals and a species with a special relationship to God, and that requires a great deal of humility about whether we are possessed of enough love and intelligence and wisdom to start manipulating our own species" [18]. Importantly, an analysis on the intentionality and philosophical disclosure on ethics and morality must be stressed [19]. There should be a level of mutual trust between the scientific community and the church. People of faith should learn more about genetic editing while the scientific community should engage the people in the pews in the discussion of this touchy issue. As a Christian, there is a desperate need for some guidelines, rooted in Jehovah God's Word. The guiding principles are as follows: [20]

- a) Human beings are created in Jehovah God's image; therefore, humans are always inherently more valuable than all other created things. Hence, technology must always seek to preserve the dignity and value of all human beings, regardless of age or stage of development.
- b) Issues and practices associated with reproductive and genetic technologies fall under the stewardship responsibility of humanity to Jehovah God. Jehovah God has permitted the human race to develop these technologies but we must always remember that we are accountable to Him as to how we use them.
- c) From Jehovah God's perspective, concern for the improvement of the "inner man" is always more important than concern for improvement of the "outer

man". No procedure or practice will prevent the inevitability of death.

John DiCamillo, an ethicist at the National Catholic Bioethics Center, cautioned Catholics not to renounce gene editing completely [21]. He reiterated that the kind of modifications that can treat deadly genetic diseases and treatments can be done in an ethical manner, with full respect to dignity of human persons.

Pollution/Contamination/Infection give Rise to Mutation

Environmental contamination is the introduction into water, air and/or soil of microorganisms, chemicals, toxic substances, wastes or waste water in a concentration that may make the medium (water, air and/or soil) unfit for its any next intended use (consumption, crop production, and/or habitation) [22]. Environmental contamination has always accompanied civilization. It started from prehistoric times but it was comparatively small and it can be handled by nature. The environmental pollution we have today initiated during the Industrial Revolution. The expansion and buildup of factories and consumption of exceedingly huge quantities of coal gave rise to unprecedented air pollution and the large volume of industrial chemical discharges added to the growing load of untreated human wastes. Forms of pollution [23].

Air pollution: The most familiar and obvious form of environmental contamination is the air pollution. It is the release of chemicals and particulates into the atmosphere. Common gaseous pollutants include carbon monoxide, sulfur dioxide, chlorofluorocarbons (CFCs), and nitrogen oxides emitted by industry and motor vehicles.

Light Pollution: Light pollution occurs wherever any light from any cities and or any towns at night that interferes with astronomical observations. It can also interfere with natural environments, including, but not limiting to underwater animals' respective environment.

Littering: Littering is the criminal throwing of inappropriate man-made objects, unremoved, onto public and private properties.

Noise Pollution: Noise pollution encompasses roadway noise, aircraft noise, industrial noise, as well as high-intensity sonar.

Soil contamination: Soil contamination occurs when chemicals are released by spill or underground leakage.

Among the most significant soil contaminants are hydrocarbons, heavy metals, MTBE, herbicides, pesticides and chlorinated hydrocarbons. Patty Tacalino [24] did an extensive research on the effects of methyl tert-butyl ether (MTBE) in human-health. There are differing views amongst scientists on the potential health effects of MTBE as evidenced by the numerous summaries compiled by federal, state, and international agencies. The human-health effects of long-term inhalation or oral exposures to MTBE are unknown, though after the introduction of oxygenated fuels containing MTBE, there were reports of acute human-health effects such as nausea, dizziness, and headaches by people exposed to fuel vapors in air. However, these symptoms have not been clearly linked to MTBE exposure. There are no published findings on the carcinogenicity of MTBE in humans but inhalation exposure to MTBE produced increased incidences of kidney and testicular Tumors in male rats and liver tumors in mice. Oral administration of MTBE produced increased incidences of leukemias and lymphomas (combined) in female rat's and testicular tumors in male rats [25]. There has been considerable scientific discussion regarding the relevance of these animal cancer study results to humans [26,27], and a range of conclusions has been drawn regarding the carcinogenicity of MTBE. The National Toxicology Program does not recommend listing MTBE in its Report on Carcinogens [28]. In contrast, other agencies have not formally classified MTBE as to its carcinogenicity to humans, but they have published reports indicating that MTBE should be regarded as posing a potential carcinogenic risk to humans based on animal cancer data [29].

Thermal pollution: An evaluation of the scientific peer-reviewed research and literature on the human health effects of MTBE, its metabolites, combustion products and substitute compounds. In: Health and environmental assessment of MTBE: report to the Governor and legislature of the state of California as sponsored by SB 521. Volume II: human health effects: Davis, CA, University of California Toxic Substances Research & Teaching Program, November Thermal pollution is a temperature change in natural water bodies caused by human influence, such as use of water as coolant in a power plant.

Visual pollution: Visual pollution refers to the presence of overhead power lines, motorway billboards, and scarred landforms (as from strip mining), open storage of trash, municipal solid waste, or space debris.

Water pollution: Water pollution refers to the discharge of wastewater from commercial and industrial waste (intentionally or through spills) into surface waters; discharges of untreated domestic sewage, and chemical contaminants, such as chlorine, from treated sewage; release of waste and contaminants into surface runoff flowing to surface waters (including urban runoff and agricultural runoff, which may contain chemical fertilizers and pesticides); waste disposal and leaching into groundwater; eutrophication and littering.

Plastic pollution: Plastic pollution occurs when plastic has gathered in an area and has begun to negatively impact the natural environment and create problems for plants, wildlife, and even human population.

Pollutants

Sulfur dioxide a component of smog, is emitted from the combustion of fossil fuels like coal, petroleum and other factory combustibles. It is one the major cause of air pollution. We rely on them to fulfill our daily basic needs of transportation. But, overuse of fossil fuels is killing our environment as dangerous gases are framework for consistent data collection and identification of gaps in knowledge. Kant begins with the simple premise: all human knowledge is based on experience. We gained access to reality through our five senses. This sensory input is then processed through our brains and central nervous systems [30]. This will generate more benefits and assist them in choosing the best environmental policy to address specific need of the body. Some animal populations are susceptible to pollution; they are more susceptible to frequent illness and decreased reproduction rates. Developing fetuses can inherit the harmful effects of environmental pollution as that's when the cells of organs such as the brain and heart are starting to develop.

A study conducted "by this author's Alma Mater". Columbia University and Chongqing Medical University, found that that babies born in the southwestern Tongliang, a Chinese town of 800,000, just before the plant was shut in 2004, had significantly lower levels of a protein crucial to brain development in their cord blood than those conceived later. They also had poorer learning and memory skills when tested at age two [31]. Conversely, in Turkey, the body of a two-headed dolphin was reported in 2017, on the beach. Scientists have not yet found the cause for these odd mutations but we do hope that they do soon. Is this rare mutation the effects of human environmental pollution? [32].

Spiritual Formation

It's possible perhaps even likely that you've never heard the phrase spiritual formation before. It's the kind of terminology that's often sequestered in academic circles. But in recent years, the concepts and practices of spiritual formation have gained popularity in the church and brought related issues to the forefront for many believers. If the emails we receive, to you are any indication of the overall direction of the church, the popularity of spiritual formation has exploded in the last several months. Weekly sometimes daily we hear from men and women wrestling with difficult questions about the disciplines and practices of spiritual formation. They're struggling to reconcile what they're reading and hearing with the Word of Jehovah God. The topic has even come up in some of John MacArthur's [33]. Q&A's, hence, this author know it's on the minds of many believers and raising questions in congregations around the world. Even forming a basic definition of spiritual formation is no simple feat. It's a fluid concept, with a wide range of accepted meanings and applications. Strictly speaking, in a rather broad term, spiritual formation appears to be the process of spiritual shaping and growth [34,35].

If sending your children to a Christian school

For example, if sending your children to a Christian school would descent under the wide sun shade of spiritual formation. Likewise the same could be said of any other education linked to a specific religion Catholic, Jewish, Buddhist, or Muslim schools all contribute to the spiritual formation of their respective students [36,37].

Spiritual Growth in Our Daily Lives

In Christian circles, spiritual formation refers to more than merely the academic instruction. Most often, it's a reference to the dynamic means of sanctification. It often deals with the ongoing work of the Holy Spirit and the various methods involved, one of them such as someone utilizes to bring about spiritual growth in our daily lives. It's at this point things can become somewhat confusing. On one hand, there are the time-tested, practical Christian disciplines we're all familiar with things such as personal and corporate Bible study, worship, prayer, small group meeting, discipleship, and service [38]. On the other hand, many of the leading voices in the spiritual formation movement as well stress the need for more intuitive interrelationship of spirituality. The latter give confidence to all believers in order to incorporate a wide variety of extra biblical spiritual practices, such as contemplative prayer, silence, meditation, creative expression, and yoga. In fact, some of the most popular methods of spiritual

formation have been lifted from Catholicism, new age mysticism, or originated from other religions as well as rebranded with biblical-sounding terminology [39].

But any kind of subjective spirituality that inducements your own focus away from the Lord and His truth can have disastrous results, derailing your spiritual growth and cutting you off from Jehovah God's plan for your sanctification. All true spiritual growth starts with the preeminent role of Jehovah God's word in the lives of His people [40].

It's at this point things can become somewhat confusing. On one hand, there are the time-tested, practical Christian disciplines we're all familiar with things such as personal and corporate Bible study, worship, prayer, small group meeting, discipleship, and service [41]. Nevertheless, two more important questions of this article are as follows:

- 1) Is scripture alone enough for spiritual maturity? No. In the meantime, are you readers hearing about spiritual growth and is the term even on your radar? Is this an entirely new idea to you, or is it something you've heard or read about in the past? Have you sat under teachers or been involved with ministries that encouraged spiritual formation? Maybe you've even tried some of the techniques and methods yourself? NO, this author deems that the scripture alone is definitely insufficient at all.
- 2) Does Jehovah God allow DNA Damage and Repair? Yes. It will be remiss to not mention that there are three essential tasks that we, as God's beloved children should strive to follow:
 - a. Being in a close relation with the Lord (John 15:5) and thus will be able to live an abundant, vibrant and fruitful life (Bible John 10:10; 15:1-8)
 - b. Thirsting for God (Psalm 42:1-2; Ephesians 5:14-16)
 - c. The Bible is "breathed out by God" (2 Tim. 3:16). Its writers "spoke from God as they were carried along by the Holy Spirit" (2 Pet. 1:21). It is different from every other book, because it is inspired by God. Therefore, to understand what is written, we must have our eyes opened by that same Holy Spirit. Many more people today read the Bible assuming it is objective history therefore they read the bible in the "literal" sense. A bad interpretation of Scripture gives rise to cults. Even "mainstream" Christians sometimes have beliefs and practices that owe their existence to a wrong interpretation of Scripture. Therefore, we must come to the Bible, not to have our opinions confirmed, but to hear the speaking voice of God [42].

Conclusion

It is of paramount importance to respectfully remember that we all need to fully understand that the background about St. Augustine's writing which has been titled as 'the City of God'. It was written not long after the disaster struck Rome and with people was complaining about the Christian God that brought those bad fortunes to Rome after the Rome hardly could tell the difference between the City of God and the City of Man. One has to look for the City of God not via the City of Man. Becoming Christians, in fact, do not mean all fortunes, all glories, etc., but it could as well mean disaster, pains with sufferings. This is this author's limited understanding of the City of God. At this juncture, it just reminds this author that St. Augustine writes the City of God about 41-CE to refute the claims by pagans that Christianity was responsible for the turmoil in the once powerful Roman Empire. In his work, the City of God, Augustine has taken the task to defend the glorious city of God against those who prefer their own gods to the Founder of that city. Augustine outlined his own vision of two societies, that of the heavenly "city of God" and that of the earthly "city of Man". The most important characteristic of the "city of God" is that it worships the one true God and it's closely authenticated with the church. The citizens of the heavenly city are better people whoever are united in their love for God. They are rooted in grace and virtue, governed by love of God, and destined for peace, salvation, and eternal life. While the "city of Man" is rooted in vice and sin, governed by selfish love, and destined to conflict, destruction, and eternal death. Augustine elaborated his own theory of justice, which he says issued from the proper and just sharing of those things necessary for life. Justice, according to Augustine, could be found only in a society where God's worshiped. The City of Man and the City of God share some common interests. They both seek peace and stability; they utilize the same resources and social structures, and seek protection by the same law, within society as long as the customs and practices of the society do not damage the harmony of the faithful result or prevent them from fellowship with God and with one another in the city of God. Since the two cities share common interests, Augustine, as well, provides another help that should have roles, as well, to keep the rules of law, in helping stability and in pulling your weight. In light of the difference between two cities as aforementioned, though suffered from pollution, contamination, and infections in the city of Man, it's of paramount importance to remember that we all must respectfully learn the spirit of Christ, each of us

must live a life overflowing with joy. Be respectfully transformed as God's power flows through all our life.

When Science and the Bible differ

As to the city of justice, Dr. Francis Collins says that among this community, comments from the late Henry Morris, a leader of the creationist movement, stand out: "Evolution's lie permeates and dominates modern thought in every field. That being the case, it follows inevitably that evolutionary thought is basically responsible for the lethally ominous political developments, and the chaotic moral and social disintegrations that have been accelerating everywhere. When science and the Bible differ, science has obviously misinterpreted its data" [43, 44].

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The last judgment of God

The wonder of DNA coding points to intelligent design.

The universe also is mathematical in nature. Or mathematics seems to be innate in nature, not just some logical thinking of the mind. This wonderful correspondence between the structure of the universe and the human mind is excellent demonstration of a Creator. But we must recognize too that some remain unconvinced until they see God in the last judgment.

