

The Post-Science Prediction of the Knowledge for the Next 2000 Years

Two thousand years ago, the Bible predicted that the most important problem for mankind would be excessive evil. With its correct prediction, today the Bible is still the most influential guide on human behavior. Religions have served to provide artificial constraints on human behavior. However, the world is now plagued by an unsolvable global financial crisis. Mankind has survived the last two millennia by muddling through on auto-pilot without solutions, except the religious advice to reduce evil. For permanent survival, mankind must find guidance on human behavior based on rigorous derivation.

Next two millennia will start a new cycle of human progress. In the past two millennia, human progress had advanced through roughly the Age of Morality, the Age of Religion, the Age of Reason, and the Age of Science, each of which took roughly 500 years. Post-science predicts that the next two millennia will be divided into, in chronicle order, the Ages of Social Science, Life Science, Robotics, and Self-Creation, with each Age taking up roughly 500 years. Also, post-science speculates that a long-term plan of two millennia is needed to guide human progress and to set the correct direction for short-term actions.

Using the past knowledge advance as a guide, 2000 to 2500 AD will be the Age of Social Science, where human behavior will no longer be guided by faith in religions and will be guided by solutions in social science, which will extend the existence of non-violable laws of nature in science into the existence of non-violable laws of nature in social science. Problems in science involve about 5 variables, such as the law of gravitation. From the solution of value and the Infinite Spreadsheet, problems in social science involve around 50 variables, as indicated by the number of inputs of the Infinite Spreadsheet.

The Age of Life Science will extend from 2500 to 3000 AD. Products will be created based on the foundation of complete automation, which characterizes life. Computer science and life science will be put on the same foundation of complete automation. In essence, software will be completely automated with the goal of transforming into DNA. From the choices of machine instructions and the completely automated software, the problems in life science involve around 500 variables. Thus, it appears that every 500 years there is an order of magnitude increase in the complexity of the problems.

Complete automation is the solution to unlimited complexity. The purpose of complete automation is to achieve permanence in the creation. In the completely automated software, the software becomes completely automated with the capabilities of self-generation, auto-update, and auto-documentation.

After solving the problem of completely automated software and the problem of value, which is needed to determine the value of permanent entities, the concept of complete automation will extend from software to hardware. The goal of the Age of Robotics from 3000 to 3500 AD is to build the Self-Manufactured General Purpose Robot with the ability of touch and with sufficient fault tolerance, which corresponds to fuzzy logic, to take over all human physical labor, leaving humans to just program the Robot using the completely automated software, which can be constantly updated with added robot functions. When the Robots are being improved, there will come a time when mankind will realize that the human is the best robot and DNA is the optimal completely automated software. Thus, the final 500 years will be the Age of Self-Creation. In the process of self-creation, mankind will realize from the design specification the purpose of its own existence, namely, self-creation, for what is created will be able to do anything the creator can do. Self-creation is the ultimate scheme of perpetual improvement.

Post-science solves the problems of touch, value, and software. The problem of touch is to eliminate the bounce when two objects collide. The solution of touch is a precisely timed jumpulse. The problem of value is defined mathematically by Gerard Debreu and Kenneth Arrow in a space extending to infinity in time and space. Debreu's solution of the temporal part of the problem of value is incomplete in his book **Theory of Value**. Post-Science solves the temporal part with the Infinite Spreadsheet. The solution of software is the requirement of permanence, which is achieved through complete automation.

The solution of touch is still in the field of science and can be empirically verified. The solutions of value and software involve infinity in time. Since infinity never arrives, deterministic set of data cannot be collected, and the solutions cannot be empirically verified; the concept of falsification in science is not always applicable in post-science. The acceptance of the solution of value depends on mathematical rigor in its derivation. The acceptance of the solution of software depends on the logic of its derivation.

The solution of touch has eluded Isaac Newton and all the scientists since Newton for the past 300 years. The problem involves the interaction of two motions in the two ends of a spring. It deals with about 25 variables, which come from the five variables from the two ends of the spring, where $5 \times 5 = 25$. Up to now, the solution has made impact in sports and dance. All the professional tennis players have to play with the Jumpulse Stroke, which allows prolonged contact between the ball and the racket. The Jumpulse Dance is possible when a jumpulse, which is an instantaneously generated force, overcomes the static friction between the foot and the floor and has revived world-wide two dances movements, Running Man and Shufflin. The Jumpulse Dance could be the first and the only success of post-science.

The solution of value, a mathematically rigorous non-violable law of nature in social science, was defeated by FIRREA of 1989, a man-made law, proposed by the advocators of the Free Market of Milton Friedman led by Fed Chairman Alan Greenspan during the US Savings and Loan Crisis. Twenty years later, Subprime Woe, again due to over-valuation of the real estate market, as the S&L Crisis, was ten time more severe than the S&L Crisis. FIRREA of 1989 could be one of the main contributors to the Subprime Woe. From its greatest failure, post-science realizes that until man-made laws are replaced by laws of nature, financial crises will continue to plague the economy with increasing magnitudes.

The solution of software has led to two most interesting and extremely potent products: (1) The Human-Language Programming software will allow the human to communicate with the computer forever in native human languages and (2) Universal Permanent Number will be the first company with the potential to reach market capitalization of a trillion dollars, say, by selling a trillion numbers at a dollar per Number. Certainly, the wisest thing for post-science to do is to work on Universal Permanent Number, which will be remembered by the computer not the human, using Universal Permanent Software or Human-Language Programming, when the number of the Numbers becomes too large for humans to remember. Also, post-science believes that the mind is temporary, but DNA is permanent.

The knowledge since the Bible has been dominated by the Bible because knowledge of human behavior is far more important and far more difficult than knowledge of material behavior, which is the preoccupation of science. Using 2000 year as the period of the large cycle of human progress, at the turn of the second millennium and in the face of globalization, which has connected and amplified crises into a global scale, such as the \$60 trillion CDS debacle, the irrational man needs to be poised to embark on a long journey of knowledge discoveries beyond science into social and life sciences or post-science.

The Next 2000 Years: Speculations and Predictions

The influence of nature is far more powerful than that of man. Similarly, the predetermination of creation could far outweigh mankind's self-determination, especially, at the early stages of development of mankind. Today, correct social and life sciences are virtually non-existent. These speculations and predictions should be very surprising. But, with limited evidence and little analytical proof, the following list will surely be modified continually. They are mostly speculations or unguaranteed predictions. Yet, knowledge is based on faith, not reason. On the other hand, the twentieth century was at a very low knowledge level; most of the beliefs will be wrong in the next 2000 years.

1. **Human intelligence will double:** The intelligence level will be decided by choice, not chance. Human intelligence will double in a peaceful environment of the future. Substantial amount of brain cells of Preemies can be saved by trophic factors. The same method can be used to increase the number of brain cells of normal babies. The post-science question has been why have not our creators give us more intelligence in the first place, instead of allowing 50% of the brain cells to die a short period after birth. Statistics seems to show that there is a noticeable portion of very intelligent young people becomes emotionally unstable during certain times of their lives. This could be caused by the over-sensitivity associated with the high intelligence; the real world of an irrational society could be too harsh for these sensitive souls. Thus, the rationality of a society must accomplish the artificial increase of human intelligence.
2. **Society will be based exclusively on laws of nature:** Society will be governed exclusively by non-violable laws of nature, not man-made laws, which are not based on laws of nature. Most significant non-violable laws of nature in social science will be solved within the next millennium, and the progress will be in full force in 500 years, when mankind will become rational. Society will be governed by knowledge and led by people of knowledge, who will have higher authority over free thinkers, who will be above the government, which will govern the mass as a whole.
3. **Programming software will be the only work for humans:** Human work will be consisted of programming of self-manufactured robots. Human and computer will communicate exclusively in human native language. The name "computer" will be replaced by "processor."
4. **Self-creation based on DNA and living system development is the goals of existence:** Space exploration will determinedly increase the value of mankind. DNA will be the most valuable commodity on earth. What has been created by our creators will ultimately evolve to full bloom unaffected by human action. The creation of a better living system based on DNA-like software in far away outer space will be mankind's main preoccupation. The amount of work is unlimited.
5. **Knowledge will be more important than wealth:** Accumulation of wealth for survival will no longer be necessary and will be less desirable than the achievement of happiness. Happiness will come less from wealth than from knowledge. Knowledge discoveries will be the main news.
6. **The order of society will be 1. Knowledge, 2. People of Knowledge, 3. Individuals, 4. Government, and 5. Mass.** Government authority over sex and drug will completely vanish and replaced by knowledge. Most beneficial effects of living organisms will be discovered. Sex will be solely for recreation. Reproduction will be taken over by cloning, artificial womb, etc. Mankind will concentrate on deriving happiness and avoiding pain through knowledge.

The Problem and the Future of Software (Central to Value, Life, and Automation)

Software automates knowledge. The problem of software is to automate software, where programming might never be automated. The Requirement of Permanence is the only discipline of its own for software with the significance that permanent software will sooner or later be infinitely more valuable than temporary software. Post-science satisfies the Requirement of Permanence with the solution of completely automated software, which involves self-generation, auto-update, and auto-documentation.

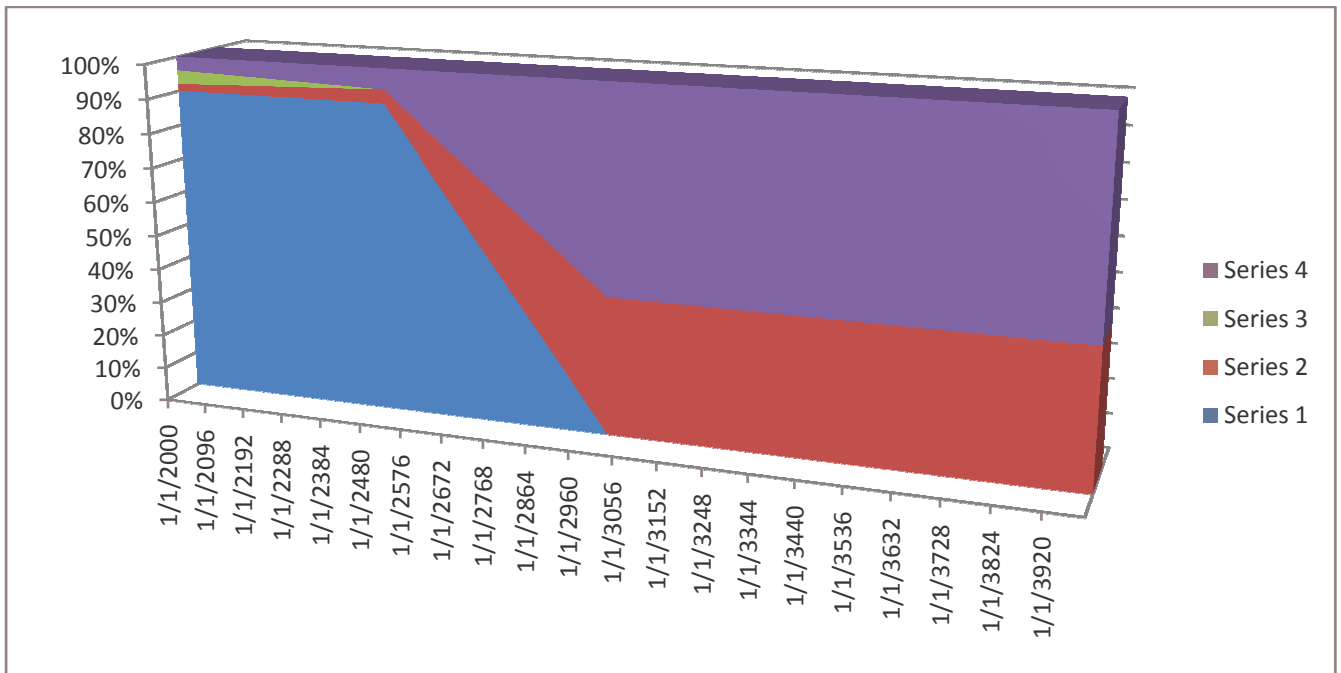
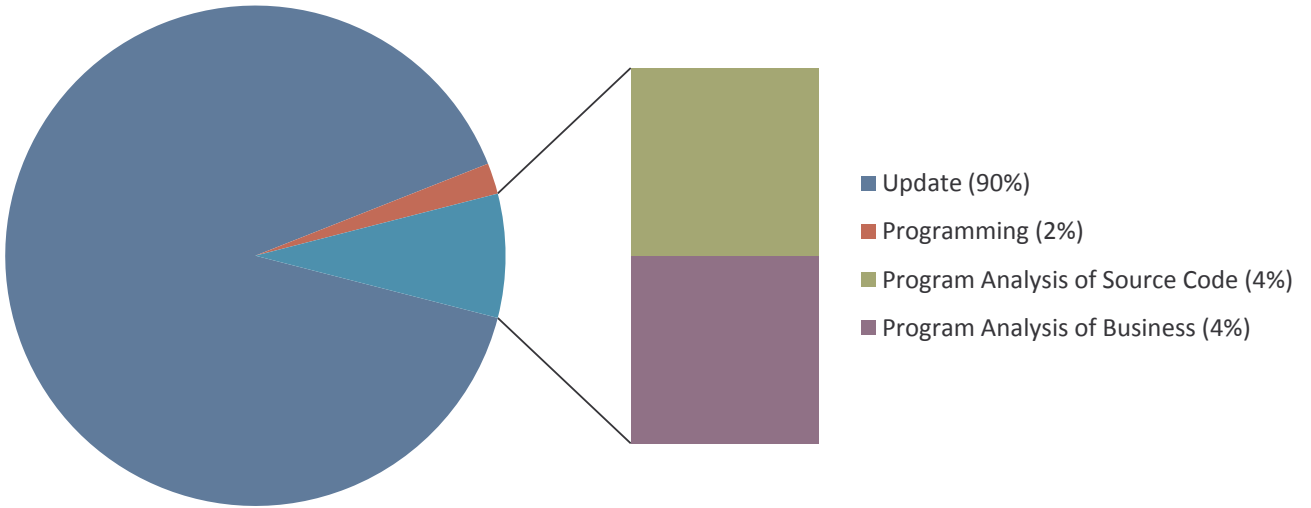
There are three innovations in the completely automated software: 1. Universal User Interface, 2. Universal Computer Source Code, and 3. Universal Data File. The solution is demonstrated by Human-Language Programming, where the human and the computer will forever communicate in human native languages. Human-Language Programming is completely free software available today on Android devices. Human-Language Programming is distinguished from existing software with integer-like, instead of the common English-like, source code, similar to the virtual machine code or DNA. The integer-like source code is the innovation of Universal Computer Source Code, invented by Chien Yi Lee, and is auto-documented in native human languages. The integer-like source codes are answers to the tree-structured numerical multiple-choice questions posed by Universal User Interface, where the tree-structure is constructed as sets based on Human Associative Memory, and the numerical choices are explained in native human language, corresponding to Computing with Words of Lotfi Zadeh. The Universal User Interface guides the user finally to the Universal Data File, where the Address of the record is contained in the record so that the user no longer needs to remember the Address, which is remembered by the software. Henceforth, everyone over the age of 6 should be able to program a computer following human-language instructions in a restaurant or a bus without knowing technology.

Software maintenance occupies over 90% of software budget. The rest about 10% is for software development budget, of which 8% is for program analysis, leaving just 2% for actual programming. Many programmers have claimed that they have solved the problem of program analysis, pioneered by C. V. Ramamoorthy as Software Engineering. Thus, the rough division of the problem of software is 90% for updating, 8% for program analysis, 2% for programming. There will be lasting technical problems, such as Computing with Words of Zadeh, test coverage in program analysis, set-theoretical foundation of T. L. Kunii, manual operations in Ching's completely automated software, and imperfections in DNA.

The above rough picture gives a grand view of the current problem and the existing claimed solutions of software. It is even more interesting to view the picture in the time framework of the future. If finishing the solution of Ching's 90% of the problem of software maintenance, what is remaining is the 10% of the problem of programming and program analysis. Now, program analysis occupies 80% of the total software problem and takes on central importance. If completing program analysis, 100% of the problem of software will be consisted of 50% for technical issues and 50% for business issues. Thus, the work of programming increases from 2% to 100%, when and if the solvable portion of the problems in software is completed. Everyone over the age of six can participate in the programming effort. World's best thinkers are still needed to work on the 50% remaining technical issues of the entire problem of programming. The above-mentioned full process of software development will take, at least, 1000 years. The software will be needed mainly to program Self-Manufactured General Purpose Robots, which ultimately develop into human beings, where the hardware and the software merge into DNA.

The Problem of Software

Software Budget Share



The Problem of Value and Its future

Value can be defined as the sum total of all the future benefits and losses to infinity in time. Value can be expressed in terms of the price or the rate of return on investment. The problem of value can be expressed as the relationship of the price and the rate of return in a semi-infinite time space extending from the present to the infinite future in an all-inclusive formulation.

The problem of value should be solved first before any decisions are made because rational decision should be based on value and all actions should be based on rational decisions. Yet, the problem and the solution of value are not yet fully understood. A mathematically rigorous formulation of the problem of value has been given by Kenneth Arrow and Gerard Debreu in the book Theory of Value by Debreu. A solution of the problem has been offered in the patent "**Quantitative Supply and Demand Model Based on Infinite Spreadsheet**" (Pat. No. 6,078,901) by Hugh Ching.

The world today is engulfed in a global financial crisis, whose magnitude is threatening the maximum tolerable range of the world economy. Without the solution of value, communism failed in the 1970s and capitalism is plagued by chronic financial crises since the 1980s. The solution of value based on the Infinite Spreadsheet is also the solution of planning, the key to the success of a planned economy, where both the private sector and the public should plan jointly to achieve Maximum Planning. The Infinite Spreadsheet has also predicted publicly both the US Savings and Loan Crisis and the Subprime Woe by detecting the over-valuation of the real estate market.

The first two millennia since the Bible can be considered the Era of Morality, which is based on value. The next two millennia should be the Era of Knowledge, where, in particular, the quantitative solution of value should replace the qualitative solutions of value. Since the problem and the solution of value have both been posed and solved with mathematical rigor, but yet to be accepted, the next five hundred years will be the Age of Social Science where non-violable laws of nature in social science will replace man-made laws in the regulation of human behaviors, as the non-violable laws of nature in science regulate material behaviors in the past five hundred years of the Age of Science. The problems in social science have around 50 variables, as indicated by the inputs of the Infinite Spreadsheet, vs. 5 for science.

Science has demonstrated the existence of non-violable laws of nature, but has also brought mankind the potential for self-destruction. Science is value neutral, and, thus, the first two millennia belong, not to science, but to morality led by organized religions, which could be responsible in preventing mankind's self-annihilation due to excessive practice of evil during overly zealous competition in global conflicts. Creations of positive value can exist only after the availability of the solution of value.

Being mathematically rigorous, the solution of value demonstrates the first significant non-violable law of nature in social science. The solution regulates almost every one of our daily decisions and is far more stringent than all the man-made laws put together. Milton Friedman recommends the elimination of all man-made regulations by exposing their fallacies. Morality predicts the excessive evil due to competition in the absence of a rational method of arbitration based on the solution of value and tries to balance evil with the teaching of good. Both Friedman and morality are the forerunners of the non-violable laws of nature in social science. The second two millennia will be the start of truly knowledge of value based on the solution of value and will be the Era of Knowledge.

The Problem of Motion and Its Future

The motion of material objects are governed by Newtonian Mechanics, but the initiation of motion is cause mostly by jumpulse, an instantaneously applied finite force, which is unrecognized by Isaac Newton. A finite force is more efficient in starting a motion than a force which increases from zero.

It takes time for an object to move from one position to a different position, and it takes time for an object to accelerate from one velocity to a different velocity. But, for acceleration and all the time derivatives higher than the acceleration, it does not take time to increase from zero to a finite amount. The corresponding finite force is called jumpulse. And the phenomena can be considered a new law in physics, which is necessary for touch or collision without bounce and for prolonged contact in sports. In addition to the application of jumpulse, both touch and prolonged contact requires precise timing.

One of the major bottlenecks of robotics is the problem of touch; a robot finger bounces a surface like a ball bouncing off a racket. Today, no robot can touch. Japanese Sixth Generation Computer Science Robotics failed because robots cannot touch. All professional tennis players today have to hit with jumpulse in order to survive financially, for prolonged contact is the secret of consistency in tennis.

The concept of jumpulse will take center-stage in the Age of Robotics, which will arrive in about one thousand years after the perfecting of completely automated software for programming robots. Self-Manufactured General Purpose Robots with the ability of touch will be programmed by completely automated robot software, whereby the hardware and the software will merge into one combined system. The development of the Self-Manufactured Robots will lead to the realization that living things programmed by ultimate completely automated software DNA will be the ultimate goal of robot development. After the Age of Robotics will be the Age of Self-Creation.

There is a strong suspicion that the biological cell moves with a jumpulse mechanism, which is generated when a tension in the cell is released with the sudden removal of one of two opposing forces. The phenomenon is called biotensegrity, which stands for biological tension integrity and can be directly described as a jumpulse mechanism. The fact that all cells are under tension supports the importance of jumpulse. To be efficient, all human applied motions start with jumpulse, instead of zero force, and all robot motions should start with jumpulse.

The Jumpulse Stroke is demonstrated by the world top tennis players, for example, at <http://www.jumpulsetennis.com/> and https://login.yahoo.com/config/login_verify2?&.src=ym. The jumpulse mechanism is first demonstrated with video with two colliding cars, which do not bounce off each other after collision at:

http://www.youtube.com/watch?v=PixwnjvNINQ&feature=player_embedded

Unfortunately, only two people, Hugh Ching, the founder of post-science, and Ta-You Wu, the Father of Chinese Physics, thus far, have demonstrated the ability to think the phenomenon of prolonged contact, and two people, T. L. Kunii and Rustin Roy, have expressed full approval of the concept of jumpulse. The problem of prolonged contact involves the interaction of two objects at two ends of a spring each with 5 variables and $5 \times 5 = 25$ variables, versus about 5 variables for most problems in science.

Proposal Title: Universal Permanent Number (UPN) Based on Universal Permanent Software (UPS)

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Google past contact: Dr. Eric Schmidt, who hand delivered the patent on Universal Permanent Software to Sun Micro Systems, for which PI is grateful.

2. Proposal

Abstract: This proposal deals with the design of the smartest and largest company with the potential of breaking the trillion dollar market cap. The proposed company is Universal Permanent Number (UPN), which provides globally distinct universal permanent integer names. It is directly dependent of search engine companies of which Google is the leader, but is not yet designed for searching permanent entities. The proposal is one of the basic parts of the overall goal of achieving complete automation, which characterizes life. It deals with assigning names to permanent entities as the first step in the management of the unlimited knowledge in complete automation. This research proposes the collaboration between the Research and Incubation Center (RIC) of Northwestern Polytechnic University (NPU) and Google in the design and the development of a global search system for the submission and the retrieval of distinct Universal Permanent Numbers (UPN). Universal Permanent Numbers belong to the complete set of globally distinct integers, which can be represented by in any form of radix or numeral base system, from minus infinity to plus infinity. UPN is designed for giving globally distinct permanent names to permanent entities, such as knowledge, books, people, land parcels, and URLs. UPN should replace most of the existing number systems, such as ISBN, DNS, and Unicode, whose designs are short-sighted and narrow-vision, and, therefore, are neither permanent nor universal. When the number of UPNs becomes too large for humans to remember, UPN can be remembered by Universal Permanent Software (UPS), which is designed based on Human Associative Memory, which allows humans to access an unlimited amount of information. UPS needs to operate under open source, and its latest version of Human-Language Programming will be released as free software under GNU Software License. Every person should be identified by the person's DNA, which should be assigned a universally unique permanent integer name, namely, a Universal Permanent Number. DNA is the most valuable commodity on earth.