**EXTINCTION**

**IT IS ALMOST CERTAIN THAT CIVILIZATION WILL COLLAPSE BEFORE 2100 CAUSING THE DEATHS OF BILLIONS AND EVEN POSSIBLY THE EXTINCTION OF THE HUMAN RACE**

**By Jason G. Brent**

**Jbrent6179@aol.com**

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 **Introduction and Background**

**The most important problem humanity faces today and the most important problem that humanity will ever face in the future is the potential collapse of civilization before the year 2100. This paper is not some academic exercise to be read and put aside. You are asked to intelligently attack what I have written. My email address is** **jbrent6179@aol.com****. This paper will not contain chapters as it is being written in a stream of consciousness covering all the topics in no particular order.**

**Humanity has one choice if it desires to survive on this planet for up to and beyond the year 2100. That choice is to immediately impose coercive population control on all of humanity, limiting the production of children to one child per family. While it would be very nice if you agreed with my position, that is not the purpose of this paper. The purpose of this paper is to show that is totally and completely insane to refuse to debate, analyze, discuss, and review all of the problems presently facing humanity. This paper will show that in addition to reviewing all the problems presently faced by humanity, humanity must analyze coercive population control and compare coercive control with voluntary control. Humanity must make a choice between coercive and voluntary control in order for humanity to attempt to take whatever steps are necessary to prevent the collapse of civilization.**

**This paper will make the case in the most direct and forceful manner that the failure to consider coercive control and compare the coercive with voluntary control is an act of mass suicide. The language in this paper will be very direct and at sometimes very insulting. It is my position that no rational person can present any evidence that it is the best interest of humanity not to consider coercive control and not compare coercive with voluntary control. To put it in slightly different words—it is my position that every rational person must agree with me based on what is set forth in this paper and if you disagree with me you cannot be a rational and intelligent person. You have a choice--- not read this paper or if you read this paper either agree with me or disagree with me and attack what I have written.**

**How do you describe a person who takes the position that the earth is flat and that the sun revolves around the earth and will not discuss his position or even consider any evidence to the contrary? To state that such a person is totally and completely wrong, does not truly describe the complete lack of intelligence and rationality of that person. Unfortunately, it is not permitted to use stronger language, even though it may be clear that the person you are describing is totally and completely wrong and cannot possibly defend his position.**

**This paper is a follow up to a book “Humans: An Endangered Species” previously written by the author that sets forth the author’s ideas in greater detail about the entire question of resources, population and the future of humanity. The book can be obtained from Amazon, Barnes & Noble, and most independent book stores at nominal cost.**

**You are urged to go to the last page of this paper for some very important comments relating to the United Nations’ population estimates used in this paper.**

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**Four introductory quotations that summarize the ideas contained in this paper**

**“If we don’t halt population growth, with justice and compassion, it will be done for us by nature, brutally and without pity---and will leave a ravaged world” by Dr. Henry W. Kendall, a Nobel Laureate**

**“The raging monster upon the land is population growth. In its presence, sustainability is but a fragile theoretical construct. To say, as many do, that the difficulties of nations are not due to people, but to poor ideology and land-use management is sophistic”.**

 **By World famous Harvard Scholar/Professor and Biologist E. O. Wilson**

**Five statements made by Garret Hardin, deceased Professor of Biology and Environmental Studies at the University of California for over 30 years. He was the author of 27 books and over 350 peer-reviewed articles**

1. **It is a mistake to think we can control the breeding of mankind in the long run by an appeal to conscience.**
2. **In a competitive world with limited resources, total freedom of individual action is intolerable.**
3. **Having accepted disease control, the people must now accept population control.**
4. **All persuasion takes place through coercion.**
5. **To condemn the coercion of the individual by the group is to reject democracy**

**“Anyone who believes in infinite growth** **of anything physical on a physically finite planet, is either mad or an economist.”**

**By Kenneth E. Boulding, himself an economist.**

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 **The Paper Begins**

**THIS PAPER IS NOT ABOUT HOW MANY ANGELS CAN DANCE ON THE HEAD OF A PIN. THIS PAPER IS ABOUT THE COMING COLLAPSE OF CIVILIZATION, THE ALMOST CERTAIN DEATHS OF BILLIONS, AND EVEN THE POSSIBLE EXTINCTION OF HUMANITY BEFORE THE YEAR 2100. THIS PAPER MUST BE READ WITH THAT STATEMENT IN MIND.**

**The cause of the coming collapse is the relationship between the exploding human population and the resources that the earth can provide to humanity. The earth provides to humanity two types of resources--- theoretically renewable resources and nonrenewable resources. Nonrenewable resources include all minerals and all fossil fuels. Renewable resources include forests that can regrow, fish in the ocean that reproduce, soil in which food can be grown etc.. However, since humanity is using almost all of the theoretically renewable resources faster than nature can replace them, they must be considered nonrenewable in any discussion of the future of humanity.**

**The economy of the planet is nothing more than a massive system that converts the resources the earth provides humanity into waste and garbage. That system and those conversions supply humanity with the things that make human existence and civilization possible. However, since the resources the earth provides to humanity are finite and limited, the conversions cannot continue forever into the future. Nothing humanity can do will prevent the conversion to garbage and waste from continuing until the resources are no longer available to humanity. The above statements are nothing more than a simple restatement of the 2nd law of thermodynamics. That law states that in a closed system entropy must increase. And the earth is a closed system, except for the energy it receives from the sun. No action taken by humanity can prevent the application of the 2nd law of thermodynamics to humanity. One dictionary definition of “entropy” is—“ a process of degeneration marked variously by increasing degrees of uncertainty, disorder, fragmentation chaos, etc.; specifically, such a process is regarded as the inevitable terminal stage in the life of the social system or structure”. In simple terms, due to the 2nd law of thermodynamics and due to the fact that the resources the earth can provide humanity are finite, both population growth and economic growth must cease sometime in the future.**

**No action taken by humanity can prevent the cessation of both population and economic growth. In fact, both of them will reach peaks and subsequently start to decline. Many questions follow -- when will each reach a peak, what will be the level when each peak is reached, how long will each remain at the peak, what will the rate of decline of each be, when will the decline cease, what will be the level when the decline of each ceases, will each of them reach a peak due to uncontrolled violence or due to the planned actions of humanity, etc..**

**There is a direct relationship between population growth and economic growth. If the human population grows the economy of the planet must grow, and a growing economy must lead to the collapse of civilization. Any attempt to maintain a continuing growing human population and/or any attempt to maintain an ever growing planetary economy must lead to the collapse of civilization. Every leader on the face of the earth and almost every economist have never advised humanity of the relationship between compound growth, the fact that resources the earth provides to humanity are finite and the coming collapse of civilization. They also have not advised humanity that both the economy and population grow in a compound/exponential manner, and that compound growth is the most powerful force in the universe. The table below shows the power of compound/exponential growth.**

**Annual percentage Time in years reach a growth factor of**

**Growth rate 2 8 32 1,024 about one million about one billion**

**One percent 70 210 350 700 1,400 2,100**

**Two percent 35 105 175 350 700 1,050**

**Three percent 23.3 70 116.5 233 466 699**

**Four percent 17.5 52.5 87.5 175 350 525**

**When will the economy of the planet be eight times as large as the current economy? The above table shows that if the economy were to grow at an annual rate of 2% it would be eight times as large as the current economy in 105 years; at an annual growth rate of 3% it would be eight times as large in 70 years; and at an annual growth rate of 4%, it would be eight times as large in just 52.5 years. The economy would be 32 times as large as the current economy at one percent in 350 years, at two percent in 175 years, at three percent in 116.5 years, and at four percent in just 87.5 years. If the economy were to grow at four percent per year starting in 2018, it would be 32 times as large as the current economy in the year 2105.5 (2018 plus 87.5 = 2105.5) and anyone who believes that can happen must described as totally and completely wrong.**

**Economic growth requires the usage of one or more physical resources provided by the earth to humanity. The economy of the planet cannot grow without the use of one or more physical resources. While no one, to the best of my knowledge, has written one or more papers showing the relationship between economic growth and the use of physical resources, I believe a 50% relationship would be extremely conservative. The 50% relationship would require the usage of physical resources to be four times as large as the current usage, if the economy of the planet were eight times as large as the current economy. The earth will never be able to provide humanity four times the resources that humanity currently uses. Even if the relationship between resource usage and economic growth was only 25%, the earth, almost certainly, never will be able supply humanity with twice the resources it currently provides humanity.**

**The previous paragraph is misleading. Almost certainly the relationship between the usage of physical resources and economic growth is greater than 100%. The reason for that relationship is very simple. In the past humanity has obtained physical resources in the easiest manner possible-- they have chosen the resources with the highest concentrations of usable material to slag, chosen the resources that were in locations that were easier to get to, chosen locations from which it was easier to obtain the resources, chosen the resources that were easiest to process and many similar items. Therefore, in the future usable resources will be more difficult for humanity to obtain. The best example of this is fossil fuels--- they are now being obtained in the oceans and from under the ocean floors, from fracking, and from tar sands. Most probably, in the future, if the economy were to grow by a factor of four the usage of resources would grow by a factor greater than four, possibly 5, 6, or 7. Assuming that the relationship between usage of physical resources and economic growth is greater than 100%, economic growth becomes much more harmful and dangerous to humanity. In simple terms, economic growth in the future will be more destructive to the planet than economic growth was in the past. In order to survive economic growth must not only cease, but the economies of nations must contract.**

**The failure of the leaders of humanity and the failure of almost every economist on the planet to advise humanity of the above simple facts is totally and completely wrong and cannot be excused. When economic growth ceases, population growth must cease. In effect, when economic growth ceases the economic pie ceases to grow and becomes stable. Therefore, as the population increases each person is entitled to a smaller piece of the pie. And eventually the smaller piece of the pie for each person on the planet, must lead to the collapse of civilization.**

**I do not merely challenge, I defy anyone to prepare an intelligent, factual and logically supported paper, with 90% certainty, that shows that the economy of the planet and/or the economy of the USA, no matter how defined, can grow by a factor of 16 without causing the collapse of civilization; it would take about 70 years at 4% annual growth, about 93.4 years at 3%, and it would take about 140 years at 2% for that growth factor to be reached**

**The Global Footprint Network, an organization that examines the relationship between the resources the planet can provide to humanity and the population, has determined that humanity is currently using the resources of 1.7 planets. That organization has determined that humanity is in “overshoot”. In population dynamics and population ecology, overshoot occurs when a population temporarily exceeds the long-term carrying capacity of its environment. In simple terms, overshoot is similar to withdrawing 3% each year from a bank when the bank only pays interest of one percent per year. There is a 2% deficit and eventually you will run out of money. Any species that remains in overshoot must suffer a dramatic, violent and uncontrolled decline in population. The previous statement has applied to every species that has ever existed on the planet since life started on the planet, and that statement applies to humanity. In simple terms, humanity cannot continue to use the resources of 1.7 planets when we have only one planet to provide those resources. No one knows when that collapse and reduction in population will occur for humanity. However, it will occur in the very near future, if humanity remains in overshoot.**

**To the best of my knowledge, no responsible organization and no responsible individuals have shown that the claim by the Global Footprint Network is wrong and that humanity is not in overshoot. There are two and only two causes of overshoot--- the number of human beings on the planet and the average per capita usage of resources. Number of people times average per capita usage of resources equals total resource usage. Overshoot occurs when the total resources used by a species in its environment exceeds the ability of the environment to provide those resources for an extended period of time.**

**In order for humanity to get out of overshoot either or both of the two causes of overshoot mentioned above must be reduced. Assuming that the average per capita usage of resources remains the same, in order to get out of overshoot simple math shows that the human population would have to be reduced from the current (2018) 7.6 billion to 4.47 billion (7.6 divided by 1.7 = 4.47). If that calculation is correct, not only must the growth of the human population cease, the total number of human beings on the planet has to be substantially reduced. The situation is much more horrible. It is almost certain that the average per capita usage of resources will increase due to the economic growth of the nations of the world, especially the 3rd world nations. Therefore, to get out of overshoot the human population will have to be substantially reduced below the 4.47 billion mentioned above.**

**Since humanity must immediately get out of overshoot, reducing the world-wide average fertility to replacement level will not suffice. In order to get out of overshoot the average world-wide fertility rate must be immediately reduced below replacement level. The current worldwide fertility rate is about 2.5, the replacement fertility rate is about 2.1 and, therefore, to reduce population the fertility rate has to be reduced to below 2.1 Having 2 children will cause humanity to remain in overshoot and remaining in overshoot must result in the collapse of civilization. Unfortunately for humanity, many parents desire at least two children-- one of each sex or the 2nd child to act as a playmate for the 1st child. Many parents believe that a single child will grow up to be a selfish person and by having a 2nd child, they are teaching the 1st child not to be a selfish person.**

**Population equals power. Generally the nation with the largest population is the most powerful. Of course, there are exceptions to that rule. However, let us apply that rule to population growth. Assume Group A believes that it is necessary to control population and limits its reproduction to one child per family. Assume further that Group B continues to have two or more children per family. Based on those two assumptions, the population Group A will decrease while the population of Group B will increase dramatically changing the power relationship between those two groups. Group A will not tolerate that situation, and soon as it realizes the power shift it will begin a breeding war increasing their production of children to at least three to catch up with Group B. This power shift can easily presently be seen in the USA where the white people are becoming a minority in “their own country”. That power shift is causing massive social unrest and is one of the causes of the election of Donald Trump as President of the United States. That power shift has been caused by white people decreasing the production of children and others increasing their production of children. That power shift could cause a civil war in the USA in the very near future,**

**The quickest and only way for that reduction in the fertility rate can be achieved in time to prevent the collapse of civilization is by coercive population control. Every second humanity remains in overshoot is a second closer to the collapse of civilization. The long term survival level of population is determined by the level of resource usage today. The more resources used today, the less resources will be available for use tomorrow. The less resources that are available for use tomorrow, the shorter the long term survival of the human population. The sooner humanity reduces its population, the soon there will be a reduction in the use of all resources. The sooner there is a reduction in the use of all resources, the more of those resources will be available for use in the future by humanity. The more resources are available for humanity in the future, the greater delay in the collapse of civilization. I challenge anyone who was opposed to the consideration of coercive population control to show that voluntary population control will reduce the fertility rate to whatever level is necessary, in time to prevent the collapse of civilization.**

**To be more direct!!! I do not merely challenge, I defy anyone who is prepared to gamble the collapse of civilization on voluntary population control and who refuses to consider coercive population control to prepare an intelligent, logical and factually supported paper that shows, with at least 90% certainty, that voluntary population control will get humanity out of overshoot in time to prevent the collapse of civilization. If he/she cannot, or refuses to, prepare such a paper and submit it to peer review, to admit his/her position is totally and complete wrong and has misled all of humanity. Time is of the essence as very second humanity is getting deeper into overshoot and closer to collapse.**

**Exhibit A (attached 7 pages) are the latest population numbers (medium variant) issued by the UN’s demographers at the time of writing this paper. The period of time covered by Exhibit A is from 2020 to 2100. That exhibit shows that humanity will attempt to reach in excess of 11.2 billion by the year 2100. The best estimate of the human population in 2018, at the time this paper was written, is about 7.6 billion. Therefore, the estimated growth between 2018 and 2100 is over 3.6 billion. However, for the rest of this paper, I will use the period 2020 to 2100 as that is the period covered by Exhibit A. To the best of my knowledge, no reputable demographers dramatically disagree with Exhibit A. As you can see from Exhibit A, the world population is expected to increase by 3.5 billion between 2020 and 2100. During that same period, the population of Egypt is expected to increase by 100 million, Israel by 8 million, Palestine by 10 million, Pakistan by 156 million, India by 271 million, Saudi Arabia by 13 million, Iraq 122 million, the USA by 117 million, Syria by 17 million, Sudan by 87 million, Yemen by 21 million, Uganda by 157 million, and Tajikistan by 10 million.**

**There are four very important items I want to specifically call to your attention---1) Instead of decreasing to get out of overshoot the human population is expected to increase by 3.5 billion; 2) The population of the USA is expected to increase 117 million and that increase is terrifying due to the average per capita usage of resources by each American; 3) The combined increase of Israel and Palestine is expected to be about 18 million; and 4) Combined increase of India and Pakistan is about 427 million.**

**Those that are opposed to even a discussion of coercive population control have correctly stated that a number of nations have reduced their growth rates to zero or negative growth and that in a future a number of additional nations will reduce their growth rates to zero or negative growth. However, the UN’s demographers were aware of and considered those facts when they issued their latest estimates of future population growth. Therefore, those facts are totally irrelevant in determining the necessity of a discussion of coercive population control. No one can dispute the fact that the vast majority of the human population, almost every nation, almost every religious leader, and almost every political leader are presently opposed to coercive population control. However, those facts must not stop the analysis of every problem presently facing the human species that could lead to the collapse of civilization before the year 2100 and must not to stop an analysis of coercive population control. The reason is simple--- an analysis of every problem presently facing humanity and an analysis of coercive population control, almost certainly, will show that humanity has one choice--- coercive population control or the collapse of civilization with the deaths of billions and even the extinction of the human species. To use a conventional phrase-- Knowledge is Power-- and we must have knowledge. The refusal to analyze and study the problems facing humanity and to consider coercive population control shows that those individuals not want “knowledge”. Not wanting knowledge is a crime against humanity and is totally and completely wrong.**

**No one on the face of the earth can show that the analysis and study of the problems facing humanity and of coercive population control will in any way be harmful to humanity. One of those opposed to a discussion of coercive population control has stated that if a discussion of coercive population control were commenced, people would immediately increase the number of children they produced. That comment is so ridiculous that no response is necessary. The idea that a couple in Asia or in sub-Saharan Africa would produce additional children because a study of coercive population control was commenced in London is so ridiculous that response is not needed. The failure to study all the problems presently facing humanity today and the failure to examine every aspect of coercive population control, almost certainly will cause major harm to humanity in the future. Humanity must have knowledge.**

**In considering coercive population control only three responses are possible—1) Starting immediately humanity must undertake an analysis of coercive population control; 2) No matter what occurs in the future it will never be necessary for humanity to consider coercive population control; 3) . While it is not necessary for humanity to consider coercive population control at this point in time, depending upon what occurs in the future it may become necessary to consider coercive population control. In the simplest English language, anyone who takes the position that it will never be necessary or appropriate to consider coercive population control no matter what occurs in the future, is totally and completely wrong. Taking the position that discussion is not required today, but may be required in the future is logical and proper. However, those that take that position must be able to respond to the following question--- what factors in the future will make you change your position regarding coercive population control and why doesn’t all the problems being faced by humanity today require such discussion or analysis to commence today? To the best of my knowledge, almost everyone opposed to the immediate commencement of analysis of coercive population control has taken the position that he/she will never consider coercive population control in any manner. To the best of my knowledge, those that are presently opposed to the study or analysis of coercive population control never have stated that they are prepared to study coercive population control in future and then stated what facts in the future would be necessary for them to change their position.**

**In order to prevent the collapse of civilization, population not only has to be reduced on a worldwide basis, but also must be reduced in those situations when two or more nations or groups live in close proximity to each other and compete for the same resources. Since the nations of India and Pakistan hate each other, since both of them have weapons of mass destruction, and since they are estimated to have a combined increase in population of about 427 million between 2020 and 2100, almost certainly those facts will lead to resource wars with weapons of mass destruction occurring between them. A very strong argument can be made that if such a war were to happen, it would spread over the entire planet. Similarly, a combined increase of about 18 million between Palestine and Israel probably would lead to resource wars with weapons of mass destruction that would spread around the planet. The 18 million increase in population does not consider or take into account the very large increases in the Arab nations that are next to or very close to Israel**

**There are three, and only three, methods by which population growth can be controlled. They are 1) Wars, with or without weapons of mass destruction, starvation, disease, and other horrors; 2) Voluntary population control, also known as Family Planning; and 3) Coercive population control. Since no one desires number 1, that method of population control can be excluded from discussion. A comment about the words “Family Planning”--- those words are the words of a coward who refuses to properly discuss the entire situation--- the proper words are “Birth Control”--- no intellectual has answered the question-- what is the proper response if someone advises you that he and his wife want you help them plan their family of eight children--- is the response to that request, great you are planning your family or you are a fool destroying humanity by having eight children?-- unless the leaders of humanity are prepared to use the proper words “Birth Control” there is zero chance that humanity will survive beyond the year 2100. Anyone referring to the Rhythm Method, the only method approved by the Catholic Church, as Birth Control is totally and completely wrong. It is not Birth Control!!!**

**To the best of my knowledge, not one of those individuals that are prepared to gamble the survival of humanity solely on voluntary population control and who refuse to discuss, debate or analyze coercive population control, have explained how humanity could survive beyond 2100, when it is necessary to reduce the human population to get out of overshoot and population is expected to increase by 3.5 billion by 2100. Not one of those individuals has shown or attempted to show that the numbers issued by the UN are wrong and that population will decrease between now and 2100. Morally and intellectually those that are opposed to a discussion of coercive population control have a duty to show how voluntary population control relates to overshoot and the estimated growth of population between now and 2100. If they fail in that duty, they are totally and completely wrong.**

**I have been concerned about the exploding human population for about sixty years and writing about it for almost twenty years. The ONLY response I have ever received from those that refuse to consider coercive control is that Country A, Country B and/or Country C reduced its fertility rate to replacement or a lower level. Not one of those persons attempted to show how that fact related to the rest of the nations on the planet, what the overall population will be in the year 2100 based on voluntary population control, why the UN’s numbers were incorrect, what the total population of the planet should be in order to prevent the collapse of civilization, when that level would be achieved solely by voluntary control, what is the relationship between the fact that Country A was successful in controlling its population and the fact that the population in Egypt is growing at a rate that cannot be sustained (for example) and many other concepts.**

**Since we are discussing the collapse of civilization, the deaths of billions and even the survival of the human species, humanity must take the most conservative position. Therefore, if a course of action has a 10% chance of failure, it must be very carefully examined and every other course of action must be considered before it is implemented. There are only two methods of stop population growth before civilization collapses, voluntary and coercive population control. It can be stated with almost absolute certainty that voluntary control has greater than a 10% chance of failure. In my opinion the chance of failure is close to 100%. I challenge anyone on the face of the earth to show that the chance of failure of voluntary control is less than 10% or even less than 20%. And by chance of failure, I mean that population growth will continue, (or not be reduced, if that is necessary) until population growth is stopped (or reduced) by wars (with or without weapons of mass destruction) or other horrors. If there is a greater than 10% or 20% chance that some or all of the ideas and concepts contained in this paper are correct, the failure to consider, review, discuss and analyze coercive population control and compare it with voluntary population control is totally and completely wrong.**

**The laws of every state in the USA require one side or the other in a lawsuit to prove certain facts at time of trial. That is called the “burden of proof”. The best example of that requirement is the burden of proof on the prosecutor to prove beyond a reasonable doubt that the defendant in a criminal case is guilty of the crime with which he is charged. The defendant in a criminal case is not required to prove his innocence. Applying the concept of burden of proof to this paper, the question becomes-- who has the burden of proof? Since we are discussing the collapse of civilization with the deaths of billions and even the extinction of the human race before the year 2100, I believe the burden of proof falls upon those who refuse to consider coercive population control and are prepared to gamble the collapse of civilization on voluntary population control. In some situations the law requires one side to make out a “prima facie case” in order for burden of proof to fall on the other side. , For those of you that are not familiar with legal jargon, a dictionary defines “prima facie” as “at first sight; on first view, before further examination”. I am absolutely certain that this document has made out a prima facie case for the position I have taken and that the burden of proof is now on those opposed to any consideration of coercive population control to show that their position is in the best interest of humanity’s future.**

**Let me state the situation slightly differently---since we are discussing the collapse of civilization, since there are only two methods to prevent that collapse, and since the chance of failure of voluntary control is at least 10%, anyone who believes solely in voluntary control and refuses to consider coercive control without determining the chance of failure of voluntary control (as best as that chance of failure can be determined) and refuses to consider every aspect of coercive control and refuses to compare voluntary with coercive control is totally and completely wrong. Anyone who is prepared to gamble the collapse of civilization solely on voluntary population control without determining the chance (as best as that chance can be determined) of failure of that method of population control is totally and completely wrong. I challenge everyone presently refusing to consider coercive population control, to show that position is in the best interest of humanity without 1st determining the chance that voluntary population control will fail. I challenge everyone presently taking the position that voluntary population control is a solution to any of the problems facing humanity, to show the chance of failure for voluntary population control.**

**Those that are gambling the future of humanity on voluntary population control have refused to consider how time will affect the problems presently faced by humanity. The numbers set forth on Exhibit A show that the daily increase in population for the 10 years between 2020 and 2030 will exceed 203,000; the daily increase in population for the entire 80 years will be in excess of 118,000; and even for the last 10 year period from 2090 to 2100 the daily population will exceed 43,000. Every second between now and the year 2100 those population increases will cause every single problem presently faced by humanity to become increasingly difficult, if not impossible, to solve. The previous sentence is probably incorrect. If the population were to continue to increase between now and 2100, every single problem presently faced by humanity will become unsolvable and lead to the destruction of civilization before the year 2100. I challenge everyone gambling the survival of humanity on voluntary population control to analyze each problem presently faced by humanity and show that the previous sentence is incorrect.**

**I challenge everyone gambling the survival of humanity on voluntary population control to prepare an exhibit similar to Exhibit A showing the population of each nation over the 80 years based upon the implementation of voluntary population control to the exclusion of coercive population control. Of course, that exhibit should have attached to it an explanation as to how each number was arrived at. Then, and only then, can an intelligent discussion be had relating to voluntary population control.**

**Unless someone can show that the work of the Global Footprint Network is wrong and humanity is not using the resources of 1.7 planets and unless someone can show that the simple math I did above indicating that the population must be reduced to 4.47 billion or lower to get out of overshoot is wrong, even a second’s delay in imposing coercive population control not only could, but would, lead to the collapse of civilization.**

**To recap some of the above-- since humanity is in overshoot, since humanity must get out of overshoot as quickly as possible, since if humanity remains in overshoot there will be a violent, horrible and substantial decline in population, since to get out of overshoot population must be reduced by 3.13 billion as set forth above (7.6 minus 4.47 =3.13) and since it is almost certain that the human population will substantially increase between now and 2100, humanity must discuss every aspect of all the problems facing humanity and such a discussion would require an analysis of coercive population control and a comparison between coercive and voluntary population control. Since the human population must be reduced to get out of overshoot, reducing the world’s fertility rate to replacement level will not solve the problem. To reduce the human population, the world’s fertility rate must be reduced to below replacement level. Therefore, anyone producing two children is not part of the solution. Until humanity gets out of overshoot, anyone producing two or more children must be considered as committing an act that will lead to the destruction of civilization and forced to stop that act.**

**No one has shown, and no one can show, that a discussion and analysis of coercive population control or a comparison between voluntary and coercive population control will be harmful to humanity. The failure to analyze every problem that humanity face, the failure to discuss every aspect of coercive population control and the refusal to compare every aspect of coercive and voluntary population control almost certainly will harm humanity.**

**Those that refuse to discuss coercive population control and are prepared to gamble the survival of humanity on voluntary population control have failed to consider the positions of the various religions on all aspects of reproduction and population growth. Orthodox Jewish rabbis demand their followers produce very large numbers children, the Catholic Church will never change its position on abortion and birth control, Mormons almost always have four, five or more children, many Protestant pastors have caused their flocks to oppose abortion, religious fanatics now control the U.S. Congress such that the US no longer provides any financial support to any healthcare office that advises people relating to abortion, and more than a few leaders of Islam have openly stated that Islam will conquer Western Civilization by producing more children than does Western Civilization. While we do not know for certain what portion of the members of each religion follow the positions of their religions relating to sex and reproduction, humanity must assume that a sufficient number follow the positions of their religions to cause the human population to grow until civilization collapses. Exhibit C consisting of five pages is a must read**

**There is a very simple reason why almost everyone on the planet is afraid to consider coercive population control. Any discussion or analysis of coercive population control will immediately result in a conflict with religion. Every religion mentioned in the paragraph above will do all in its power to prevent any intelligent analysis all the problems facing humanity, if that analysis includes a discussion of coercive population control. The religions mentioned do not care about the coming collapse of civilization or about the extinction of the human species. All they care about is power. A hypothetical question---what would the reaction of the Pope and the other leaders of Catholic Church be to a finding, based on the best evidence and logic available, that in order to prevent the collapse of civilization it was necessary to reduce the human population to below two billion and the only way to achieve that number in time to prevent the collapse is to limit each couple to one child by coercive control? A similar hypothetical question—what would the reaction of the followers of the Catholic Religion be to the same findings? Another hypothetical question—will Islam give up a basic tenet of its religion—the conquest of all of humanity, even if the conquest is made by producing more children than any other group or nation on the planet?**

**While I do not, and you should not, believe that the use of the most modern means of birth control and abortion is “murder”, I will use that word in this paragraph because the Catholic Church and some other religions consider the use of the most modern means of birth control and abortion to be murder. Humanity will murder billions, and billions and billions of living, breathing human beings or potential human beings and no action taken by humanity will prevent that from happening. Repeat, no action taken by humanity will prevent that from occurring. Those murders will occur before birth by birth control and abortion or after birth by wars over resources when humanity reaches the point that the ever growing population cannot be supported by the resources the earth provides to humanity. And those resources are finite and limited and decreasing every second.**

**According to the Global Footprint Network, humanity has already reached the point of insufficient resources based upon the earth’s inability to replace those resources being used by humanity every second. Social collapse has started, but civilization has not, as yet, collapsed due to the fact humanity is drawing down capital. Since capital draw down cannot and will not continue even for a short period of time, humanity is approaching collapse at an ever increasing speed. To summarize this paragraph, those that are opposed to the most modern means of birth control and/or abortion have chosen to murder living, breathing human beings as opposed to murdering potential human beings before birth. The have also chosen to cause the collapse of civilization---murdering potential human beings before birth will not cause the collapse of civilization. While I have used the words “human beings “ to describe a fetus, a very strong argument can be made that a fetus is not a human being. In fact, according to a medical dictionary a human fertilized egg is not even called a fetus until after the eighth week of its development. Rather the fertilized egg is called an embryo until the ninth week of its development.**

**A human egg feels no pain when it is not fertilized by a human sperm. A very strong argument a fertilized egg feels no pain when it is aborted and a very strong argument can be made that a fetus feels only minimum or no pain when it is aborted. However, a living breathing person will feel a great deal of pain when he is killed or she is raped to death in a war over resources. The position taken by those against birth control and/or abortion is totally and completely wrong and the most harmful and destructive position possible.**

**Please read Exhibit D before proceeding further. That exhibit states some of the many problems humanity faces today that, alone or in combination, could cause the collapse of civilization in the very near future. Those problems will be discussed in detail below. That exhibit also states that if the current population of the planet were to live to enjoy a European standard of living, which is about half consumption of the average American, the Earth could sustainably support only about two billion people.**

**The best of my knowledge, no person who refuses to consider coercive population control has shown that the statement above relating to two billion is incorrect and that the planet can support substantially more than two billion people. More importantly, no one has shown that it would be better for the long-term survival of humanity for population to stabilize at today’s population or higher compared with a population level substantially lower than today’s population. In simple and direct terms, it is in the best interest of humanity to stabilize its population at a figure much lower than today’s population and no one on the face of the earth can dispute that statement. No one on the face of the earth can set forth even a single fact that would be in the best interest of humanity to stabilize population at today’s level or higher compared with a much lower population level. No one who is opposed to a discussion of coercive population has shown, or could ever show in the future, that a population level of two billion can be achieved by voluntary control in time to prevent the collapse of civilization. The human population can be stabilized at only one of three levels--- the current level of population, at a higher level of population, or at a lower level population. I challenge everyone on the face of the earth to show it would be in the best interest of humanity to stabilize the human population at today’s level or higher, as opposed to a lower level. I challenge everyone oppose to a discussion of coercive population control to set forth the population level that would permit humanity to survive for the longest period and show when that level will be reached by the use of voluntary population control. I challenge everyone who was willing to gamble the survival of humanity on voluntary population control to analyze all the problems presently facing humanity and to show that none of those problems will cause the collapse of civilization prior to 2100.**

**Every single human right, except the right to produce an excess number of children, is in some manner controlled by society when the exercise right even harms a single person. You have the right to swing your arm, but you do not have the right to swing it such that smashes into my face. You have the right of free speech, but you do not have the right to yell fire in a crowded theater when fire does not exist. The yelling of fire in a crowded theater, where fire does not exist, may only harm people-- harm is not guaranteed. And yet rules of society prevent you from screaming fire in that situation. Having an excess number of children is guaranteed not only to harm a single person, but most likely to cause the deaths of billions and the exercise of that right is not controlled by society. I challenge anyone on face of the earth to show any human right that is not controlled by society, except the right to have an excess number of children, when the exercise of that right harms or even may harm a single person. In simple terms, society is insane.**

**In order to control population, the most modern means of birth control and abortion must be available to all of humanity at little or no cost. A very strong argument can be made that unless the United State of America provides both moral and financial support relating to the provision of birth control and abortion for all humanity, population will continue to grow until civilization collapses. Merely providing the most modern means of birth control and abortion will not solve the exploding human population problem. Education must be provided and culture must be changed. Those that are opposed to a consideration of coercive population control have not shown, and cannot show now or in the future, that culture will be changed in time to prevent the collapse of civilization. I challenge all those opposed to coercive population control to show culture and religion will be changed in time prevent the collapse of civilization. See Exhibit C.**

**Now is the time to discuss the position of those opposed to coercive population control that educating women, permitting them to control their own bodies, permitting them control their own financial affairs and similar actions will save humanity from destruction, due to overpopulation. There isn’t any doubt that educating women, giving them control over their own bodies and financial affairs and similar actions will help to reduce the number of children they produce. However, those facts were known to and considered by the UN’s demographers when preparing their population numbers, Exhibit A. And yet the UN’s demographers have predicted that population will attempt to reach 11.2 billion in 2100. Those that take the position that educating women will save humanity must show that the UN’s demographers are wrong and they cannot do that. They must also show that the education of women and other actions relating to women will achieve the necessary population level in time to prevent the collapse of civilization and they cannot do that.**

**The Rockefeller commission appointed about 50 years ago by President Nixon found that no nation was able to control its population without abortion being available to the population at little or no cost. While advances have been made in the effectiveness of birth control, a strong argument can also be made that that abortion, at little or no cost, must be available in the future to prevent runaway population growth. Sometimes even the best methods of birth control fail, are not used properly, or not used it all in the heat of passion. Humanity cannot afford to gamble the collapse of civilization by not making abortion available to all humanity at little or no cost. Most of those who are opposed to a discussion of coercive population control are also opposed to abortion and the reason is religion.**

**The determination made by the Global Footprint Network that humanity is using the resources of 1.7 planets was based solely on “renewable resources” and did not in any manner consider the usage of nonrenewable resources by humanity. Our civilization depends on many nonrenewable resources and uses enormous amounts of them every day. More nonrenewable resources used today, the less nonrenewable resources will in be available for use in the future. And the less nonrenewable resources that are available for use by in the future, the sooner civilization as we know it must collapse. Some nonrenewable resources can be replaced by other resources. However, those replacement resources almost certainly will be nonrenewable and not be available for future use. There are two theoretical methods by which humanity can delay the collapse of civilization due to the exhaustion of one or more nonrenewable resources that are essential to our civilization. The first theoretical method is to use those nonrenewable resources more efficiently-- less usage per unit of economic production. However, see below for a discussion of the Jevons Paradox and the Khazzoom-Brookes Postulate as to why efficiency of resource usage will not work.
The second theoretical method is the substitution of a different resource for the exhausted nonrenewable resource. In some cases a substitute cannot be found and in those cases where a substitute is found it is almost always a nonrenewable resource. The substitution of one nonrenewable with another nonrenewable does not solve the problem; it only delays the solution of the problem and usually for a very short period of time.**

**One of the most important nonrenewable resources is fossil fuels--- once they are used they are lost and gone forever. Electricity and hydrogen are not energy. They are only the means to transfer energy from one location to another location. The transfer of energy from one location to another location causes the loss of energy. The transmission of electricity from the power generating station to your home costs energy—you have less energy at your home than was produced at the generating station. You need energy to create electricity and hydrogen. According to the World Economic Forum (Exhibit B) the number of cars on the planet is expected to double to two billion and the number of air travel kilometers is expected to reach 20 trillion by the year 2040. We can debate what proportion of those cars will be powered by fossil fuels and what proportion will be powered by electricity or other energy sources. However, we cannot debate that the energy needed to power those vehicles will substantially increase no matter any design improvements. The level of civilization is determined by the level of energy available. If the level of available energy decreases, the level of civilization must decrease. And when fossil fuels are no longer available to humanity, the total energy available to humanity will decrease. So far, to the best of my knowledge, no one has shown that when fossil fuels are no longer available to humanity the total energy available to humanity will remain the same or increase. Humanity must plan for an economy of the planet based upon a decrease in total energy.**

**Since fossil fuels are finite, it is absolutely certain that at some time in the future fossil fuels will no longer be available for use by humanity. The lack of availability can be defined in economic/social and/or in physical terms. Since fossil fuels are subject to the law of supply and demand, since it is certain that the supply of fossil fuels decrease over time and since it is almost certain that the demand will remain the same or increase over time, it is certain that the price of fossil fuels will increase in the future. One definition of when fossil fuels will no longer be available for use by humanity is when the price increase causes a major social upheaval. For example, if the price of fossil fuels were to increase such that the price of food were to increase causing the death by starvation of one billion people, fossil fuels could be considered no longer available for use by humanity. Another definition of availability could be when no additional oil could be extracted from the earth. Another definition of availability could be when the energy of finding fossil fuels, processing them, delivering them to the place where they are used requires more energy than the fuels would produce at the place of use. In any case, the availability of fossil fuels will not be determined in an instant of time—not in the same manner as turning on or off a light switch. Humanity will see the lack of availability of fossil fuels coming over a period of years. In fact, a very strong argument can be made that the lack of availability is increasing daily and humanity is ignoring it. Oil now comes from below the ocean floor, from fracking and from tar sands and all of these situations indicate that the availability of oil is presently decreasing or will be decreasing in the near future. In fact by one measure, oil production per capita (total oil extracted divided by the population), the production of oil peaked a number of years ago. And with the ever growing population, no matter what action is taken by humanity or what additional finds are made, it is most likely that the per capita production of oil will decline. With the population expected to attempt to increase by 3.5 billion by the year 2100, I challenge those opposed to a discussion of coercion to present a paper that shows, with 90% certainty, that the per capita production of oil will not be substantially below the current level.**

**As the supply of fossil fuels decreases in the future, its usage will be limited to essential services and not be available for nonessential services such as cruises, vacations, visiting family or friends and items of a similar nature. In the future the usage of fossil fuels will be divided into at least four categories-- essential services, nonessential services, uses that can theoretically be replaced by alternative energy sources, and uses that cannot be replaced by alternative energy sources. Of course, these four probably will overlap. At present they cannot be any dispute that alternative energy sources can heat your house in Las Vegas or provide the electricity for your electric car to go from Los Angeles to Las Vegas. However, to the best of my knowledge, no one has shown that alternative energy sources will be able to heat and air condition all the homes on the planet when heating and air-conditioning is needed or to provide all the electricity for two billion cars that are expected to be on the planet in the year 2040, assuming that all those cars are electric. To the best of my knowledge, no one has shown that all of farm equipment on the planet presently powered by fossil fuels can be replaced by farm equipment powered by alternative sources of energy; no one has shown that all trucks and other means of transportation presently powered by fossil fuels and used to move farm produce from the farms to the cities can be replaced by alternative energy sources; and no one has shown that if the Northeast of the United States, from Chicago to Boston, was covered by a 5 inch snowstorm that the cities could survive by alternative sources of energy. I personally cannot envision the subways of New York and Chicago and the snow removal equipment for all the cities between Chicago and Boston being powered by alternative sources of energy. The point I’m trying to make, is that at this time all alternative energy sources are theoretical in the sense no one has shown that they will work for the entire planet and in every situation.**

**For alternative energy sources to really be useful to humanity, they must always be available, be available in sufficient amounts, and at an appropriate economic cost. A hospital cannot treat patients if suddenly there is no electricity and there is no fossil fuel generator available to provide electricity. All forms of mass transportation powered by electricity must be guaranteed that the electricity is always available.**

**All, or almost all, alternative energy sources produce only electricity and none of them produce energy in a form similar to oil. While electricity can be used to produce and compress hydrogen, it is highly unlikely that hydrogen produced in this manner will replace oil. There are many uses of oil that cannot and will not be replaced by fossil fuels. Nothing, including hydrogen, has the weight power ratio that will permit air travel to continue when fossil fuels are no longer available to humanity. Many industries, most importantly, the tourist and travel industry, depend upon air travel for their existences. Without airplanes and without air travel there will be a massive social upheaval. While some ships can be propelled by atomic power, they are, and will remain, a very small portion of the ships. Other alternative sources of energy will not permit international trade to continue—electric, batteries, wind, and any other alternative source of energy will not provide the necessary amount of energy in the necessary form to maintain the current level of international trade. In fact, there will be a substantial decline in the level of international and local trade. With a reduction in the level of trade, the economies of nations must decline. Since economic activity and the level of population are intertwined, when the level of economic activity declines the population must decline.**

**According to FlightAware there were on average for the year 2016, 9,728 planes in the air at any time carry over 1.27 million passengers. It can be stated, with almost absolute certainty, that alternative energy sources will not be able to support that level of aviation resulting, as indicated above, in the collapse of many industries that depend upon air travel.**

**All alternative sources of energy have two major problems--- inconsistency and storage. Wind power and solar power will not work unless the wind is blowing and the sun is shining. It is very difficult and uneconomical to store electric energy. There is nothing now available, and most likely will never be available, to permit a sufficient amount of storage to permit New York City to function, if there a 5 inch snowstorm and no sun for a week or two.**

**To summarize, humanity must plan for the future when fossil fuels are no longer available to humanity, and that planning must include a decline in the human population. Since the average human lifespan is close to 70 years, planning for a decline in population must start today. And those that will not consider coercive population control are refusing to plan for the decline in population that must occur due to the unavailability of fossil fuels.**

**No one can deny that at least 500 million people rely on fish to provide a major portion of their protein needs and no one can deny that the catch of one or more food species of fish has declined due to overfishing. With an exploding population and with a continuing decline in the catch of one or more food species, a crisis faces at least 500 million people around the world. No one can deny that it is almost certain that the decline fish food available for humanity will continue into the future. If humanity is unable to stop the decline in fish food availability, it is certain that starvation on a massive scale will occur in the very near future. The farming of fish has its own problems and is not likely to replace the fish species that have been deleted or will be deleted in the future. It is highly unlikely that farmed fish will prevent the protein shortage referred to above or prevent the hunger the will follow from the fact that many species are no longer available or in the future will no longer be available to humanity in sufficient quantity.**

**Paul Ryan, Speaker of the House of Representatives, stated in December 2017 “this is going to be the new economic challenge for America: Baby boomers are retiring-- I did my part, but we need to have higher birth rates in this country. Baby boomers are retiring and we have fewer people following them in the workforce. We have something like a 90% increase in the retirement population of America, but only a 19% increase in the working population in America. So what we have to do? Be smarter, more efficient, more technology still gonna need more people” Ryan did not state what would happen in the future when the additional young people grew old and need more young people to support them. There cannot be an ever growing number of young people supporting old people, when the ever growing number of young people who will become old and will in the future need additional young people to support them. Anyone who is prepared to gamble the survival of humanity on voluntary population control, after considering what Mr. Ryan said, and when Republicans, in general, believe that Americans need to have more children, is totally and completely wrong.**

**Let us look at the future ability of the earth to provide the food necessary to satisfy the needs of the 11.2 billion people that theoretically will be on the planet the year 2100. The number of undernourished people in the world has been rising since 2014, today reaching an estimated 815 million and several billion others suffer levels of serious micronutrient malnourishment. The world’s future food production faces several potentially serious biophysical restraints. One is the availability of arable land and that situation will only get worse as humanity is expected to add 3.5 billion people by the year 2100. The second major constraint will be declining soil, quantity and quality, including erosion, depletion of many nutrients not contained in fertilizer. The soil and humanity may be unable to provide key nutrients needed by the growing crops. There cannot be any dispute that wild bees and other pollinating species have declined in the past and they almost certainly will continue to decline in the future, resulting in less food available for humanity. There is a great deal of evidence that climate change and with it changes in the weather will reduce future food production. Wheat production decreases 6% for each 1°C increase in temperature. A growing portion of the world’s food production depends upon irrigation and the irrigation water comes from two major sources--- underground aquifers that are not being replenished by rain or other natural means as quickly as water is withdrawn from them and rivers being fed by mountain snowpack and the snowpack appears to having been affected by global warming. Global warming could increase the range of pests (moving them northward as the planet warms) and that could cause a decrease in food production in the northern hemisphere. The Ogallala aquifer under about eight Midwestern states in the United States is having water withdrawn from it faster than it is being replaced by natural means. When, not if, that aquifer goes dry food production will dramatically decrease in those states. The same situation is occurring almost in every case when water is being withdrawn from underground aquifers. The Trump administration is not improving the situation by permitting the Environmental Protection Agency to withdraw many regulations necessary to prevent the destruction of the environment. A very strong argument can be made that the food necessary to support the ever growing human population will not be available resulting in massive starvation before the year 2100.**

**Most, if not all, underground aquifers used for irrigation purposes require substantial amounts of time to recharge, or refill. Therefore, in relation to human lifetimes, they must be considered nonrenewable. Since they are nonrenewable, I defy anyone on the face of the earth to show that in the amount of water obtained by humanity from them will not decline in the future. I defy anyone on the face of the earth to show that there will not be a substantial reduction in the production of food for humanity in the future, due to the decline in irrigation water obtained from underground aquifers. I defy anyone on the face of the earth to show that massive starvation will not occur on a worldwide basis due to the lack of water obtained from underground aquifers.**

**When fossil fuels are no longer available to humanity and the level of international trade decreases due to that fact, United States will be unable to import a large amount of fertilizers that it needs to maintain a large level of food production. Food production will then dramatically decrease in the United States, affecting not only its citizens, but all of humanity.**

**Those that believe efficiency in resource usage will help humanity solve the problems it is presently facing must understand that efficiency is a chimera. In economics, the Jevons paradox (sometimes called the Jevons effect) occurs when technological progress increases the efficiency with which a resource used (reducing the amount necessary for one use), but the total consumption of that resource rises because of increasing demand. The Jevons paradox is perhaps the most widely known paradox in environmental economics. To be fair, there is some debate as to whether there is always net reduction or increase in the resource usage. However, the Jevons paradox cannot be ignored when the claim is that efficiency will save humanity from collapse. See also the Khazzoom-Brookes postulate. More importantly, in almost every case improved efficiency accelerates economic growth and economic growth cannot continue on the finite earth. The only way economic growth can continue on the finite earth is by a reduction in population. In simple terms, economic activity multiplied by population must reach a maximum and if economic activity increases, the population must decrease, and if population does not decrease, death and destruction must follow.**

**Assume for this example that a rich industrialist is going to build a building that requires $100 million in steel. Assume further, that the industrialist is a genius and reduces the amount of steel needed to $40 million. Almost everyone would take the position that since the industrialist is using less steel and saving the environment, he is to be congratulated. However, he now has an extra unexpected $60 million in his pocket. What can he do with that money? He could use the saved $60 million to build another building, but that would increase the total resource usage. He could use the saved $60 million to build a yacht, but that increase total resource usage. He could use the saved $60 million to help a university expand its facilities, but that would increase total resource usage. He could put the saved $60 million in the bank, but the bank will lend that money out to someone else who would use it to build a factory, and that would increase total usage. The money saved by efficiency almost always increases total resource usage and, therefore, will not help humanity solve the problems facing it.**

**The best of my knowledge, not one person who is prepared to gamble the survival of humanity on voluntary population control and who refuses to discuss coercive population has shown that UN’s predicted population for the year 2100 of 11.2 billion incorrect. To the best of my knowledge, no reputable demographers substantially disagree with that prediction. Those that are prepared to gamble the survival on voluntary population control, have the intellectual and moral duty to show that such a potential population increase will not have catastrophic effects on all of humanity due to worldwide global warming.**

**A simple example with simple math will show that it is almost certain that global warming will continue at least until the year 2100. Assume that presently each human being on average produces one unit of greenhouse gases. Since there are about 7.6 billion people on the planet, the total production of greenhouse gases would equal 7.6 billion units. Just to maintain the current level in 2100 each individual would be required to reduce his production of greenhouse gases to 0.679 units (0.679 x 11.2 billion people = 7.6 billion units of greenhouse gases). Just to stay even each person would have to reduce his/her production of greenhouse gases by about 32%. I challenge every single person who is prepared to gamble the survival of humanity to show each human being, on average, will reduce his greenhouse gas production by 32% by the year 2100. This reduction does not take into account the increasing economic activity of the nations of the world, and in particular the nations of the Third World, that will, almost certainly, increase the world wide per capita production of greenhouse gases. I challenge every such person to show that the per capita worldwide greenhouse gases will not increase from one unit to a number greater than one unit. For example, if the per capita worldwide production of greenhouse gases were to increase from 1 unit to 1.33 units, the total production in 2100 would equal 14.9 (11.2 x 1.33 =14.9) billion units, or almost twice the current production. I challenge every such person to show that if production remains the same at 1 unit per person (total units in 2100 of 11.2 billion units), that humanity will not suffer a major catastrophe prior to the year 2100 due to global warming. And, yes I am aware of all the efforts being made today to reduce the output of greenhouse gases. However, I am also aware of the position of President Trump and the Republican legislators that a greenhouse gas problem does not exist for the USA and the entire planet; that the greenhouse gas problem was created by President Obama and the Democrats as a means to destroy the economy of the USA and make the USA subordinate to China. Trump and the Republicans are pushing the increased production and usage of coal that will increase the amount of greenhouse gases in the atmosphere leading to the deaths of billions. While I cannot prove, I will guess that the majority of those opposed to a discussion of coercive population control also believe that the greenhouse gas problem does not exist, or if it exists it will not dramatically affect the planet and the USA for many years into the future.**

**A very strong argument can be made that present and foreseeable future technologies available to humanity will not sequester and/or not reduce the amount of greenhouse gases released into the atmosphere in time to prevent one or more major catastrophes caused by global warming. Humanity should not, cannot and must not gamble on technology to save it from the coming disasters caused by global warming. And without a reduction in the amount of greenhouse gases in the atmosphere, is almost certain that one or more major catastrophes will occur before the year 2100. Therefore, humanity has two choices-- reduce the per capita release of greenhouse gases into the atmosphere, or reduce the human population. In 2011 it was estimated that fossil fuels supplied about 82% of the world primary energy. It was also estimated that this percentage was expected to fall to 78% by the year 2040. (See Exhibit J) For the foreseeable future it is absolutely certain that fossil fuels will supply a major proportion of the energy used by the entire planet. Fossil fuels are the major cause of the planet’s global warming. A very strong argument can be made that the per capita usage of fossil fuels will increase between now and 2100 due to the growing economies of the nations of the world, and in particular to the economies of Third World nations. Therefore, humanity has only one choice, if it desires to prevent becoming major catastrophes due to global warming, and that choice is population reduction.**

**Now let us turn to the forests of the planet. According to National Geographic, quoting World Watch magazine, “worldwide, the equivalent of almost 270,000 trees is either flushed or dumped into landfills every day and roughly 10% of that total is attributable to toilet paper”. That number is based upon the current population of 7.6 billion and results in the destruction of 98.6 million (270,000 times 365 days equals 98.6 million) trees per year. Since the population is expected to grow to 11.2 billion in the year 2100, that would mean in the year 2100 humanity will flush or dump into landfills 144.9 million trees (11.2÷7.6 equals 1.47 and 1.47×98.6 equals 144.9). On a daily basis in the year 2100 humanity will be destroying about 397,000 trees every single day (144.9 million ÷ 365 equals about 397,000). In order to maintain the current forest level in the year 2100, and every year thereafter, humanity would have to plant about 397,000 new trees each and every day, including weekends and holidays. I cannot envision humanity planting about 397,000 new trees each and every day in the year 2100 and every day thereafter. If that is not done, the forests of the world will eventually decrease to zero. It must be noted that the above calculations in this paragraph were based only on the increasing population between now and the year 2100. Almost certainly , there will be increased per capita usage of the products obtained from trees due to the increasing standard of living of nations of the world, and in particular due to the increasing standard of living of Third World nations. If those increases were included in the calculations above, humanity would be destroying substantially more than the 144.9 million trees set forth above.**

**The above paragraph is not the whole story. In nature, when a tree died it ultimately collapsed onto the earth resulting in the return of the nutrients to the soil to ensure development of new trees. The dumping of trees into landfills by humanity is not returning those nutrients in the soil to aid in a growth of new trees. If that dumping continues, eventually the soils of the forests will be unable support the growth of any new trees and this will be devastating to humanity.**

**Let us look at the forests in another manner. Deforestation is the primary destruction of forests in order to make the land available for other uses. An estimated 18 million acres (see below for a different estimate of 18.7 million—however, in my calculation, I will use the lower number of 18 million) of forest, which is roughly the size of Panama, is lost each year, according to the United Nations Food and Agricultural Organization (FAO). Some additional information-- about half of the world’s tropical forests have been cleared according to the FAO; forests currently cover about 30% of the world’s land mass, according to the National Geographic; and the Earth loses about 18.7 million acres of forests each year, which is equal to about 27 soccer fields every minute. Assuming that the loss of forests continues at the same ratio to population, the loss in the year 2100 would be about 26.5 million acres the year (11.2 divided by 7.6 = 1.47 and 1.47 times 18 =about 26.5). The average for the 80 years between 2020, and 2100 is 22.25 million acres (26.5 plus 18=44.5 and 44.5 divide by 2 =22.25). The total loss of forests for the 80 years between 2020 and 2100 would be 1.78 billion acres (22.25 million times 80 equals 1.78 billion). The earth cannot and will not lose 1.78 billion acres of forests. That number does not include the possibility that the per capita usage of trees will increase due to the ever increasing standard of living of the nations of the world, and in particular the 3rd world nations. The loss of trees and forests must cease prior to 2100. The loss of trees plays an important role in global warming. Trees absorb carbon dioxide and if the amount of trees is reduced, the amount of carbon dioxide in the atmosphere increases resulting in further global warming.**

**A few more numbers will show why humanity must immediately impose coercive population control on all of humanity. According to Exhibit A, the UN’s numbers, the world population will be 7.734 billion in 2020 and 11.200 billion in 2100. A very quick average for the 80 years is 9.467 billion (11.200 plus 7.734 = 18.934 and 18.934 divided by 2 = 9.467) . A very quick conservative assumption—assume that each person uses just one shirt or blouse per year. Based on the UN’s numbers and based on the conservative assumption of one shirt or blouse per year the total number of shirts and blouses during the 80 year period would be over 757 (80 times 9.467 billion =757.36) billion. I question the ability of the earth to provide the resources for that number to be produced. We can have some more fun with the numbers—will the earth be able to provide the resources for shoes, pants, undershirts, underpants and similar items used by humanity during the same 80 year period? How dependent on fossil fuels and other nonrenewable resources are the items mentioned? Can the earth’s waste systems absorb 9.467 billion shirts and blouses per year? In the year 2100 and every year thereafter, assuming the human population stabilizes at a population of 11.2 billion, humanity would have to produce about 30.7 (11.2 billion divided by 365 days = 30.7 million) million shirts and blouses every day, 365 days per year. My assumption of one item a year could be low, correct or high. If the correct number is 1.5, then everything above would have to be increased by 50%.**

**You may want to have some fun with numbers yourself. Estimate how many dwelling units will have to be constructed between now, 2018, and 2100 caused by the increase in population plus how many dwelling units will have to be built during the same period due to the necessary replacement of current units and units constructed in the future. Then determine how many dwelling units would have to be constructed daily based on working 365 days per year between today and 2100. Lastly ask yourself will the earth be able to provide the resources necessary to build those dwelling units. Include in your calculations thing as bath tubs, kitchen appliances, facilities to provide water, sanitation, roads, electric, heat and all the other items those units will need. Then you must consider that according to the UN, population growth will continue after 2100 and most importantly that everything in use or existence in 2100 will have to be periodically replaced as nothing lasts forever. And the earth will have to provide the resources for those replacements.**

**Now to discuss a common canard!!!! A number of people claim that most, if not all, of the problems faced by humanity are caused by the excessive per capita usage of resources by the industrialized nations of the planet, and in particular the excessive usage by Americans. There cannot be any doubt that the industrialized nations, and in particular the Americans, use, on a per capita basis, substantially more than the average usage and the Americans use substantially more than any other group or nation. That is not the complete story. Do those who point these facts out want the Americans to reduce their resource usage and use the savings to increase the present standard of living of the rest of humanity, or do they want the savings not to be used at all and to remain in the earth for an extended period of time so that it can be used substantially in the future? A nasty question about human nature---if enough money and assets were provided to some of the people in Country X to live at an American upper middle standard living, what percent would use that money for themselves and what percent would share that windfall with the rest of the citizens of Country X? Human nature being what it is, I would assume the vast majority would keep the assets for themselves and not share it. If that position is correct, how can the people in the third world point their fingers at the Americans? Just asking!!!**

**The people pointing their fingers at the Americans never state how much reduction in the standard of living they desire. Assume by some miracle, for discussion purposes, all Americans reduced their per capita usage of resources by 25% and those resources were provided, at no cost, to the bottom 6 billion people living on the planet. First, that would not help solve one problem presently facing humanity, as the resources would still be used and still causing the harm of excess resource usage. The environment does not care about who used the resources; the environment only cares about the fact that the resources are being used.**

**Some people take the position that increasing the standard of living of a group reduces the fertility rate of that group. I would doubt, though I cannot prove, that the increase in the standard of living due to the shifting of the 25% given up by the Americans to the lowest six billion would have an appreciable effect on the fertility rate of that group. The transfer of resources of any amount from the Americans to the rest of humanity would be the moral thing to do only if those resources were not used for the reasons set forth above.**

**Not one person, to the best of my knowledge, who advocates the reduction of resource usage by the USA has described in detail how that would be achieved. Americans, those that live in the other industrialized and even the wealthy in Third World have vast differences in their earnings and assets and that must be taken into account in any attempt to reduce their resource usage. Bill Gates has a four engine private jet for his personal usage. To reduce resource usage should he be forced to get rid of that jet and use a two engine jet, or should he be forced to use a twin engine prop plane that seats six, or should he be forced to give up private aviation and travel with the peasants. Should all first class seats be removed in airplanes, because that is a useless use of resources? Perhaps all aviation for personal use such as visiting relatives and for vacations should be eliminated as unnecessary resource usage. Should all cruise ships be eliminated as wasted resource usage? If not eliminated, should everyone be limited to just one week per year, ditch digger Sam treated equally with Bill Gates? Should Las Vegas be completely shut down as wasted resource usage or should people living more than 1,000 miles from Las Vegas be limited to one visit per year, while people living 100 miles away can visit twice a year? Let us compare Mr. and Mrs. Jones who have 9 children and build a 10 bedroom house, one for each of their nine children and one for themselves with Mr. and Mrs. Smith who only have on child, but want to build a three bedroom house, one for the child, one for themselves and one useless bedroom for guests who may visit---who is wasting more resources? Now let us go back to Mr. and Mrs. Jones and their 9 children. Assume all nine children have married and have moved away causing 9 bedrooms to be empty. Are Mr. and Mrs. Jones to be forced out of their house because they are wasting resources—nine empty bedrooms? What size house would each of the following persons be allowed to build so that he does not waste resources—Bill Gates, Warren Buffet, Donald Trump, David Copperfield, Bernie Sanders and Charlie Brown? How many cars could each person have? How much meat could each person eat? How many vacations could each person take and for how long? How many toilets could each person have in his house? Would each person have to report every new fact in his life to some bureaucracy so that his situation could be reevaluated in relation to his resource usage? Could someone who built a house in the suburbs be told he would use too much gas and that he had a choice—move closer to his work or walk to work? Of would some bureaucracy create a standard that every person would have to follow without deviation based on what the bureaucrats believed appropriate?**

**The point is very simple—any attempt to reduce resource usage by Americans and people in the other industrialized nations would raise a billion questions that would require a bureaucracy of 100 million to answer those billion questions. Morality must be subordinated to practicality.**

**While I am in favor of morality in regard to resource usage and the future of humanity, the practical definition of morality in this situation is very difficult. Assume that two nations, Nation X and Nation A, were created about 150 years ago. Assume further that today the population in Nation A has one unit, per capita, of resources available to it and Nation X has 1,000 units, per capita, of resources available to it. The population of Nation A cries out in pain that the situation is unfair and that the population of Nation X should share the wealth with them. At first impression the normal morality would require that sharing, but first impressions are many times very wrong. A further assumption-- at the time both nations were created the population of each was just a newly married couple and that the couple in Nation X limited their reproduction to two children per generation resulting in just 32 (2, 4, 8, 16, 32) inhabitants today five generation latter, while the couple in Nation A had 10 children per generation resulting in 100,000 inhabitants today (10, 100, 1000, 10,000, 100,000). Based on those assumptions, there are changes in the morality of the entire situation and how you would respond to the claim that Nation X should share their resources with Nation A. Since children cost money to raise and use resources, those that produce large numbers of children cannot and should not complain about poverty: they have caused their own poverty.**

**I previously referred the reader to Exhibit D which stated that the earth could sustainably support only 2 billion people at the European standard of living, which is about one-half that of the American standard of living. Other experts (whatever the word “expert means) have put the number between one billion and one and one-half billion. However, I have never seen, or read about, any paper issued by anyone putting the survival number at greater than two billion. Earlier in this paper, I showed that Orthodox Judaism, the Catholic Church, the Mormon Church, many Protestant pastors, and Islam were essentially in favor of continuing the exploding growth of humanity. Not one of those religions, and not one of the leaders of those religions, has ever considered their positions in relation to the survival of the human species. They may believe that God will provide the resources necessary for an ever growing population without limits. If that is their belief, the facts do not support that belief. More importantly, that belief will must result in the deaths of billions. All of those leaders have a moral obligation to all of humanity to attempt to determine how many people the earth can support for a certain time period and for a certain standard of living. And by certain standard of living, I mean for a certain per capita level of resources usage. And to repeat what I wrote previously, any Catholic leader that in any way suggests that the Rhythm Method has validity as a method to control the number of children a couple produces is totally and completely wrong.**

**Not only have religious leaders failed humanity, all leaders of humanity have failed and are continuing to fail humanity by not attempting to determine the level of the human population that is in the best long term interest of humanity and failing to determine the chance that voluntary population control will fail. Such determinations are extremely difficult to make for many reasons; including the assumptions necessary to make these determinations would be very difficult to agree upon. Nevertheless, these determinations must be made as quickly as possible and then periodically updated as circumstances change. Letting the population and the economy grow without making these determinations is totally and completely wrong. Implied in the position of those that are prepared to gamble the survival of humanity on voluntary population control and refuse to consider coercive control is that these determinations are not necessary. A special condemnation is reserved for almost every economist, as it is their business to know that economic growth cannot and will not continue on the finite planet no matter what action is taken by humanity and no matter what new technology is developed. Their failure to advise the leaders of humanity of that fact cannot and must not be excused.**

**You are urged to read Exhibit E a document issued by over 15,000 of the world’s best scientists, including many Nobel Prize winners, about the future of humanity. Not one of the problems set forth in that document can or will be solved or even ameliorated unless population growth is reduced to zero or more likely until the human population is substantially reduced. Those that refuse to even discuss or consider coercive population control have the obligation to prove, with at least 90% certainty, that voluntary population control will prevent any of those problems from causing the collapse of civilization in the near future**

**You are urged to pay particular attention to two pages in Exhibit C—one page about President Erdogan of Turkey and one page about President Ahmadinejad of Iran and relate those two pages to Exhibit G about the future growth of the global Muslim population. According to page two of Exhibit G, the Muslim population is expected to increase from 1.62 billion in 2010 to 2.19 billion in 2030, a gain of approximately of 570 million in just 20 years. Anyone who is prepared to gamble the survival of humanity on voluntary population control and who refuses to even discuss coercive population control must explain how an addition of 570 million people in just 20 years by one religion will not lead to the collapse of civilization before the year 2100. And there is every indication that the growth of the world wide Muslim population will continue after 2030.**

**Since I have used Exhibit A, the UN’s latest numbers, as a guide to future population growth and since no future estimates can be guaranteed to be 100% accurate, I would like examine those numbers in some detail. World population estimated for the year 2030 is 8.447 billion and for 2020 is 7,735 billion. 2030 represents a gain of 9.20% over 2020 (8.477 divided by 7.735 = 109.20). In 2100 the population is estimated to be 11.201 billion and in 2090 it is estimated to be 11.041 billion. The year 2100 represents a gain of 1.45% over 2090 (11.201 divided by 11.041= 101.45). In simple terms, the UN’s demographers are predicting a very substantial decrease in the population growth rate between 2020 and 2090—9.20 compared with 1.45 is a decline of 85%. The UN is predicting a decline of 85% in the world-wide growth rate in just 70 years. Hopefully they are correct. However, since we are considering the possible collapse of civilization, we must examine what the population would be in 2100 if the UN was not correct in its prediction in the declining growth rate. I want to make it very clear that I am not taking the position that the UN is not correct. I am just doing an intellectual exercise to see what could happen if the UN was wrong. Assume, for example, that starting in 2050 the growth rate dropped to 5% and remained at that level until 2100. 5% is still a very substantial decrease from the 9.20% growth rate for the period 2020-2030. Population in 2050 is estimated to be 9.704. If the population were to grow by 5%, the new estimate for 2060 would be 10.18 (9.704 times 1.05 = 10.18) That number (10.18) times 1.05 = 10.68 the new estimate for 2070. 10.68 times 1.05= 11.21, the new estimate for 2080. That number 11.21 times 1.05 =11.77, the new number for 2090. And lastly, 11.77 times 1.05 = 12.35, the new number for 2100. This assumption shows that if the growth rate stabilized at 5% starting in 2050 the population in 2100 would be over one billion greater than the UN’s prediction of 11.2 billion. This paragraph shows that humanity must examine the actual growth rate very often and compare it to the UN’s predicted growth rate and if the actual growth rate is higher than the UN’s predictions all necessary steps must be immediately taken to reduce the actual growth rate. Since it is highly likely that any attempt by humanity to reach 11.2 billion, the UN’s prediction, in 2100 will lead to the collapse of civilization, any growth rate higher than the UN’s prediction is insane and must be immediately stopped.**

**There are billions and billions and billions of tons of methane under the oceans and if global warming continues some of it probably will be released into the atmosphere. Methane is a gas that can cause the temperature of the earth to substantially increase, when it gets into the atmosphere. It is far more effective than carbon dioxide or other greenhouse gases in increasing the temperature of the atmosphere. No one knows when or at what level of the earth’s increasing temperature will cause a dramatic increase in the amount of methane released into the atmosphere. However, there is some evidence that the release already has started above the normal level. If I am correct, coercive population control must be started today, and not tomorrow. Humanity cannot gamble on the release of methane. As set forth above, the burden of proof is on those that refuse that refuse to consider or discuss coercive population control to show with greater than 90% certainty that the methane gas release problem will not cause a major catastrophe for humanity that would lead to the collapse of civilization in the very near future.**

**You are urged to carefully examine Exhibit H, a death notice that appeared in the Las Vegas Review Journal on July 19, 2018 relating to the death of Harold Miller, M.D. at the age of 93. That notice indicated that he and his wife produced six children and that those children produced 33 grandchildren and the 33 grandchildren produced 79 great-grandchildren. Since some his grandchildren are still producing great-grandchildren, I can state with absolute certainty that the number of great-grandchildren will substantially increase in the future. If he, his wife, his children and grandchildren were rational, intelligent and caring human beings, they would have produced 2 children, 4 grandchildren and 8 great-grandchildren. Instead of being rational, intelligent and caring human beings they and their progeny produced 79 great-grandchildren. Admittedly, this is one instance of the excess production of children. However, what makes this death notice very interesting is that Harold Miller was a medical doctor and should have known better. Instead, he and his wife were religious fanatics who did not care if they caused the collapse of civilization and the deaths of billions. Those that refuse to consider even a discussion of coercive population control should explain how Dr. Miller and its progeny fit into their position.**

**According to the Guttmacher Institute there were approximately 213 million pregnancies worldwide during the year 2012. Of these, 85 million, or about 40%, (.40 times 213 million = about 85 million) were unintended. Of the unintended pregnancies 50% ended (or about 42.5 million) in abortion. If the religious fanatics who are opposed to abortions were successful in eliminating abortions on the entire planet, the annual population increase would grow by about an additional 42.5 million per year. I am not claiming that the population growth would increase by 42.5 million each year between now and 2100. However, just to give you a feel-- if the population were to continue to increase each year by 42.5 million between now (2018) and 2100, that would increase the human population by an additional 3.5 billion ( 82 years times 42.5 million = about 3.5 billion). Instead of attempting to reach 11.2 billion in 2100 (the UN’s estimate) humanity would attempt to reach 14.7 billion (11.2 + 3.5 = 14.7). In plain and simple terms, the elimination of abortions worldwide would definitely lead to the collapse of civilization before the year 2100. Humanity must fight the religious fanatics and do all in its power to provide safe and no cost or low-cost abortion to every woman on the planet. The increase of 3.5 billion set forth above in this paragraph does not include children and grandchildren that would have been born to those aborted.**

**According to Dr.Brian Clowes (see Exhibit I), director of education and research at Human Life International, (a religious organization that is violently and fanatically opposed to abortion under any circumstances) during the 40 year period between 1973 and 2013, 1.72 billion abortions occurred worldwide. That works out to about 43 million per year and that number coincidentally is in almost total agreement with the 42.5 million set forth in the paragraph above. If abortion were outlawed in 1973, the population in 2100 would be increased by about 5.46 billion (127 years times 43 million per year = 5.46 billion). And that increase does not include the children, grandchildren, great-grandchildren, and even great-great-grandchildren that would have been born to those who were aborted. A very conservative estimate, in my view, is that the additional 5.46 billion would have produced an additional 5.46 billion children, grandchildren, great-grandchildren, and even great-great-grandchildren by the year 2100. You, the reader, may agree or disagree with my detailed calculations set forth in this paragraph and the previous paragraph. However, it is absolutely certain that if abortion were outlawed on a worldwide basis in the year 1973, there would be a total and complete collapse of civilization before the year 2100.**

**To summarize the previous two paragraphs, only a fool would gamble the survival of humanity on the possibility that the religions mentioned in this essay, and other religions, would change their positions on birth control and abortion and/or the number of people that would follow the demands of their religions relating to birth control and abortion would be so low as not to cause the collapse of civilization.**

**Since I have started to work on this essay I have read in the newspapers that China has changed, or is in the process of changing, it’s position on its one child per family position. According to what I have read in the newspapers, China is now pushing to increase its population by taking steps necessary to convince and provide incentives for its population to have two or more children. There cannot be any dispute that a one child per family policy will cause, and has caused, massive social, political and economic problems. Humanity now has what is known as Hobson’s choice--- solve all of the massive and horrible problems caused by a one child per family policy or permit the human population to grow until civilization collapses, and it must collapse if population continues to grow.**

**Comments about the population estimates produced by the United Nations’ demographers used in this paper are set forth below.**

1. **In 2004 the UN’s demographers predicted that the population would be 9.1 billion in the year 2100.**
2. **In December 2013 they increased their prediction to 10.8 billion.**
3. **Their latest prediction for 2100 is 11.2 billion.**
4. **In just eleven years, from 2004 to 2015, the UN’s demographers increased their prediction for the year 2100 by 2.1 billion (11.2 minus 9.1 = 2.1).**
5. **The magnitude of this change would seem to indicate that there is a strong probability that future predictions would be higher than 11.2 billion**

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