

For the Ninetieth Birthday of Lyndon LaRouche:

September 8, 2012:

**The Man Who Did the Most for the
Epistemological Unity of the Human Mind.**



From the desk of Pierre Beaudry



FOHI'S NOETIC CHARACTERISTIC OF CHANGE

[Leibniz's insight into the ancient Chinese epistemology of Fohi]

By Pierre beaudry, September 8, 2012



FOREWORD

Almost five thousand years ago, the founder of Chinese civilization, Fohi (King Fu Xi - 2952 BC), made a universal discovery of principle that was to give him mastery over the universe, but which was not to be acknowledged in the West until four and a half thousand years later, when Leibniz rediscovered it as the reciprocal of his own epistemological investigation into the *Universal Characteristic* of the human mind.

Leibniz's insight was to discover, in Fohi's *[I Ching: Or Book of Changes](#)*, the timeless dynamics of his own epistemological inquiries; thus, the two thinkers were able to communicate with each other, at the speed of mind, in spite of incredible distances of space and time that separated them. Their means of communicating and of bridging the gap of physical-space-time between East and West was accomplished through a reciprocity based on a common devotion to changing mankind for the better, as if through the simultaneity of eternity of our finite yet unbounded universe.

Now, 311 years after Leibniz wrote about this, and 4,964 years after Fohi wrote *[I Ching](#)*, this report is aimed at rediscovering that such a *principle of long distance reciprocity* represents one of the most urgently required principles of change to be assimilated, today, in the middle of the biggest world monetary breakdown crisis in history. With that intention in mind, I include the four following puzzling points of investigations for improving the science of the human mind.

1. THAT WHICH INCLUDES AT ONCE THE ARTS OF DISCOVERY AND OF JUDGMENT
2. FOHI AND THE DISCOVERY OF PRINCIPLE OF THE METAPHORICAL PROCESS
3. HOW THE INTENTION OF MIND IS TO KNOW THE FUTURE BY FORECASTING
4. APPENDIX: THE SEVEN ANCIENT PLANETS AND THE DAYS OF THE WEEK

INTRODUCTION

The epistemological unity of mind between East and West on this planet has been attempted several times in past history yet it has never been so urgent to realize as today. When you have the responsibility to assess the world strategic situation, as Lyn demonstrates in his writings, this is what mankind has to be concerned with foremost, and this is why you always need to go back to former times and rediscover how similar world strategic situations were dealt with to overcome the apparent human division between East and West. In other words, how do you solve the current East-West crisis?

With respect to our present circumstance, there were two historical situations that I know of, in which our humanist faction lost the strategic battle for the epistemological unity of the human mind. First, the strategic collaboration organized by Charlemagne and Haroun al-Rashid, at the turn of the ninth century; and secondly, a similar strategic unity between East and West attempted by Leibniz with Peter the Great, at the turn of the seventeenth century. Aside from the exception of the American Revolution, which successfully united the Atlantic and the Pacific with the Manifest Destiny policy of John Quincy Adams and Abraham Lincoln, the last time our humanist faction won the fight between oligarchism and republicanism was around 5,000 years ago with the Chinese leader, Fohi (King Fuxi – 2952). You ask: how can I know that with such certainty? I say, by applying the Leibniz method of [Analysis Situs](#).

[Analysis Situs](#) was the method Leibniz used to discover the unique noetic characteristic of *Tai Chi*, as the basis for Fohi's book of variations, [I Ching: Or Book of Changes](#). This book has been one of the most enduring and significant contributions to the mental health of mankind for the past 5,000 years. However, it has been reduced, almost exclusively, to a physical exercise as most people have misunderstood its real intention and mind. As the oldest book in the unique opportunity to rediscover how epistemologist known to man, was intends to demonstrate a little known misunderstood subject by aspect of Leibniz's rediscovery of In other words, Fohi's idea of a *Characteristic* of the human mind authentic expression of creativity, rediscovery of its significance, a contribution for the benefit of all of



purpose to be a matter of world, [I Ching](#) represents a Fohi, the most ancient thinking. This report aspect of this investigating a crucial Fohi's original discovery. *Universal Noetic* should be considered as an and the Leibniz unique and crucial mankind.

The playful Leibnizian designed to understand axiomatic behavior; therefore, instead of function as a physical exercise, I epistemological exercise in the and right chirality function of mind. In this regard, you can better *Characteristic of Change* as a mind.



method of [Analysis Situs](#) is changes in human looking at the *Tai Chi* shall be looking at it as an complementarity of a left reciprocity in the human understand the *Universal* fundamental matter of

Figure 1. *Tai Chi is a state of mind.*

1. THAT WHICH INCLUDES AT ONCE THE ARTS OF DISCOVERY AND OF JUDGMENT.

“There is no division in mind; mind is one.”

Lyndon LaRouche

Leibniz’s idea of a *Universal Characteristic* was not simply a quest for a universal language, but, most significantly, a means of investigating how the universal power of the human mind changes by assimilating and communicating to others discoveries of universal physical principles, by means of metaphorical encryptions that are capable of deciphering epistemological experiences, which are common to all people of the world, and whose decryptions would be best expressed by telepathic forms of universal matter of minds. This characteristic is essentially the metaphorical process of the creative human mind as developed by Lyndon LaRouche as opposed to the cybernetic illusion that Norbert Wiener advocated. This is the metaphorical process that Fohi’s *I Ching* was meant to represent in its most creative intention for future generations; that is, for every single mind to be creatively one in all and all in one. That’s how the Koehler gestalt principle works.

At the turn of the 1700’s, the moral standards of Western European economic development had greatly been undermined by the materialistic influence of the Venetian-Anglo-Dutch perversion known as the British East India Company, notably with the concoction of fallacies of composition such as those of the infamous magician, Isaac Newton, and of the monetarist criminal, John Law with his *Mississippi Bubble*. The political morality, which had been inherited from Cardinal Gilles Mazarin’s principle of the *advantage of the other* at the *Peace of Westphalia* in 1648, had been relegated to the oubliettes. Leibniz was attempting to restore it by seeking to understand Chinese culture and the role that Russia’s Peter the Great could play in revitalizing classical European moral principles by establishing a Landbridge policy with China. In a letter to Peter the Great on the subject of creating an Academy of Arts and Science in Russia, Leibniz wrote:

“It seems that God has decided that science should make a tour of the world and penetrate as far as Scythia, that he has designated Your Majesty to be his instrument for that purpose, while Your Majesty is in a position to draw from Europe on one side and from China on the other what there is of the best, and to perfect the institutions of both those countries by means of wise reforms.”

[...] “The new and marvelous discovery I have made, namely the secret of deciphering the old characters of the famous Fohi, one of the first kings and philosophers of China, who lived more than 4,000 years ago, will especially be agreeable to the Chinese and procure an entry for us. I succeeded by myself in discovering a new mode of counting, and I have found that this new method sheds a great deal of light on all of mathematics, and that, thanks to it, we may discover things we have had difficulty with. By putting together all the matter it is likely that this old Fohi had the key to this method, as we can see in the characters themselves and from what Father Kircher in his *China Illustrata* and Father Couplet and others have published. It can be seen from the large figure of 64 characters, called the *Li-King [I Ching]* among the Chinese, which Father Bonnet [sic. Bouvet] has sent by including a Chinese copy which is in harmony with the

discovery that I communicated to him.” (Leibniz Letter to Peter the Great, 1716 in *Leibniz Selections*, Edited by Philip P. Wiener, Charles Scribner’s Sons, New York, 1951, p. 598-99)

Leibniz concentrated on the five books that ancient China had produced, namely, *Book of Changes*, *Book of Odes*, *Book of Documents*, *Record of Rites*, and *Spring and Autumn Annals*. For Leibniz, those texts contained the principles of natural law, that is to say, of moral truths about right and wrong that had been understood in ancient times through the power of reason alone, without any recourse to make-believe, or divine revelation. Unfortunately, that natural law had not been understood by the following generations, and so, the ancient classical books were deformed by including divination and superstition.

Contrary to this intention and purpose, Leibniz considered that such a Chinese treasure of the most ancient historical state of mind of mankind was the most important thing to revive for the benefit of future generations of all of mankind, because it embodied the intention that underlies the most important community of principle between Eastern and Western civilizations, that is, the sharing of the *common aims of mankind*. Leibniz considered that this unique power of reason that the Chinese leader was able to achieve and promote, without divine intervention, was the key to solving the seemingly eternal problem of warfare among the nations of the world.

Thus, the Chinese had been able to achieve peace solely on the basis of respect for lawful reason without faith in blind revelation. As Jean Sylvain Bailly demonstrated in his studies on ancient astronomy, such a Chinese community of principle existed during the period of the astronavigators, who were living during the fourth millennium BC, and their knowledge had been transmitted to key sectors of the civilized world almost at the same time, as a matter of policy for the advantage of the other. Astronavigators, also known as the Lost People of the Seas, had founded Ancient Astronomy as an epistemological beacon guiding them in their travels, and orienting them across the globe by way of the stars. They travelled with their eyes riveted to the heavens, yet they always knew where their feet were. Such astroepistemological traces had been left as a common heritage to mankind in China, India, Egypt, Persia, Greece, as well as in the three Americas. Two of their ancestral leaders were Prometheus and Atlas, who had established a universal principle that they derived from the ordering of celestial motions and identified as the Golden Rule of Reciprocity which said: *“Do unto others as you would have done unto you.”* Thus, the idea of the “mandate from heaven” was born. Plato expressed this principle by applying it to celestial observations by saying:

“God devised and bestowed upon us vision to the end that we might behold the revolutions of Reason in the Heaven and use them for the revolving of the reasoning that is within us, these being akin to those, the perturbable to the imperturbable; and that, through learning and sharing in calculations which are correct by their nature, by imitation of the absolutely unvarying revolutions of the God we might stabilize the variable revolutions within ourselves.” (Plato, *Timaeus*, 47b-c.)

The “Golden Rule” represented the time when the same principle of justice for the benefit of all human beings had been established as a universal principle of conduct around the entire planet, in proportion to the ordering principle of motion of the stars in heaven, and had been transmitted and shared by such galactic thinkers as Fohi in China, Imhotep in Egypt, Thales, Pythagoras, and Plato in ancient

Greece. This principle of reciprocity was obliterated at the time of the *Trojan Wars* by the oligarchical principle of “*taking advantage of others,*” which is reflected today in every aspect of criminality of the British monetary system around the world. This principle of reciprocity is also completely contrary to the so-called “golden rule” that the French Constitutional Court had the hypocritical gall to adopt recently under the central banker’s demand to balance the budget.

Leibniz was trying to establish a *Universal Characteristic* that was capable of conveying universal physical principles in an epistemological form of living geometry that he called *Analysis Situs*, a universal geometry of change in physical-space-time that could express how everything is created in the universe by way of a least action principle, a geometry of situation that progresses, as a nuclear fusion process similar to what Lyn identified as a lawful measure of increases in energy-flux-density. This means that *Analysis Situs* represents a higher geometry by means of which creative human beings can express change in a conceptual form of variation of position. Bernhard Riemann later called it an $n + 1$ extended manifold that has the power to change internally with n ($\underline{n-1}$) functions of position.

2

Such a *universal characteristic* had to transcend the cultural space-time barriers that separated nations, and had to be expressed in a universal language so that different peoples, even situated at opposite ends of the universe, could communicate their experiences of universal principles to each other, through a simultaneity of eternity, without having to translate them through the cultural particularities of their specific national idiosyncrasies.

Leibniz was looking for something that would be as universal as numbers, but which would not be of the domain of mathematics. Moreover, this *General Characteristic* or *Combinatorial Characteristic* was not to be either a language in the narrow sense of the word that could be translated into national languages, but a language that could establish and express universal reciprocity among all of the peoples of the world through the most universal community of principle of mankind, *agape*. The purpose of such an epistemologically moral language, therefore, was not created for the purpose of understanding foreign cultures, but to understand what God would understand; that is, an actual knowledge of the Universal Mind. As Leibniz put it:

“But perhaps no mortal has yet seen into the true basis upon which everything can be assigned its characteristic number. For the most scholarly men have admitted that they did not understand what I said when I incidentally mentioned something of the sort to them. And although learned men have long since thought of some kind of language or universal characteristic by which all concepts and things can be put into beautiful order, and with whose help different nations might communicate their thoughts and each read in his own language what another has written in his, yet no one has attempted a language or characteristic which includes at once both the arts of discovery and of judgment, that is, one whose signs or characters serve the same purpose that arithmetical signs serve for numbers, and algebraic signs for quantities taken abstractly. Yet it does seem that since God has bestowed these two sciences on mankind, he has sought to notify us that a far greater secret lies hidden in our understanding, of which these are but the shadows.” (Gottfried Leibniz, *On the General Characteristic*, (circa 1679), *Philosophical Papers and*

Letters, selection translated and edited with an introduction by Leroy E. Loemker, 2nd ed. (Dordrecht, Holland; Boston: D. Reidel Pub. Co., 1989, p. 221.)

For Leibniz, this idea of universal characteristic is bestowed on man by God through a cyclical process of a Sphaerics temporal periodicity whose shadows can be made present in his method of Geometry of Situation, or [Analysis Situs](#). From such a universal domain through which it comes down to us, that “secret lying hidden in our understanding” is noticed through the governing principle of an irreconcilable fight between two universal political principles which have been in opposition to each other, since the beginning of time. That political opposition has been resolved, historically, for example, by [Filippo Brunelleschi’s catenary principle](#) applied to the Coupola of the Cathedral of Florence, and by Nicholas of Cusa’s application of the same principle to the Council of Florence. It was ultimately embodied in the successful outcome of the American Revolution with the successful replacement of the oligarchical principle of governance by the republican principle of self-government. This same conflictual situation, which is world-wide today, can also be resolved by the dynamics of change in physical-space-time between past and future developments of the planetary Defense of the Earth. It is such changes which accompany the Earth in its periodical cycles of physical-space-time, and whose interactions can be expressed, at least in first approximation through the instrumentality of the binary musical system of arithmetic, that was first discovered and expressed by Fohi. The question, therefore, is to determine which would best govern mankind: oligarchism or republicanism, the past or the future?

2. FOHI AND THE DISCOVERY OF PRINCIPLE OF THE METAPHORICAL PROCESS

Many different peoples, including the Chinese, have made mumbo-jumbo mystifications of what Fohi called, [I Ching: Or Book of Changes](#), by reducing his creative idea to a simplistic form of dualism between good and evil, light and darkness, or feminine and masculine, etc. Therefore, a word of caution becomes necessary. It is not all oppositions that are oppositions of principle. The point to emphasize is that this Fohi discovery is so elementary, and yet so encompassing; so modern, and yet so ancient; so variable, and yet it has only two components; that these facts alone should be enough warning signs that there is, here, more than meets the eye. So, it should be clear, from the onset, that this discovery is not as self-evident as it appears to be, and that the process of change that it embodies cannot be recognized through any form of sense perception, because the metaphorical process of change and variation that it represents pertains essentially to the epistemology of the creative process.

Leibniz best expressed this intention by discovering a binary cipher which was based on only two elements of notation designed, among other things, to express the becoming of change in physical-space-time with what we call 0 (zero) and 1 (one). These two notations, however, do not represent two numbers, nor are they two elementary particles as are used for HDTV digital tuners. They are notations of variation, or metaphors of the changing reality of physical-space-time coming from the future. In that sense, they provide high definition to the mind, not to the senses.

Those two notations may be doubled indefinitely by the growing power of two in a form of circular action that is similar to the orbits of the planetary motions of all solar systems inside of any galaxy of our universe, and serve also to express the harmonic ordering of our well-tempered musical

system. As Leibniz saw it, this simple process of growing by doubling, pertains to a universal Characteristic. However, the best way to understand this idea of universal characteristic is to translate it into the Leibnizian language of [Analysis Situs](#). Leibniz explained that process as follows:

“The ordinary reckoning of arithmetic is done according to the progression of ten by ten. We use ten characters, which are 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, which signify zero, one, and the succession of numbers up to nine inclusively. And then, when arriving at ten, one starts again, writing *ten*, by 10, ten times ten, or a *hundred*, by 100, ten times a hundred, or a *thousand*, by 1000, ten times a thousand by 10000, and so on.

“But instead of the progression of ten by ten, I have used for many years the simplest progression of all, which goes two by two, having found that it is useful for the perfection of the science of Numbers. Thus, I don’t use any other characters except 0 and 1, and then after reaching two, I start again. This is why *two* is here expressed by 10, and two times two, or *four*, by 100, two times four, or *eight*, by 1000, two times eight, or *sixteen*, by 10000, and so on. Here is the *Table of Numbers* of this way, which may be extended as far as is desired. Here, one sees at a glance the reason for a ***celebrated property of the doubling geometric progression*** in whole numbers, which establishes that if you have only one of these numbers for each degree, you can generate all the other whole numbers below the double of the highest degree.” (Gottfried Leibniz, [EXPLICATION DE L'ARITHMETIQUE BINAIRE.](#))

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1							1
0	0	0	0	0	1	0									2
0	0	0	0	1	1										3
0	0	0	1	0	0										4
0	0	0	1	0	1										5
0	0	0	1	1	0										6
0	0	0	1	1	1										7
0	0	1	0	0	0										8
0	0	1	0	0	1										9
0	0	1	0	1	0										10
0	0	1	0	1	1										11
0	0	1	1	0	0										12
0	0	1	1	0	1										13
0	0	1	1	1	0										14
0	0	1	1	1	1										15
0	1	0	0	0	0										16
0	1	0	0	0	1										17
0	1	0	0	1	0										18
0	1	0	0	1	1										19
0	1	0	1	0	0										20
0	1	0	1	0	1										21
0	1	0	1	1	0										22
0	1	0	1	1	1										23
0	1	1	0	0	0										24
0	1	1	0	0	1										25
0	1	1	0	1	0										26
0	1	1	0	1	1										27
0	1	1	1	0	0										28
0	1	1	1	0	1										29
0	1	1	1	1	0										30
0	1	1	1	1	1										31
1	0	0	0	0	0										32
etc.															

If you find this perplexing, it is because you are missing the [Analysis Situs](#) idea of filling empty spaces with waves of periodical cycles of doubling 0 and 1, which spring from the flowing power of the whole. What Leibniz discovered is a means of reckoning numbers that flow as wave combinations within the manifold of that generating totality, and by proceeding from the top down, that is, from the end. In other words, if you think in terms of long waves of history or of physical intervals of action coming from the future, then, the process will make sense to you and you will be able to correlate, one on one, all of the whole series of regular integers with all of the Fohi signs without difficulty. Follow closely how Leibniz unraveled this apparent mystery of Fohi’s [I Ching](#).

In the last section of a four part letter that Leibniz sent to the chief counselor of the Duc d’Orleans, Pierre Rémond de Montmort, in 1716, Leibniz discussed the nature of “*The Characters that Fohi, founder of the Chinese Empire, used in his writings and on binary arithmetic.*” Let us study closely the discovery as Leibniz reported it as a “rediscovery” of Fohi’s [I Ching](#) principle:

LXVIII [...] “It seems that if our Europeans were sufficiently informed about Chinese literature, then, with the help of logic, critical thinking, mathematics, and our way of expressing our thoughts in a more determined manner than theirs, we could discover in the most ancient Chinese monuments of the remotest antiquity many things unknown to modern Chinese and even to their

ancient commentators, as classics as they are thought to be. This is how Father Joachim Bouvet S. J. and I have discovered the meaning, which is apparently the truest to the letter of the characters of Fohi, founding father of the Empire, which merely consists in combinations of unbroken and broken lines, and which are considered the most ancient of China and without doubt in their simplest form.”

“There are sixty four such figures in the book called [I Ching](#), otherwise known as the book of variations. Several centuries after Fohi, and also more than five centuries after Confucius, Emperor Ven’Vam and his son, Cheu Cum, have looked into them for philosophical mysteries. Others even tried to extract from them a sort of geomancy, and other similar vanities. Instead however, it appears that it was exactly binary arithmetic that this great legislator had mastered and that I have rediscovered several thousand years later. And, in that Arithmetic, there are only two notes, 0 and 1, by means of which one can write down all numbers. And, when I communicated this to Father Bouvet, he recognized immediately the characters of Fohi, because there was a precise correspondence between the interrupted line _ _ for 0 or zero and the complete line ___ for unity 1.” [...] “But since this arithmetic has been lost completely, the following generations of Chinese people were far from realizing what they had lost. And they turned these Fohi characters into I don’t know what symbols and hieroglyphs, as people usually do when they stray away from the true meaning of something; just like the good Father Kircher did with the writings of Egyptian Obelisk that he had no understanding of. And this also shows that the ancient Chinese had surpassed considerably the modern ones, not only in piety (which makes the most perfect morality) but also in science.”

[...] “LXXI. This made me think that in the binary or doubling progression, all of the numbers could be written with 0 and 1. Therefore:

“10 will correspond to 2, 100 will correspond to 4, 1000 will correspond to 8, etc. [...]

“These expressions can all be found in the following manner, for example: $\ll 111 = 100 + 10 + 1 = 4 + 2 + 1 = 7$. $11001 = 10000 + 1000 + 1 = 16 + 8 + 1 = 25$.” (Gottfried Leibniz, [Discours sur la théologie naturelle des Chinois](#).)

1		1
10		2
100		4
1000		8
10000		16
100000		32
1000000		64
etc.		etc.

In the previous report, Leibniz insisted that he was not simply dealing with numbers, but with the simplest expressions of their underlying growing progression. In 1703, he wrote for the *Mémoires de l’Académie Royale des Sciences*:

“But, the reckoning by two, which is by 0 and by 1, thanks to its brevity, is the most fundamental for science, and leads to new discoveries which become useful afterward, even for the application of numbers, and most of all for Geometry. And the reason for this is that, as numbers are reduced to the simplest principles, like 0 and 1, a wonderful order is apparent everywhere. For example, in the *Table of Numbers* itself, it is clear in each column there reigns periodical cycles which always begin over again. [...] However, I do not know if there ever was for Chinese writing any benefit approaching the one that is necessary for the Characteristic that I am projecting. The point being that every reasoning which can be derived from notions could also

be derived from their characters by a way of reckoning, which would become one of the most important means of improving the human mind.” (Gottfried Leibniz, [*EXPLICATION DE L'ARITHMETIQUE BINAIRE*](#), qui se sert des seuls caractères O & I avec des remarques sur son utilité et sur ce qu'elle donne le sens des anciennes figures chinoises de Fohi.)

For a similar reason, the Fohi hexagrams are not meant to be simply numbers, nor are they Chinese characters as the later Chinese ideogram characters became. The hexagrams represent a universal way of reckoning periodical change in the process of becoming; that is to say, in a way of reflecting the creative process itself as if expressing the progress of knowledge itself. The ordering of the hexagrams is the mapping of the creative mind itself. And, within that mapping state of mind, it is the periodicity that counts, not the content, the process of change, not the thing that changes.

For example, the two original elements that compose them are not numbers or symbols, but shadows of the noetic process of coming into existence by doubling of something that did not exist before. That process represents the progress of a future coming into existence of a new combination of physical-space-time. Indeed, anything that grows must become the double of itself at some moment or other. That is, when you take the unbroken line $_$ to express what already exists (1), and the broken line $_ _$ to express something that does not yet exist (0), as Leibniz implied, you can expect a definite increase in growth to emerge, as opposed to some representation of meaning.

It is in that sense that the [*I Ching*](#) characters are not numbers, but enumeration of change by rotating action, an action of reckoning changes within periodical cycles. This is also what Leibniz had identified as being part of a “*natural theology of the Chinese*” which is entirely coherent with Platonic epistemology. In another report, I shall demonstrate how the doubling of the cube by Archytas pertains to the same process. And Leibniz related this notion to the creative process itself: “All combinations arise from unity and nothing, which is like saying that God made everything from nothing, and that there were only two first principles, God and nothing.” (Quoted by Ching, Julia and Willard G. Oxtoby. *Moral Enlightenment: Leibniz and Wolff on China*, Nettetal, Steyler Verlag, 1992. p. 17.) Probably from the same source, Leibniz expanded on this idea of creative cause and effect relationship between 1 and 0, as follows:

“By generating everything from the one and nothingness, Fohi had in mind the creation which he represented in the same fashion as in the story of Genesis. Indeed, the 0 can express the vacuum that precedes the creation of heaven and earth which are then followed by the seven days, each of which indicating what existed and what was being created, when that day began. At the beginning of the first day, there existed 1, that is, God. And finally, at the beginning of the seventh day, the totality existed; that is why the last day, which is the Sabbath, is the most perfect, because the totality is created and filled, and thus, 7 is written 111 without 0.” (Quoted from Aleksandar Nikolic, [*Gottfried Wilhelm Leibniz et le système binaire*](#), Leibniz letter to Bouvet, 2/3 April, 1703.)

That end was the initial intention. Indeed, since God the Creator is free from any external constraint (otherdirectedness), but is necessarily tied internally (innerdirectedness) through its constant perfecting power of changing the state of nothingness (0) into the state of harmony of the one (1), the universe of Fohi becomes even more closely connected to the universe of Leibniz by this characteristic of

Preestablished Harmony, because all of these steps are not really successive steps, but created in the Divine Simultaneity of Eternity. The completeness of the totality is what is intended first, as Koehler would put it.

According to Leibniz, Fohi's view of the universe is composed of an ordered number of possible combinations of change, because we live in the best of all possible worlds. Since the most natural ways for the creative process to proceed is to change in a binary form, from the top down as opposed to the bottom up, we will follow Leibniz's characteristic of Fohi rather than what came down as the modern Chinese manner of proceeding from the bottom up.

Rotating intervals of action, here, should rather be thought of as the rhythmic ordering of a musical composition, following the motions, for example, of Furtwängler's baton between the notes. Again, don't focus on the numbers, as such, but on the ideas of progression into the future, the ideas of proportionality and reciprocity between the notes or between human beings. What the Fohi notations indicate is the condition of what exists between things, not the things in themselves. What these Fohi notations represent, therefore, is the progressive condition of change between things that Leibniz called the action of a "moral and spiritual substance" in motion in the universe, a motion in which a spiritual being must be connected to a physical body as its guiding principle of conduct, something like a wavelike principle.

This first principle was called *Li* by the Chinese, meaning the ruling spirit of the universe. As the primary principle of Chinese natural theology, *Li* is understood as the principle of mind in heaven that generated *Ch'i*, or matter, in a manner similar to God being the soul of the material universe. As Michael Billington reported about Leibniz in his extensive report on [*The European 'Enlightenment' & The Middle Kingdom*](#), "... the *Li* concept is very close to his own concept of 'monad' as the primitive substance of all things in the universe...."

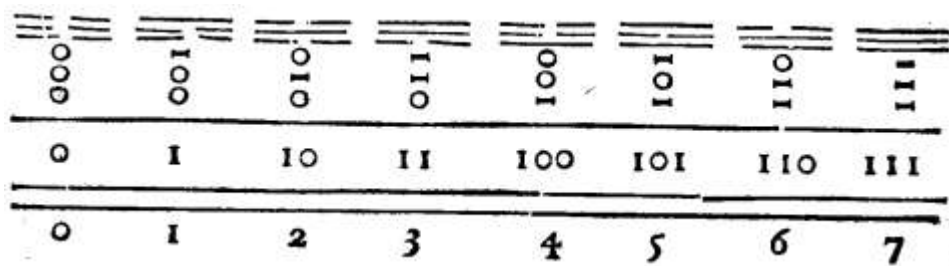
However, the point that I wish to emphasize, here, is that [*I Ching*](#) is an application of the first principle of *Li* in its exemplary use of the universal principle of reciprocity. As Leibniz explained, *Li* is also the sovereign plenitude of an infinite globe which fills the universe everywhere and leaves no place empty. This corresponds, says Leibniz, "to our way of saying that God is a sphere or a circle whose center is everywhere [...] and that it is a creative intelligence which forecasts everything, which creates everything, and which has the power to do everything." (Idem, Section XI) In that sense, one of the most important and difficult paradoxical qualities of *Li* is that it is both *one and all*, very much in the manner that Fohi applied the cycles of the reciprocity principle to [*I Ching*](#), that is, that it reflects the specific quality which Leibniz attributed to the reciprocity of *Li*:

"This maxim that *all is one* must be the reciprocal of this other maxim that *one is all* that we have mentioned above in speaking of the attributes of *Li*. It means that God is all eminently (*eminenter*) as the perfections of the effects reside in their causes, and not as if they were composed, or as if this great one was their matter, but by emanation (*emananter*), because they are their immediate effects, such that *Li* assists them intimately and expresses itself in the perfections which it communicates to them in proportion to their receptivity. And this is why it is said *Jovis omnia plena*, that *Li* fills everything, that it is in everything, and that everything is in it." (Gottfried Leibniz, [*Discours sur la théologie naturelle des Chinois*](#). Section XXII)

“*Everything is full of Jupiter*” said Ovid in his *Bucolics*.” Nicholas of Cusa said the same thing about the time of simultaneity of eternity in *The Vision of God*: “Eternity, therefore, both enfolds (*complicat*) and unfolds (*explicat*) succession, since the concept of the clock, which is eternity, doth alike enfold and unfold all things.” Leibniz also made the point that this natural correspondence between the human mind and the mind of the universe, between the individual action and the action of universal physical principles, was lost during ancient times, and that the majority of the Chinese people who came after Fohi mystified this natural process of mind, because they were attracted more to the name of things rather than to the creative process that generated things. This flaw, however, is not particular to the Chinese; every human being falls into a similar debilitating state every time creativity is replaced by practicality.

No doubt the true functioning nature of this binary form of spiritual action was also forgotten because people thought the exercise was intended to be practical. It may have found some usefulness in the practical manner of calculating and measuring of things, as well as for establishing contracts or book keeping, but the most significant aspect of the Fohi discovery was not of a practical nature. This amazing discovery had an epistemological characteristic to it that Leibniz identified with respect to determining interactions, at the speed of mind, among human beings, the universe, and God. This can be illustrated by a unique example that Father Bouvet brought to the attention of Leibniz when he discovered a way to translate the Fohi lines into numbers. **Figure 2** shows how Bouvet opened this new window on the universe.

Figure 2. Linear correspondence between western numbers and the Fohi lines that Father Bouvet discovered and sent to Leibniz.



Note the asymmetrical complementarity between the two halves of the figure divided vertically between 3 and 4. All of the Fohi numbers under the trigrams reflect two chiral halves of a reflection as if projected in a mirror, and whereby every zero on the left is reflected as a one on the right, and vice versa. Every imperfection is reflected as its reciprocal image of perfection. Such a reflection represents also the balance of reciprocity and chirality between East and West that Leibniz discovered in Fohi’s trigrams, and this is also the key to enter into the performative domain of creative thinking.

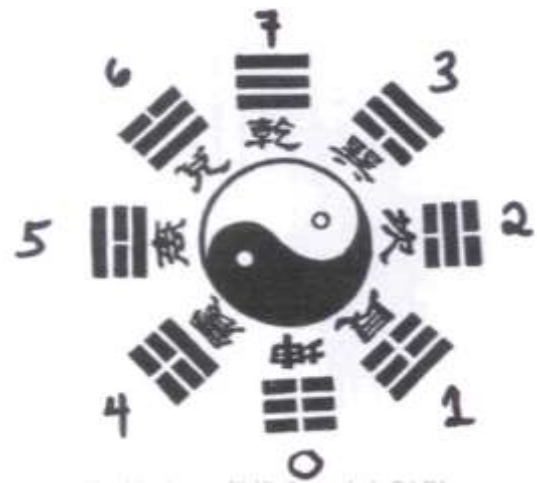
Take the *Eight Trigrams of Tai Chi* in **Figure 2**, and ask yourself: how do they work when you put them into a circular form? What sort of *Analysis Situs* is implied in that configuration? In order to answer that question, you first have to ask a few preliminary questions: What are these trigrams the metaphorical process of, and what is the ordering principle behind them? How can this metaphorical process be deciphered from the Leibniz discovery of Father Bouvet’s correlation between western numbers and the Fohi lines? What is the intention behind the periodical cycle implied in that correlation?

The display of **Figure 2** appears to have no significance other than a series of signs lined up from right to left on a straight line, that is, the equivalent series that Bouvet discovered as corresponding to our number series going from zero to seven. However, if you take this process to be the metaphor of the strategic connection between East and West, what significance can this have for world peace? In the East, the process of ordering is inversed and goes from right to left, that is, from 7 to 0. In the West, the process goes in the opposite direction, from 0 to 7. The series does not mean anything more than what it does, which is linking together East and West in harmony.

The epistemological point to establish with this process, however, is not to search for some mysterious hidden meaning. Nothing is hidden, here. There is no divination. Everything is out in the open. What you see, is what you get. But, you have to look with your mind, not only with your eyes. And, what you see is what the metaphorical process does. And, what the metaphorical process does is what it signifies, no more, no less, performatively by unraveling itself. However, the question is: what is being communicated by that process? The significance of the signs does not lie in their symbolic content, but in the form of action that they effectively produce, and, in the place they fill up in space, while producing those actions.

Again, it is the changing into a circular performative pattern in the variation of the action that counts, not the numbers. Apply the Leibniz correlations to the classical form of the *Tai Chi Octagon*. (**Figure 3**) Start the process from the top down (from the outside in) and move counterclockwise (from right to left); that is, from 111 (7), 011 (6), 101 (5), 001(4). Next, inverse the process by crossing over to the other side through the curved doubly-connected *Tai Chi* symbol, as if through a torus, and then, move clockwise by counting from 110 (3),010 (2), 100 (1), and 000 (0). There you have it: the Fohi notion of the mastery of mind over physical-space-time as the fulfilling intended motion of coming into being from the future. Thus, *Tai Chi* gives the human mind the power of mastery over the universe.

Figure 3. The eight original trigrams of Fohi's Octagon in the *Tai Chi* arrangement show the way to proceed. Look at those eight trigrams as if they were the shadows of the universal physical principle of a performative reciprocity. A careful study of the *Tai Chi* symbol itself will show that it contains the two opposite directions of left and right actions, as if it were a metaphor of a doubly-connected motion of space and time. The process is continuous, yet it goes through a change by inversion. The doubly-connected motion so expressed indicates that the change in physical space-time action is in the form of a toroidal action. Now you have everything you need to figure out how Fohi's galactic universe works.



If you apply the Leibnizian idea of *Analysis Situs* to the conceptual performance of a *Tai Chi* doubly-connected motion, then the intention of Fohi will become clear. *Tai Chi*, then, simply represents the form of a time reversal process progressing as if inside of a toroidal form by inversion, both forward and backward, from side to side, but always from the outside to the inside; that is, always from the top down. The process involves the same process of time reversal that Lyn has been discussing in terms of

musical composition. [Tai Chi](#) also describes a continuous and unending pathway from the future to the past, and from the past back to the future again, with a transient present that does not really exist, as such, but which is the mark of constant change coming from the next state of the future yet to be, like the universal motion of regeneration of the galaxy and the Cosmos itself. Compare this process of change by inversion to what Lyn emphasized, recently, with Bach and the *Preludes and Fugues*, when he said:

“And so therefore, where most people fail, is where most people become stupid, essentially on music. They think you play the notes! They don’t realize that you have two parts in the process, at least: You have a beginning, and then you have creativity, beyond. And what happens, where people fail, is they try to play these notes, as if there were no change! And what Bach complains about, was that most musicians were stupid! They would play the notes *through*, without ever taking account of the fact, that this successor element, in the performance, requires a change. Part of it is obvious. The key part, that makes the difference, is what is not obvious: the inversion!”

“In other words, you start with half a statement; the next thing you have to do, is you have to find out, where does that statement go, for you? Which Bach complains about! That the musicians don’t understand this! They try to play the notes through, as if you play the notes in order. You may play the notes in order, in one sense, but you convey the meaning of the notes in disorder! You invert the whole conception of the performance! And it’s this inversion process which defines.” (Lyndon LaRouche, *Morning Briefing for Wednesday July 25, 2012.*)

The same idea applies to Fohi, the same ironical motion of music. What Lyn is referring to is that “if you are not changing the future, you are not doing anything worth doing.” In the middle of the current economic breakdown crisis, the whole thing is to discover not only what the next step will be, but also who needs to make it, where, and why? If you continue to make believe that the past will repeat itself indefinitely, then, you have another thing coming.

In the case of Fohi, the most important point to remember is that the place of each of the trigrams has a definite future position with respect to all of the others, and that the system as a whole can only function from the standpoint of those relative positions from the future and not from the past. If any of those eight trigrams is situated in the wrong place, the whole system becomes dysfunctional and nothing will work. The key to the whole concept is for it to work, because the [Tai Chi](#) function must orbit and rotate like the universe as a whole. It must be based on the same lawful ordering. But, don’t forget that what you are dealing with, here, are giant steps. Thus, the [Tai Chi](#) Octagon is performative in the sense that it accomplishes mentally what it is also doing physically, at the same time. It is self-conscious of being self-generating. Note that this is also how chirality expresses itself in the same opposition of pulling and pushing functions, like in a catenary/tractrix function. That is what makes the [Tai Chi](#) exercise a living matter of mind.

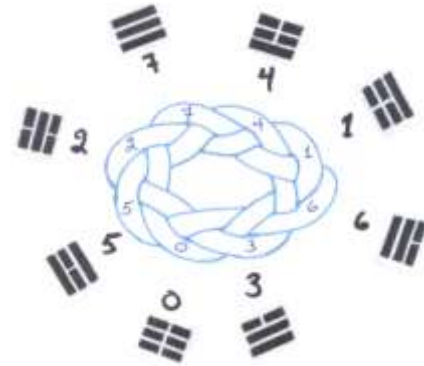
3. HOW THE INTENTION OF MIND IS TO KNOW THE FUTURE BY FORECASTING

Hexagrams represent the collection of a dynamic method of forecasting the future and more specifically the fate of human beings as social living species. With that intention in mind, the sixty four hexagrams represent sixty four different situations or combinations between the microcosm of the individual human mind in relationship with the macrocosm of society and of the universe. Each hexagram

represents the individual power of a monad in conflict with a specific universal physical principle of the universe and expresses its appropriate resolution in physical-space-time, in accordance with a pathway of Preestablished Harmony. The resolution of these mutations represents the coming into being of the intended future itself.

The irony of *I Ching*, however, is that Fohi knew, 4,964 years ago, that his epistemological model for creative change would last for all time. If this is hard to believe, then, it should not be hard to understand, because Fohi, like Leibniz, knew that as soon as mind could master change, it could forecast; because change was a principle that ordered reality in a predictable orientation of progress, was the only thing that could come from the future to cause change, and that process could never be changed. Once you really internalize that idea, you know how to forecast, because, as Lyn said, the matter of mind “is not what you think, but how you think,” and that gives you the direction to take, but without knowing what is coming down. Do it with the trigrams of **Figure 4**.

Figure 4. Following the process of this *Octagonal Trigram Torus*, the motion may proceed clockwise or counterclockwise from zero and return to zero as many times as you wish without any interruption. Remember that in this periodical form, the motion of the mind is identical to the motion of the body, but it is the mind that must lead the body and not the other way around. The reciprocals are vertically parallel to one another. The key question is: How does that affect the mind?



In other words, as long as there are minds in the universe to grasp this idea, the *I Ching* process of change can always continue to be replicated, because, as Heraclites put it, everything is subject to change, except change itself. It is the axiomatic nature of change which never changes. This is also what Fohi was able to forecast; that his system would have to be flexible enough to change without changing, and that was the way he was able to master the future. In that axiomatic sense of the future, as the cyclical nature of change proceeds in the periodicity of physical-space-time, the metaphorical process of the combinations of 1 and 0 express what exists and what does not yet exist.

Follow the hypothesis of Fohi. You can change the future by forecasting how the next position of a physical-space-time process must go through an internal inversion of its ordering, similar to the binary form of the 256 series, which must be in harmony with the human mind, and must express the universal characteristic of a doubly-connected manifold of reciprocity. The great cathedral of Florence was built with a similar principle in mind. It was built by inversion, that is, by Brunelleschi assuming the opposite functions of the catenary and the tractrix starting from the Lantern of the Duomo.

Take the example of the octaves of music whose intervals of action are all in the doubling power of two, such as 1, 2, 4, 8, 16, 32, 64, 256, etc., and put them into a circular form as if you were constructing the dome of a great church. This is how Brunelleschi started to build his dome from the top of the lantern down from that simple octagon. This progression of change became predictable and

finalized, when it was put in a doubly-connected circular form of the catenary/tractrix function as it is developed in the *Tai Chi* exercises; that is, in a form of progression which anticipates the position of where the next step is projected to take place. To demonstrate this, consider the following change in the motion of the classical *Tai Chi Octagon* of **Figure 5**, and count clockwise all of the intervals of action. Imagine the following concept of circular action applied to the Florentine Duomo.

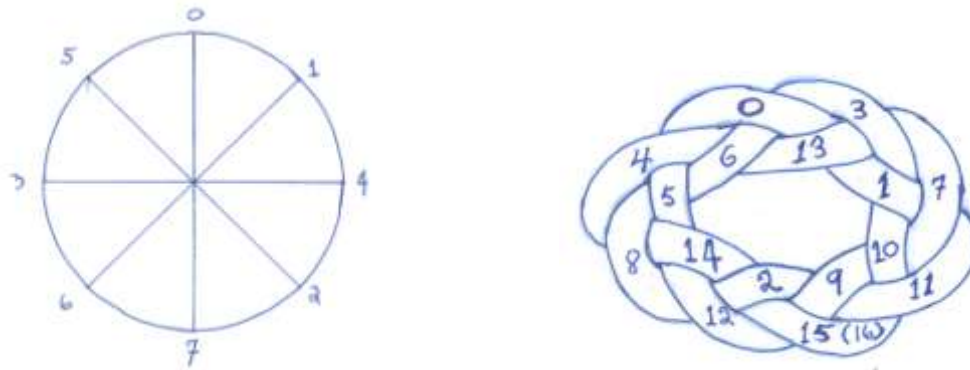


Figure 5. Transformation of the *Tai Chi Octagon* into a circle and a toroidal spiral action of the power of two. The two actions rotate clockwise and the P/T ratio of the torus is 3/8. Note that, in the case of the torus, the reciprocity is everywhere 15, while in the circle, the reciprocals are always 7.

This mental exercise is aimed at discovering how to forecast the next change of position to come. However, since positions change with the change in the ordering, you have to figure out what the new ordering of the change has to be. The point is not to know in advance where the next step will be located, but how you are going to get there. Similarly, the common denominator between East and West is not in the content of ideas, but in how they are produced.

What Fohi hypothesized was the ordering principle of reciprocity, and what Leibniz rediscovered was the fact that the series of the binary power of two was capable of generating such closed reciprocity by a complete and closed form of periodical cycles. My own surprise was to discover that the modular function knew how to go from one step to the next when generated into a circular form within a Torus Geometry, but did not know where it was going to land. In a sense, this is the closest I can get to working through a metaphorical process of the creative process of forecasting. Think of it as the next steps being planned from Earth to Moon and, then, from Moon to Mars. What is the step after that? The rover *Curiosity* has already begun to answer that question because it has set our minds in tune with the speed of light on a daily basis. We should not be thinking in any lesser way, because we are no longer limited to the slow speeds of ordinary sense perception. As Lyn put it: “We have brought the human mind to reign in Mars, when we shall organize man’s fate within accessible reaches within our Solar System.” (Lyndon LaRouche, [NEXT, BEYOND MARS](#), August 17, 2012.)

My surprising conclusion is that of all simple arithmetic series, the power of two is the only series whose intervals fill all of the positions of toroidal space. With this idea on mind, we now have the power to fill in the totality of space between Earth and Mars. If you consider 1 and 0 as the two elements of being and of coming into being in *Analysis Situs*, then, all of the counting numbers will fill the places of all of the empty spaces through all of the cycles, without leaving any empty places behind at the end of

the process. When you finish the process of this little game, all of the bricks will be in their right place, and your Dome between Earth and Mars will be as Brunelleschi had planned his in Florence. This little game will then be completely filled with harmonically ordered change in physical-space-time events which are everywhere reciprocals. The power of this little game, therefore, will reside in knowing how to progress to any future position within any system of growth. Such a system doesn't know where it is going to end up, but it knows how it is going to expand by a unity of action in the next moment. If you know what that unit of action is, then you know how to proceed. And, the secret lies in the difference between beginning to do something and how to follow it up into the future next step. For example: how do you discover the power of two inside of yourself? How do you discover ways to go to higher forms of power by yourself and from yourself? The whole point is to risk getting started without knowing where you are going to end up. As Lyn put it, the secret of discovering this lies in getting rid of popular opinion:

“Popular opinion has taken over, and popular opinion is stupidity. It comes in the form of ceasing to be concerned with the discovery of things which are just beyond your reach! Insights, which are just beyond your reach, and making them familiar, and usable. Mankind has got to, at this time, change mankind, or change the self-conception of mankind. That's what we have to do. But this, the shock of having to do this, will force us to recognize that responsibility.” (Lyndon LaRouche, *NEC Meeting*, Saturday, September 1, 2012.)

Thus, if you begin by adopting the rotational form of a Torus, as with the unique series of the musical system of octaves, you will be able to completely fill the physical-space-time process of harmonic change inside of yourself, and this will fill you completely with change. I know you don't believe me, but do it and see what happens. It is that Poloidal/Toroidal rotational action which will define the ordering of the steps you must make, not you looking for the notes to define rotational action. You can experiment with this, for example, by going round the torus of **Figure 5** with your cursor. You will require $2\frac{1}{2}$ cycles for the singly-connected circle, and $22\frac{1}{2}$ cycles for the doubly-connected torus.

Since this game of *Analysis Situs* is about filling empty places, follow this progression by leaving empty places behind in the amount corresponding to the preceding unit of action. The progression of proper placing should be as follows: 0, 1, _ 2, _ _ 3, _ _ _ 4, _ _ _ _ 5, _ _ _ _ _ 6, etc., up to the end. All of the underscores represent the reckoning of empty spaces that you leave behind as you move forward, and which will be filled later by numbers that will come later. You don't know when or where this will happen. The same self-fulfilling process will take place for any prime ratio torus applied to any of the octaves of 8, 16, 32, 64, 128, 256, 512, etc. You just need to determine the appropriate P/T ratio for each case, and then, project yourself into the future. However, by jumping the appropriate number of empty spaces where each number corresponding to a future will be reached later, you can go around the toroidal circumference as many times as needed to complete the series, and there will always be a unique empty place waiting for you, which you can fill by a greater number that you did not use before, or that you didn't know existed before. Such a forecasting function of the future represents the most elementary form of the power of mind because, as Leibniz put it, everything depends on the form of reciprocal periodicity which commands it. The question is always how the whole process comes back to you from the other end, that is, from a future reckoning.

As Leibniz put it in the concluding part of his paper on Fohi: “It is something quite considerable [to discover] that the powers of the same degree obtained by the extension of natural numbers into a

progressive series, whatever its degree may be, do not have cycles that are greater than the natural numbers themselves which are their roots.” (Gottfried Leibniz, [*Discours sur la théologie naturelle des Chinois*](#).) That is the significance and the measure of power that you are looking for in the future.

Now, ask yourself: why is this idea needed, for society today, and why did Leibniz feel compelled to devote so much time to this question, at the most crucial moment when the craziest speculative insanity was ravaging England and France with the Mississippi Bubble and the South Sea Bubble during the first decades of the 1700’s? Leibniz was challenging his own creative process, as Lyn did, when he gave the answer to the question of applying *The Power of the Intellect* to the current crisis situation in Washington, but from the vantage point of the world strategic situation. As he said:

“But the key thing is, that when you actually are creative, when you’re actually being creative, your target is not anything but *you*. *You* are the target, of your mission. You have to evoke from yourself, something you did not think was there as a capability. You have to find that thing, which has that quality, amid all this myriad of things that are inexplicable, and each day, you’re trying to create something you hadn’t dreamed, the day before.

“And that’s the way it works. It’s the way it works with me. It’s the way it works with everyone I know who’s successful.

“Once you try to kiss butt in any sense, once you try to be ‘appreciated’ in any sense, and hope that you’re being appreciated is going to make you more influential, you’re an idiot, and probably a risk to humanity.

“It’s your devotion to a mission, in which the power of that mission comes entirely from the discovery of what you would call intellectual capabilities within yourself. It’s to the extent that you are concerned, every day, to increase your creativity, inside yourself and expressed by you. It’s doing that, not doing the job you’re assigned, but going beyond that, to what you didn’t imagine the day before, or others didn’t imagine either. And that’s what leadership is.” (Lyndon LaRouche, *Briefing for Wednesday August 1, 2012*)

Then, imagine that what you are confronted with is the strategic situation of a new war, World War III, which can be triggered either from Iran or Syria, at any moment, between now and November 2012, by the crazy British faction of President Obama in the US and Bibi Netanyahu in Israel. In such a strategic situation, there is a principle of balance and reciprocity that must be assessed for action. However, when one approaches a time when there is a great danger of war, most people batten down the hatches and go into hiding and avoid confronting their fears, even though there is nowhere to hide. Then, the general social climate becomes dominated by a tug of war between two small factions of world historical leadership: an offensive side of propaganda favorable to war based on some fabricated injustice, and a defensive side, which is fighting to prevent the war. Both opposite sides are involved in a series of maneuverings and positioning of power. And the question is: how do you avoid the concatenation of reaction formation going from threats to counter-threats that lead to confrontation and finally to conflict? How do you deal with such a strategic situation from the standpoint of [*Analysis Situs*](#) ? *Each step of the way, you must find an effective reciprocal.* And to do that successfully, you must remember what General Carl von Clausewitz wrote about strategic situations:

“Now let us cast a glance at history—upon Frederick the Great's campaign of 1760, celebrated for its fine marches and maneuvers: a perfect masterpiece of Strategic skill as critics tell us. Is there really anything to drive us out of our wits with admiration in the King's first trying to turn Daun's right flank, then his left, then again his right, etc.? Are we to see profound wisdom in this? No, that we cannot, if we are to decide naturally and without affectation. What we rather admire above all is the sagacity of the King in this respect, that while pursuing a great object with very limited means, he undertook nothing beyond his powers, and JUST ENOUGH to gain his object. This sagacity of the General is visible not only in this campaign, but throughout all the three Wars of the Great King!” (General Carl von Clausewitz, *On War*, Volume I, Book III, Chapter I. Strategy.)

The situation is a matter of mind as in the case of Fohi's memory modular function of *Tai Chi*. In fact, Frederick the Great's underlying assumption was measured by the fact that he was secured in the knowledge of what his opponent was expected to do, or not do, at every step of the way. In the crucial steps leading to 1760, for example, Frederick the Great was confident of his mobility because he knew how Daun's system would be deployed in accordance with the commander's character flaws. We must make the same assumptions, today, and consider that the key to a victorious flank resides in considering the nature and timing of Obama's flaws. The central question, therefore, must be: How do you determine when the conditions are favorable for the enemy to collapse by mistakes of his own making. What you have to do to secure victory is to discover the means that will lead the enemy to that end at the right time and place. The secret of understanding any strategic situation of this nature is always a question of *appropriate placing in time*. And the secret of this is located in one's ability to cloak one's intention with the element of surprise. It is the surprise that always wins against the well prepared.

As was exemplified by the Prussian victory against the Austrians at Leuthen, on December 5, 1757, Frederick the Great created a feint with his cavalry on the right flank of the much larger Austrian army (red) led by Prince Charles of Lorraine. Meanwhile, Frederick marched his army (black) south to hit the left flank of the Austrians in a perpendicular move. The force of the Prussian attack was successful because Frederick knew what Charles was thinking, while he was able to hide his own intentions. The key is to know the mind of your enemy and to be able to forecast his actions. After three hours of exchange, Prince Charles was so shocked by Frederick's move that he could not hold back his outrage and just declared: “I can't believe it!”

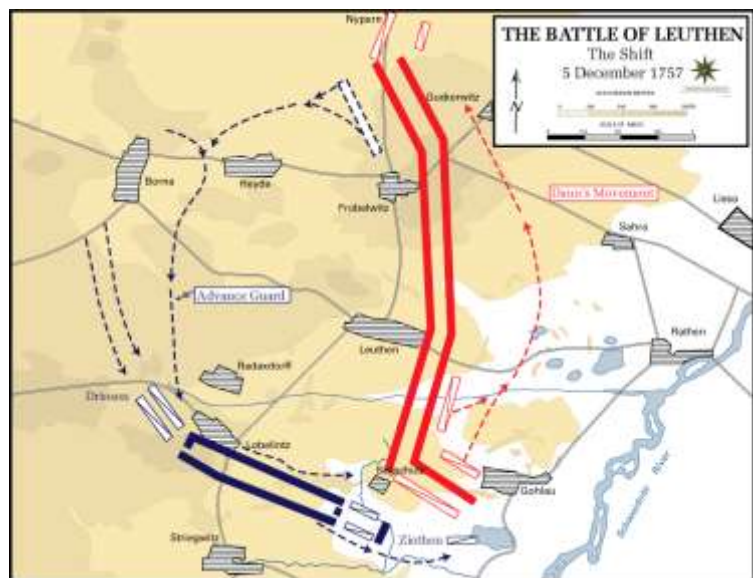


Figure 6. Battle of Leuthen, 5 December, 1757.

Now then, apply the same strategic thinking to Fohi's conception of the binary system with the *Natural Hexagram Order* below in **Figure 7**. What future are you forecasting when you increase Fohi's original *Tai Chi Octagon* by the power of two? The two halves of the circle reflect the *Tai Chi* principle of a changing action opposing 32 complementary forces in left and right motions for a total of 64 hexagrams of change, thus expressing the principle of chirality that is characteristic of the mental process of change in physical-space-time.

However, I am not recommending in any way to apply *Tai Chi* literally to military strategy, but to use Leibniz's method of reckoning by means of the principle of reciprocity. Discovering by way of reckoning is a very useful means of understanding how the human mind works without falling into the excesses of mathematics.

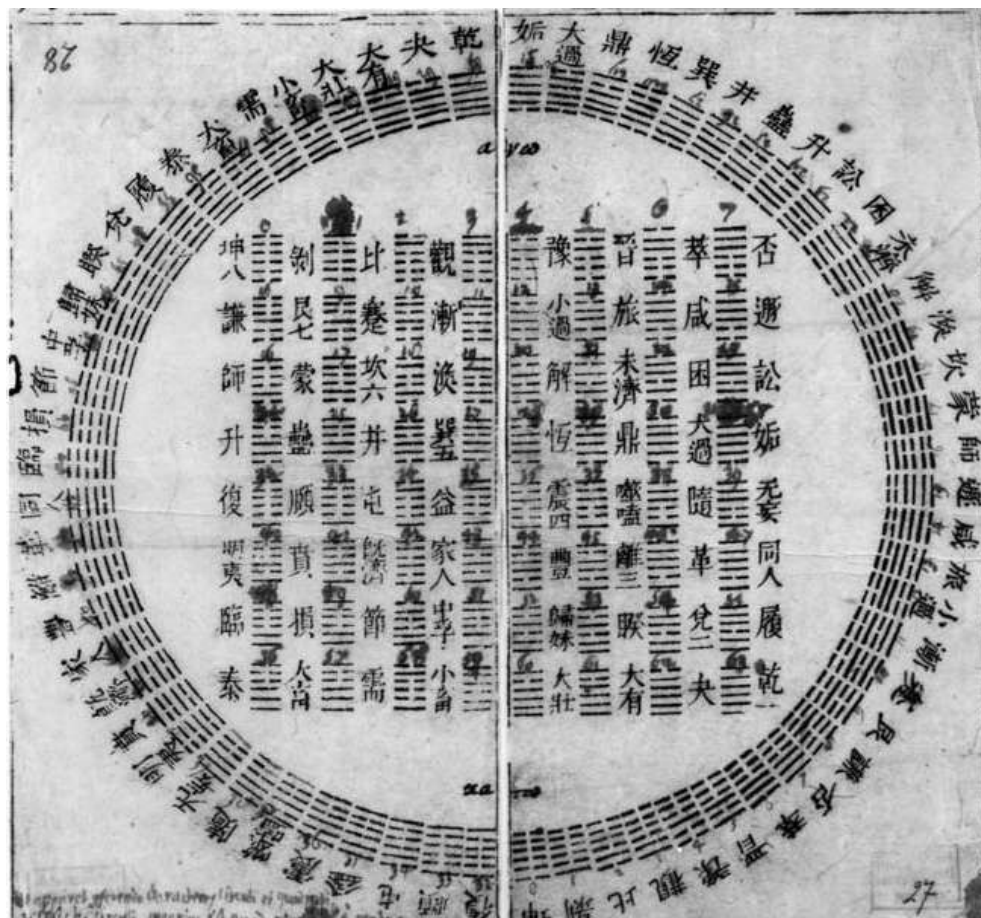


Figure 7. Circular and biquadratic copy of the original *Natural Hexagram Order* of the *I Ching* that Father J. Bouvet sent to Leibniz on November 4, 1701. (Leibniz Archive, Hannover) Leibniz added, by hand, the Arabic numbers counterclockwise from the bottom up the right half of the circle, from 0 to 31; then, proceeded back down through the diameter to continue marking the numbers, clockwise, on the left half of the circle, from 32 up to 63 at the top. The reason for this ordering of the hexagrams is to have the two opposite ends of any positions of the diameters come to the reciprocal total of 63. The principle of reciprocity is the reason behind the harmonic ordering of *I Ching* and *Tai Chi*.

For example, in 1689, Peter the Great of Russia and the Chinese Emperor Kangxi, signed the Treaty of Nerchinsk regulated borders and exchanges between Russia and China. This development outlook represented the first historical treaty agreement between Russia and China. Ten years later Leibniz was attempting to get Peter the Great to open a Landbridge between Russia and China and establish an Academy of Sciences that would act as the key emissary between Europe and Asia and secure the common aims of mankind. However, Leibniz was not able to replicate the political alliance with Peter as he had successfully done with Princess Sophia, Electress of Hanover. Leibniz did not get a chance to sit down with Peter the Great until 1711, when they both met in Torgau to discuss plans for creating in Russia an Academy and a cultural Landbridge between East and West. Leibniz's plan for the unification of East and West was never realized because the Venetian-Anglo-Dutch faction undermined the project with warfare at every step of the way.

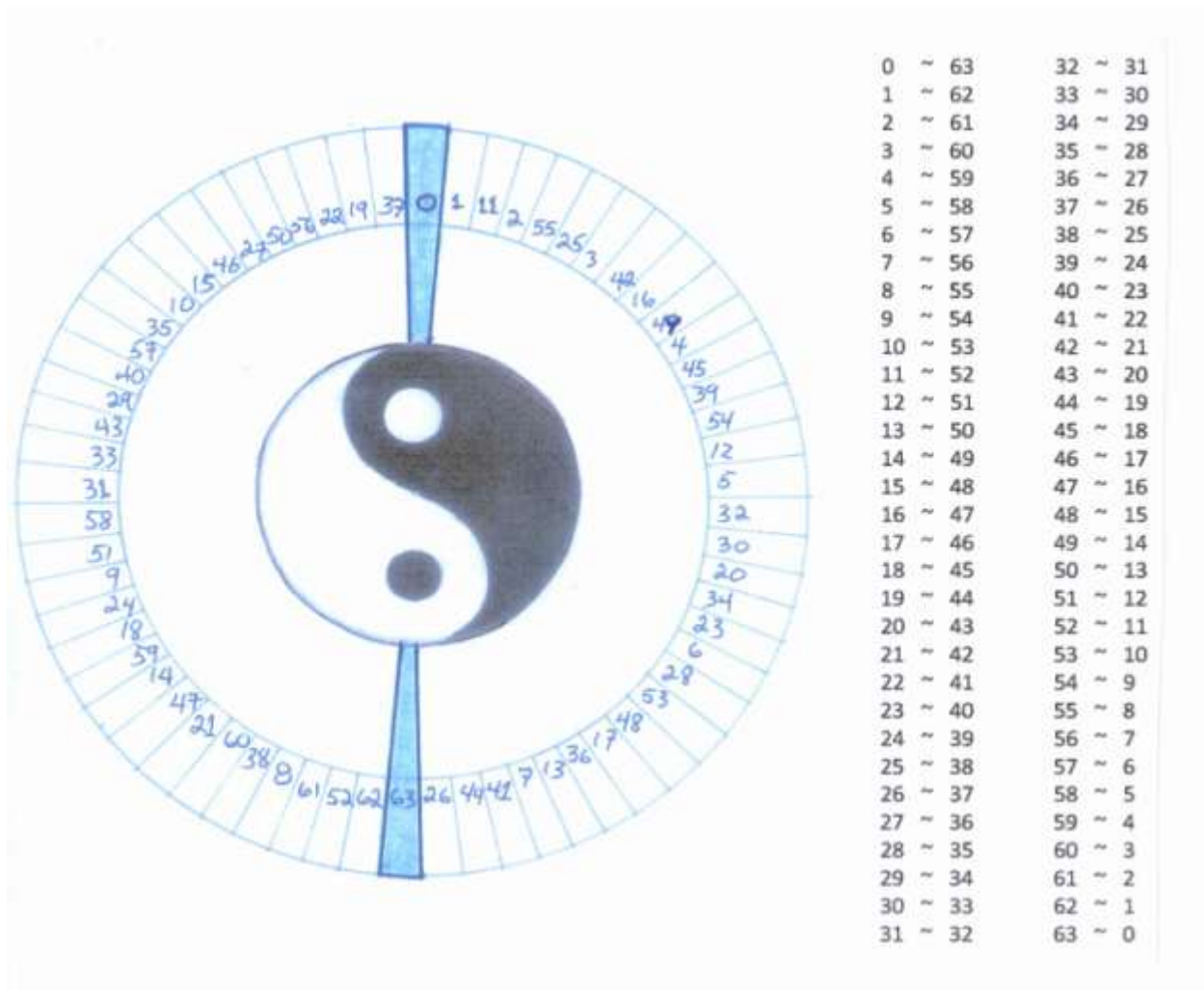


Figure 8. The *Analysis Situs* form of 64 intervals or 32 reciprocals following the Fohi method of future-place-forecasting. Look for the place where the whole system goes into an inversion at 48 ~ 15 and 16 ~ 47 as if through the axiomatic change of a voice register shift, like going through an arithmetic-geometric mean asteroid belt location of our solar system.

If you begin with the specific end of Fohi's principle of reciprocity in mind, that is beginning with *Hexagram 0 ~ 63*, and ending with the inverse, *Hexagram 63 ~ 0*, which calls for starting from the end, as Fohi said, from "*the differentiation of things, so that each finds its place,*" then, all of the intervals of action will find their appropriate, yet still to be assigned, places inside of the indicated circular function. This is where the surprise of the future, as something that is forecasted, comes in!

All of the numbers are reciprocals because they all leave behind them as many empty spaces as correspond to their values, and they all leave empty spaces behind because they are all reciprocals. So, this is how the numbers know how to get there next, at every moment of this sort of progressive reciprocity. The idea is that a unique phenomenon of change in physical-space-time which takes place when you are able to fill all of the places that must be accounted for in a strategic situation, as Leibniz had assigned by means of his method of [Analysis Situs](#). As Leibniz put it, that's how the strategic situation progresses.

'Following the games that depend only on numbers, we have the games which further involve the situation, such as backgammon, checkers, and above all chess. The game called Solitaire also pleased me enough. However, I am considering it in a reverse manner, that is to say, instead of undoing a composition of pieces, according to the rule of this game, which calls for jumping into an empty place, and taking away the piece on which we jump, I thought it would be more beautiful if we reestablished what had been undone, by filling in a hole on which we jump; and by that means, we could propose to form such and such a given figure, if it were doable, as it surely could be done, since it was possible for it to be undone. But, some will say: 'what is the purpose!' I would respond, to perfect the art of invention; because we should have methods for solving everything that reason can put before us.' (Gottfried Leibniz, *Letter VIII to M. de Montfort*, in Leibniz, *Opera Philosophica*.)

If you don't yet get the whole picture with what Leibniz has just indicated with respect to the principle of change, then apply my version of the [Tai Chi](#) diameter-dial of **Figure 8** to the Fohi *Natural Hexagram Order* of **Figure 7**, and you will see how the anticipation of the future works from the same principle of reciprocity. The two ends of the rotating [Tai Chi](#) diameter-dial connect with two opposite numbers at each end of the circle, a minimum and a maximum, whose total must always come to $0 \sim 63$ and whose reciprocal dual $31 \sim 32$ is at right angle.

The ordering process of **Figure 8** establishes that all values diametrically opposed across the circle are reciprocals of 63. Rotate the [Tai Chi](#) dial anywhere around the circle and you will find all of those reciprocals and reciprocals of reciprocals are all at right angle to one another as if you were dealing with an electromagnetic process of positive and negative polarities. Better still: you will easily discover the pattern of their apparent disorder if you rotate the [Tai Chi](#) dial from 0 to 63 in the already indicated manner of leaving empty spaces behind. At the end of the process of rotation clockwise, when $0 \sim 63$ gets inverted into $63 \sim 0$, you will have made 32 complete cycles, because there are only 32 reciprocals.

Thus, whenever your mission is mobilizing you with the task of improving someone else's mind, obey that fire in the belly, because, despite all contradictory appearances, it will create a balance of moral reciprocity between your own soul and the souls of others. But, since the key to improving someone is to get him to confront his fears, this [I Ching](#) objective can be achieved by demonstrating that such a future

intention can only be changed by closing up all of the intervals that need to be filled. As in the *Ma'at* principle of ancient Egypt, in which the deeds of a human soul were judged after death in the balance of proportionality, so does the *I Ching* principle of reciprocity for the living mind. The *Ma'at* principle and the *I Ching* principle come from the same source of inspiration. The only difference is that one is for the dead and the other for the living.

CONCLUSION

No animal is capable of discovering or applying such a principle which is for the benefit of the creative mind alone. Animal behavior is dog eats dog. Human behavior is man changes man. That is the first thing Fohi considered when he targeted himself for this mission. And, that became the first principle that he devoted himself to stealing from heaven to light up his passion for changing mankind. According to Bouvet, the next generations of Chinese after Fohi almost immediately lost that fire, because they had lost the warmth of its natural morality. However, all was not lost for the few who dared to devote themselves to change. For instance, if you look at the inner workings of Bach's *Preludes and Fugues* series, in the manner that Lyn recommended, you will not be far from being able to light up again the unsung voice of Fohi's principle of reciprocity for the happy few who are willing to hear it.

In substance, what Fohi is telling us is that it is the pattern of inversion which generates the ideas of the future. If you miss how this reciprocity pattern is constructed, you have missed the whole idea, because you will have missed how the metaphorical system of the universe works as a whole. Above all, don't make the mistake of asking: what does that all mean? The important thing about ideas is not what they mean, but how they are generated and how they work. As Lyn put it: "It's not what you think; it's how you think." This pattern of reciprocity tells you how some of the greatest strategic ideas in history have been generated.

In other words, apply successive processes of transformation perfecting the human mind in the manner that Fohi developed it in the sixty-four hexagrams of *I Ching*, and order them in a way that is balanced by your own generating process, but always from the top down. This means that your progress will have to start from the end, because it is in the end that you find the beginning of all things. This is what Fohi identified with the reciprocity of *Creativity (63-0)*.

If you do that, you will find that the key does not lie in any one of the particular hexagrams, or in their totality; it lies in the progress of their doubly-connected ordering process of change. If the ordering process of change corresponds to the state of mind of *Tai Chi*, as I have just indicated, then, you will also find that the end must always be where you have to start from; that is from, the future. But also, remember that reciprocity of opposites is the only way of knowing in advance what is happening at the other end of the process, by considering the unity of the minimum and the maximum. Cusa explained the conjunction of the opposites with the metaphor of the beryl lens:

"Therefore, if you wish to see Eternal Wisdom, i.e. the Cognitive Beginning, then with [your intellectual eyeglasses of] beryl affixed, look at [the Beginning] through what is maximally and minimally cognizable. And by means of a symbolism (for example, of angles) search out (1) acute, formal, simple, and penetrative cognitive natures (comparable to acute angles) and (2) other more obtuse natures and, lastly (3) the most obtuse natures (comparable to obtuse angles).

4. APPENDIX: THE SEVEN ANCIENT PLANETS AND THE DAYS OF THE WEEK

(Updated from a [Pedagogical Report on Bailly's Ancient Astronomy](#))

Entirely in the spirit of Fohi's *Tai Chi Trigrams* and his *I Ching Hexagrams*, and at approximately the same time, an ancient Astronaut, whose name I have identified with the mythological figure of Atlas, also left us the traces of the oldest Solar System calendar in the world, which is still reflected today in the shadows of the astronomical days of our weekly calendar. Although the calendar is limited in terms of scientific observation, it has the advantage of reflecting the human condition of being based entirely on what the cognitive mind can accomplish, given a limited sense perception apparatus, from the vantage point of the galaxy.

According to Jean Sylvain Bailly, the original discoveries of Ancient Astronomy have all been derived from the same individual whose contributions represent *a unique and common heritage of mankind*. Today, in the spirit of the Erice Conference of August 20-23, 1983, at the Italian Ettore Majorana Center for Scientific Culture, it would be appropriate to link this ancient discovery with the terms proffered by Dr. Edward Teller, which are the *"Common Aims of Mankind."*

The epistemological proof of this lies in a discovery which demonstrates that the power of mind of this most ancient discoverer of Ancient Astronomy relates to the universe as a whole, and from the top down. As in the case of Fohi, this discovery was forgotten by most of mankind, and for the same period of time, even though billions of human beings who have lived on this earth, since that time, had the shadows of that discovery of principle stand out like the noses protruding on their faces during all of their living days.

After rediscovering this very unique and curious man-made astronomical calendar, which had been in use, simultaneously, in the ancient civilizations of Egypt, India, and China, Bailly realized that its discovery not only established conclusively that the Astronauts, or the Ancient People of the Seas, were the oldest civilization known to man, but also that their ancient knowledge had been transmitted to very different peoples who were unable to transmit down to us the nature of its origin. The truth of this little known anomaly of ancient history had established that the ordering of the 7 ancient planets was in concordance with the ordering of the 7 days of the week.

What is so special about this historical anomaly is that its very existence serves to prove the correctness of Bailly's *method of discovery by epistemological hypothesis*. In point of fact, it is this ordering itself which provides the clue to the uniqueness of the required proof, and in a most convincing way. Indeed, the very existence of this ordering of the seven ancient planets with the ordering of the days of the week, shows that it could not have been discovered in different places, at different times, and by different peoples, simply because their arbitrary ordering and their choice of names for that same ordering is too much of a coincidence. However, let's examine how Bailly described this curious and unique historical singularity:

"It is perhaps the most singular proof of the antiquity of Astronomy, and of the existence of this people, more ancient than the others. These planets, which presided over the days of the week, were organized in an order which is still in existence today. First there is the Sun (Sunday-Dimanche), the Moon (Monday-Lundi), Mars (Mardi-Tuesday), Mercury (Mercredi-Wednesday),

Jupiter (Jeudi-Thursday), Venus (Vendredi-Friday), and Saturn (Saturday-Samedi). The same is to be found in documents of ancient Egypt, ancient India, and ancient China. However, this ordering is not based on distance, size, or luminosity of the planets. This is an ordering which appears to be arbitrary, or else it is based on reasons that we know nothing of.” (Jean Sylvain Bailly, [*Histoire de l’Astronomie Ancienne*](#), [First Edition 1804], Last Edition Burillier, Vannes, 1997, p. 74)

Although Bailly acknowledged that he did not know what the ordering was, he probably did not push the investigation further, because he might have been happy enough with discovering the epistemological fact that such a “missing reason” was a sufficient ground to prove the existence of what he was looking for. He paid attention to what was not there, because he considered that what was missing was the most important thing to discover. However, a closer scrutiny reveals that there does exist an ordering to the seven planets presiding over the days of the week, but, it is not self-evident. It is, as Riemann would say, doubly-connected. But, before revealing the nature of this doubly-connected ordering, I must first make the following observations.

The first striking thing about this correlation resides in the fact that the same ordering of the planets, as applied to the weekdays, is identical in three of the most ancient Asiatic civilizations. Bailly pointed out that the only difference between them was that the ancient Egyptians started the week on Saturday, the ancient Hindus started on Friday, and the Europeans start the week on Sunday. For Bailly, this is remarkable evidence pointing to the existence of a more ancient people, a common ancestor to the three civilizations, who had made extensive discoveries in Astronomy before 4,000 BC. Bailly wrote:

“One can say that it is impossible that chance so ordained that first these three nations would have separately come up with the same idea of giving to the weekdays the names of the planets, and secondly, that they would chose this precise arrangement, unique among so many others. Chance does not make such coincidences. A few scientists would like to find, in this, a proof that there existed a communication between the Chinese and the Egyptians: as for us, we are persuaded that no such communication existed, and we see, in this, a demonstration of the existence of that ancient destroyed people, who has passed on its knowledge to their successors by means of some institutions. These institutions are found in populations which were living at great distances from one another on this globe, and these force us to conclude that they had the same origin.” (Jean Sylvain Bailly, [*Histoire de l’Astronomie Ancienne*](#) , p. 38)

The fact that the first written records of Ancient Astronomy emerged in China, Egypt, and India, around 3,000 BC, shows that all three civilizations were informed of this “*precise arrangement*” of the planets at approximately the same time. (See my 2009 report on Bailly’s Ancient Astronomy in [BAILLY’S METHOD OF DISCOVERY BY EPISTEMOLOGICAL HYPOTHESIS](#), p. 16) The point he made was that only Astronauts could have accomplished such a feat by sailing around the world. Also, the fact that the proper names of the planets, which probably all relate to the heroes of Ancient Astronauts, indicates that this “*precise arrangement*” must have been discovered and decided upon at a much earlier time. No written records attest to such a communication among those three nations, nor is there any account of how this “*precise arrangement*” was made by any of these three peoples; only that the knowledge of such a correspondence between the planets and the days of the week was conveyed to them, at approximately the same time, and was made use of by these people, surprisingly, without

records indicating they had any understanding of the principle that underlied their ordering. Thus, like a footprint that had disappeared without leaving a trace, the names of those planets came down to us from the dawn of ancient time to remind us that the negative memory of an ancient edifice that had been erased by the very people who had inherited it.

What is the cause of such a strange anomaly? For a Platonic investigator, this very disappearance is a very big clue, because its lack of reason cries out through the millennia. It was precisely this lack of reason which had provoked Bailly to hypothesize that there necessarily existed an ancient people, a common ancestor, that preceded these three civilizations, and which had made extensive astronomical discoveries, prior to 4,000 BC, and maybe as early as 9,000 or 10,000 BC. But was that enough to establish that a discovery of principle had been made by an unknown Astronautor of ancient times? The truth of the matter is that this *“precise arrangement”* had to be based on centuries of observation by several generations of sea-faring astronomers, if the perceived cycles of the seven planets had to become so recorded into the man-made cycle of the calendar week. This periodical ordering must have ultimately provided Astronautors with the first Solar System calendar of mankind. As I will show, such an ordering implies, that their inventor, probably Atlas, had made the difference between the motion of the fixed stars and the motions of the seven planets, then had calculated the periods of those seven “wandering” bodies in the heavens, and finally, after studying them, year in and year out, he began to discover an ordering in the heavens that defined the cycles of life on Earth. How can we know with certainty that this was the case?

From these few shadows of ancient times, it can be inferred that the use of number 7, in the Ancient astronomy of Astronautors, did not originate with the cycles of the Moon, as some people may have mistakenly suggested. To the contrary, what must be discovered is that this arrangement of the 7 planets has no other origin, and no other significance, but to represent a direct epistemological reference to the period of time during which ancient observations of the universe as a whole were made. In other words, this *Ancient cycle* is a man-made cycle! Two steps will be required to demonstrate this hypothesis: one is to determine a reasonable ordering of the 7 planets according to their cycles, and two, is to determine how the observations of those planets are coherent with today’s ordering of the 7 days of the week.

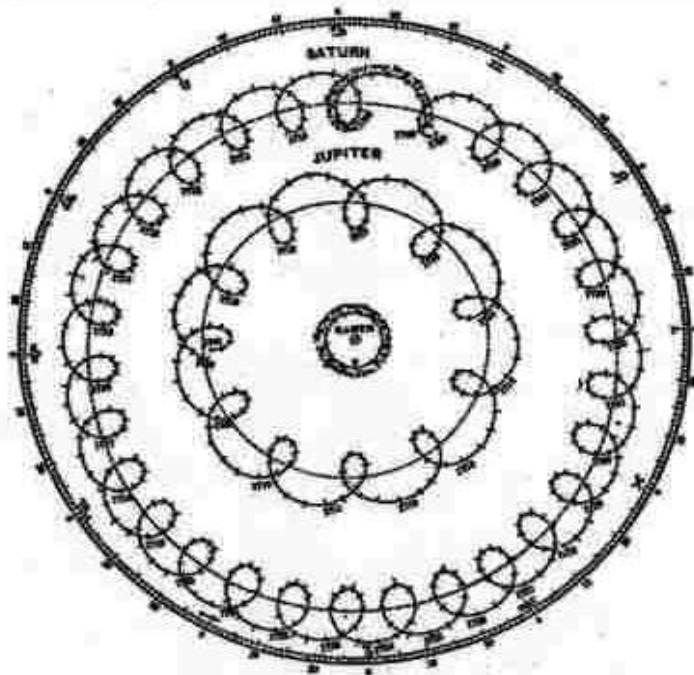


Figure 10. Orbits of Mars, Jupiter, and Saturn established by Francois Arago.

Here is how Bailly understood these two steps:

“The true inventor of this science is he who, in discovering the first truth, has established the basis for our astronomical knowledge. Is that inventor unique? Does this science, equally ancient for different peoples, have several inventors? The issue could be resolved if we could rely on traditions; each nation names its guides: Uranus and Atlas for Atlantis; Fohi for China; Thoth or Mercury for Egypt; Zoroaster and Belus for Persia, and Babylon. This may be enough for those who are only looking for names, and who, following the writings of the national tradition, are willing to take the word of vanity. But the science cultivated by the Indians, the Chinese, the Chaldeans, and the Egyptians, may not be their own original work. Often the knowledge has been communicated from the outside, the scepter of the sciences passing from one people to another. Without any in depth knowledge of the history of sciences, one can see that their light was born in the Orient, as that of the Sun, and during a very slow evolution, seems to be traveling, like him, around the world.” (Bailly, [*Histoire de l’Astronomie Ancienne*](#), p. 28.)

Tom Paine, who had the opportunity to compare notes with Bailly when he was in France, showed that the Saxon and Danish languages had originally named the days of the week somewhat differently. Other languages have similarly lost the memory of the planets ordering, and have replaced them by numbers, like the Ukrainians, Russians, and the modern Chinese have done. It should be noted that the Atlas ordering is the same arrangement that Ptolemy borrowed from him, via Hipparchus, several thousand years later, but without understanding its principle, and by stupidly assigning to their succession, an ordering of distances from the earth, which turned the whole system into an obvious absurdity. I should add that our *India EIR* editor, Ramtanu Maitra, confirmed for me that the days of the week for the Hindus correspond to the seven planets of ancient Astronomy since time immemorial. They are established according to the same ordering principle as in the French language.

- 1- Monday is Sombar, the day of the Moon. (Lundi)
- 2- Tuesday is Mangalbar, the day of Mars. (Mardi)
- 3- Wednesday is Budhbar, the day of Mercury. (Mercredi)
- 4- Thursday is Brihaspatibar, the day of Jupiter. (Jeudi)
- 5- Friday is Shukrabar, the day of Venus. (Vendredi)
- 6- Saturday is Shanibar, the day of Saturn. (Samedi)
- 7- Sunday is Ravibar, the day of the Sun. (Dimanche)

First, establish this ordered progression of the planets with the order of work days with a rest day at the end. Second, establish the ordering of the planets, according to the number of days required for their complete yearly work cycles, from the shortest to the longest. Those two series obviously do not match at first glance. Then, why are they related?

Ordering of the planets and the days of the week.

- | | |
|------------|-----------|
| 1. Moon | Monday |
| 2. Mars | Tuesday |
| 3. Mercury | Wednesday |
| 4. Jupiter | Thursday |
| 5. Venus | Friday |
| 6. Saturn | Saturday |
| 7. Sun | Sunday |

Ordering of the daily cycles of the seven planets.

- | | | |
|--------------|----------|-------------|
| 1. Monday | Moon: | 28 days. |
| 2. Wednesday | Mercury: | 88 days. |
| 3. Friday | Venus: | 225 days. |
| 4. Sunday | Sun: | 365 days. |
| 5. Tuesday | Mars: | 687 days. |
| 6. Thursday | Jupiter: | 4385 days. |
| 7. Saturday | Saturn: | 10752 days. |

Now that we have made the days of the week match the ordering cycles of the planets, how can this arrangement relate to our weekly calendar? How do they relate to a conception as opposed to a perception? At a glance, the above ordering is without any apparent relationship to our weekdays. Indeed, there is not a single one on one correspondence. Ha-ha! But then, who said there had to be a one on one correspondence? What if there was a 4 to 7 correspondence? Let's take a look in the intervals between them. Like in the case of musical composition, the measure that correlates them is located in their intervals. Indeed, this is where the anomaly is located. How many days would you need to place between each planet in order to establish their proportionality with the days of the week? If you place intervals of four days between the observations of every two planets, the ordering of their time cycles will become perfectly ordered with the weekdays.

Observe:

- | | | |
|--------------|----------|-------------|
| 1. Monday | Moon: | 28 days. |
| 2. Wednesday | Mercury: | 88 days. |
| 3. Friday | Venus: | 225 days. |
| 4. Sunday | Sun: | 365 days. |
| 5. Tuesday | Mars: | 687 days. |
| 6. Thursday | Jupiter: | 4385 days. |
| 7. Saturday | Saturn: | 10752 days. |

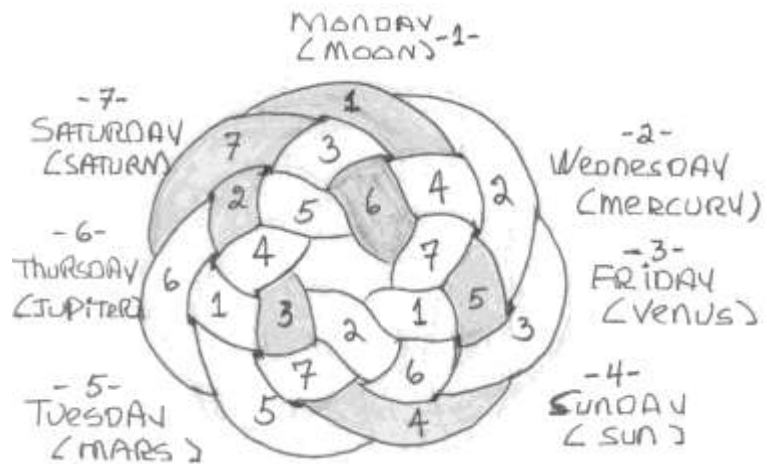


Figure 11. The 7 planets are each separated by 4 units of action in congruence with the ordering of the 7 days of the week. While each weekday is located clockwise, after one Poloidal circumference, as from (1) Monday to (5) Tuesday, to (2) Wednesday, etc., each planet is also located clockwise after one complete Toroidal circumference, or two poloidal waves, as from (1) Moon to (2) Mercury, to (3) Venus, etc.

The geometrical reason lies in the 4/7 prime ratio of the two Poloidal and Toroidal motions which are doubly-connected in a manner such that every Poloidal cycle is 4 for the days, and every Toroidal cycle is 7 for the planets. This constant double-interval between the planets and the days may have originally represented a time table for computing the results of each of the seven planets during a four day

period of observation. The reason for this choice is that only 4 intervals can make the doubly-connected system work, and no other ratio.

However, set aside the weekly arrangement for a minute, and investigate the mind of this ancient Astronaut. Ask yourself: why would Atlas, if that was the name of this Astronaut, choose to take that ordering and no other? What was his intention? The intention seems to be to apprehend the reality that everything inside of the Solar System changes while these cycles of nature remain the same. If there had been more visible planets, for instance, as we observe today through our sense perception extensions, the arrangement of the weekdays would have been modified accordingly, but their ordering connections would have been the same.

However, the reason this amazing connection does work has nothing to do with numbers. The reason it works is because the universal noetic character of this ordering pertains to an originating process which conciliates the reciprocity of opposites in repeated periodical cycles as it is expressed in the [*I Ching*](#) of Fohi. That originating process is characterized by the existence of a doubly-connected memory function of mind in the universe as a whole, and that is not subject to change either. That is what causes change. What does change, however, and which you can also command from the vantage point of this memory function, is what comes from the future to change the past, because whatever comes from the future will always change in a similar doubly-connected motion. This is why the intended process of discovery of the ordering of the weekdays is the same as the process underlying [*I Ching*](#): it represents the process of how change takes place in the universe, because change is the intention of the Creator. As Cusa developed in [*The Beryl*](#): “Now things-that-are-made-voluntarily exist insofar as they are conformed to the [creating] will, and so their form is the intention of their commander. Now, an intention is a likeness to the intender – a likeness which is communicable to, and receivable by, another.” (Nicholas of Cusa, *Op. Cit.*, p. 809.)

The beauty of this is that the very first people who made this calendar did not think of themselves as Earthlings, in particular, but as galactic thinking people. They took their knowledge from the heavens as a totality. The epistemological significance of this is tremendous, because this weekday calendar is not an Earth Calendar, as such, but a Solar System calendar, which means that those children of the Sun were not mere Earthlings, but children of the galaxy. Their thinking was determined by the large and from above, as opposed to by the small and from below.

Now that we have come full circle, Atlas, Fohi, and Leibniz would probably agree that modular functions are unforgettable shadows of sufficient reason which can be applied to any period of human history by any human being and with such force that its shadows of their memory can be recalled, at any moment, as exemplary forms of *cognitive discovery* at a distance, and be communicated to future generations from the same distance, or greater ones, at the speed of mind. Like the landing of *Curiosity* on Mars, 154 million miles away, those reciprocals are means to think at a distance, and act creatively at a distance, without having to be there physically. But your mind is always there. This is the first true view of how mankind must now think in the future. Man may not always be able to physically be where he wishes to be, but he can act at a distance with such memory extensions as a matter of mind. It is in that sense that Atlas and Fohi made use of the most simple, natural, and least action ways to impact the cognitive powers of mankind, for all times to come. It is by laying claim to this unique space-time metaphorical concordance between the works of the heavenly bodies and the works of the creative human

imagination on earth, that man can extend his immortality to future generations. Bailly recalled the clear significance of this intention when he wrote:

“Thus, human beings carried by time and renewed by time, when they see the works of nature perish as they themselves go, while the earth is unshakeable, and is always alive, they have conceived of locating in its dimensions, the invariable type of measures they wanted to make eternal. A human being, which only lives a moment, has the ambition of extending his life through memory, and by making his institutions eternal; he wishes to extend his usefulness after his death: this being is replaced by others, who have the same needs, and the same desires. The module of measured pathways has been engraved upon the foundations of a common home, in order to instruct the hosts of all of the centuries to come.” (Jean Sylvain Bailly, [*Histoire de l’Astronomie Moderne depuis la fondation de l’Ecole d’Alexandrie*](#), Tome I, Chez de Bure, Paris, 1785, p.157.)

The same passionate idea was also expressed by Ibn Sina in this short poem:

<p>زحل اوج تا سياه گل قهر از حل راگي تي مشكلات همه كدم ديل و مگر هر زق يد دستم پيرون اجل پند مگر شدگ شاده پندهر</p>	<p>“Up from Earth’s Centre through the Seventh Gate, I rose, and on the Throne of Saturn sate, And many Knots unraveled by the Road, But not the Master-Knot of Human Fate.” Ibn Sina</p>
--	--

***THE LEIBNIZ RECKONING PROCESS OF BINARY
 ARITHMETIC WAVES FROM 0 TO 256**

000000 = 0			
000001 = 1	010001 = 17	100001 = 33	110001 = 49
000010 = 2	010010 = 18	100010 = 34	110010 = 50
000011 = 3	010011 = 19	100011 = 35	110011 = 51
000100 = 4	010100 = 20	100100 = 36	110100 = 52
000101 = 5	010101 = 21	100101 = 37	110101 = 53
000110 = 6	010110 = 22	100110 = 38	110110 = 54
000111 = 7	010111 = 23	100111 = 39	110111 = 55
001000 = 8	011000 = 24	101000 = 40	111000 = 56
001001 = 9	011001 = 25	101001 = 41	111001 = 57
001010 = 10	011010 = 26	101010 = 42	111010 = 58
001011 = 11	011011 = 27	101011 = 43	111011 = 59
001100 = 12	011100 = 28	101100 = 44	111100 = 60
001101 = 13	011101 = 29	101101 = 45	111101 = 61
001110 = 14	011110 = 30	101110 = 46	111110 = 62
001111 = 15	011111 = 31	101111 = 47	111111 = 63
010000 = 16	100000 = 32	110000 = 48	100000 = 64

1000001 = 65	1010001 = 81	1100001 = 97	1110001 = 113
1000010 = 66	1010010 = 82	1100010 = 98	1110010 = 114
1000011 = 67	1010011 = 83	1100011 = 99	1110011 = 115
1000100 = 68	1010100 = 84	1100100 = 100	1110100 = 116
1000101 = 69	1010101 = 85	1100101 = 101	1110101 = 117
1000110 = 70	1010110 = 86	1100110 = 102	1110110 = 118
1000111 = 71	1010111 = 87	1100111 = 103	1110111 = 119
1001000 = 72	1011000 = 88	1101000 = 104	1111000 = 120
1001001 = 73	1011001 = 89	1101001 = 105	1111001 = 121
1001010 = 74	1011010 = 90	1101010 = 106	1111010 = 122
1001011 = 75	1011011 = 91	1101011 = 107	1111011 = 123
1001100 = 76	1011100 = 92	1101100 = 108	1111100 = 124
1001101 = 77	1011101 = 93	1101101 = 109	1111101 = 125
1001110 = 78	1011110 = 94	1101110 = 110	1111110 = 126
1001111 = 79	1011111 = 95	1101111 = 111	1111111 = 127
1010000 = 80	1100000 = 96	1110000 = 112	10000000 = 128

10000001 = 129	10010001 = 145	10100001 = 161	10110001 = 177
10000010 = 130	10010010 = 146	10100010 = 162	10110010 = 178
10000011 = 131	10010011 = 147	10100011 = 163	10110011 = 179
10000100 = 132	10010100 = 148	10100100 = 164	10110100 = 180
10000101 = 133	10010101 = 149	10100101 = 165	10110101 = 181
10000110 = 134	10010110 = 150	10100110 = 166	10110110 = 182
10000111 = 135	10010111 = 151	10100111 = 167	10110111 = 183
10001000 = 136	10011000 = 152	10101000 = 168	10111000 = 184
10001001 = 137	10011001 = 153	10101001 = 169	10111001 = 185
10001010 = 138	10011010 = 154	10101010 = 170	10111010 = 186
10001011 = 139	10011011 = 155	10101011 = 171	10111011 = 187
10001100 = 140	10011100 = 156	10101100 = 172	10111100 = 188
10001101 = 141	10011101 = 157	10101101 = 173	10111101 = 189
10001110 = 142	10011110 = 158	10101110 = 174	10111110 = 190
10001111 = 143	10011111 = 159	10101111 = 175	10111111 = 191
10010000 = 144	10100000 = 160	10110000 = 176	11000000 = 192

11000001 = 193	11010001 = 209	11100001 = 225	11110001 = 241
11000010 = 194	11010010 = 210	11100010 = 226	11110010 = 242
11000011 = 195	11010011 = 211	11100011 = 227	11110011 = 243
11000100 = 196	11010100 = 212	11100100 = 228	11110100 = 244
11000101 = 197	11010101 = 213	11100101 = 229	11110101 = 245
11000110 = 198	11010110 = 214	11100110 = 230	11110110 = 246
11000111 = 199	11010111 = 215	11100111 = 231	11110111 = 247
11001000 = 200	11011000 = 216	11101000 = 232	11111000 = 248
11001001 = 201	11011001 = 217	11101001 = 233	11111001 = 249
11001010 = 202	11011010 = 218	11101010 = 234	11111010 = 250
11001011 = 203	11011011 = 219	11101011 = 235	11111011 = 251
11001100 = 204	11011100 = 220	11101100 = 236	11111100 = 252
11001101 = 205	11011101 = 221	11101101 = 237	11111101 = 253
11001110 = 206	11011110 = 222	11101110 = 238	11111110 = 254
11001111 = 207	11011111 = 223	11101111 = 239	11111111 = 255
11010000 = 208	11100000 = 224	11110000 = 240	100000000 = 256