

Synchronizing Origination and Evolution of Life and Life

Intelligence

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About the author: Wang Hongqi, born in October, 1946 in Zhuolu County, Hebei Province, China and graduated from the Department of Modern Physics, University of Science and Technology of China, majoring in atomic nuclear reactor engineering. He has made outstanding research achievements in many academic fields and written more than 50 transcripts, 20 of which have been published in succession both home and abroad. Also, he has written and compiled more than 20 e-books. He is the founder of life intelligence theory and the intelligent gene evolution theory and has established the climatology of manmade topography and forwarded the universe uncertainty principle. He is also the first one in history to verify the geographic locations described in *Shan Hai Jing*, the earliest land resource survey records. Also, he, in collaboration with the painter Sun Xiaoqin, regenerated the *Di Yu Shan He Tu*, a 42m² picture depicting the civilization of China 4200 years ago. In addition, he was the first to bring up the principle of "be good to oneself, be good to lives and be good to nature", advocating that a blessing-share society shall be built and that the Chinese in the 21st century shall build a new scientific knowledge system (Chinese system) independently aiming to reshape the human knowledge system.

Abstract: according to the life intelligence theory and the intelligent gene evolution theory, **life in itself is an intelligent system operating indirect information, or rather, life is an intelligent information operation system capable of utilizing substantive indirect information, performing some cognition activities, fulfilling some expectancy effects and possessing a complex structure. Based on this, it can be learned that life and life intelligence are originated and evolving in synchronization. What defines life and non-life rests with that life has life intelligence, the latter coming from the former and that life intelligence is ever developing in different levels. The essence of biologic evolution is the continuous innovation of the independent surviving technology of life.**

The life intelligence forms and structures on the earth include DNA (including RNA) life intelligence information system, cell membrane (including biological membrane) life intelligence information system, cell membrane network life

intelligence system, neuron cellular network life intelligence information system, human brain thinking life intelligence system and the social animal and human society network life intelligence system as well as, possibly in future, the semi-human semi-robot life intelligence system and robot life intelligence system.

Life is originated from intelligent protein and intelligent nucleic acid. **What is called intelligent protein refers to the protein cluster capable of using some indirect information and fulfilling some expectancy effects. The so-called intelligent nucleic acid refers to the nucleotide molecular chain capable of using the indirect information and fulfilling some expectancy effects. When the intelligent protein and the intelligent nucleic acid become the indirect information and expectancy effect of the other, a genuine life comes into existence.**

Keywords: Life; Origin of Life; Life Intelligence; Indirect Information; Life Intelligence Theory; Intelligent Gene Evolution Theory

Body:

The origin of life has been a problem long troubling humans, as has the origin of life intelligence. For instance, in the *Origin of Species*, by Darwin, no discussion on the origin of life and the origin of the life intelligence has been made. As a matter of fact, the academic circle hasn't reached a consensus on the origin of life, or even on the definition of life in a long time. This, probably, has indicated that the academic circle is still unclear about what life is. In such a background, my research on the origin of life will start from defining life, which will, for the first time, closely combine the origin of life and the origin of life intelligence.

I. Definition of Life

Having done reflections and researches over a long time, I have established the life intelligence theory and the intelligent gene evolution theory, presenting a brand-new definition on life: **life has life intelligence, which is the capacity of operating indirect information. A complete life is an intelligent information operation system using plenty of indirect information, performing some cognition activities, fulfilling some expectancy effects and possessing a complex structure.**

The indirect information mentioned herein includes human language, body language and symbols of animals, pheromone of bees and ants, electric pulse of nerve cells, control substance (like hormone) among cells, encoding of amino acid molecule by the nucleotides (DNA, RNA), special-functional enzyme (like reverse transcriptase) and catalyzer, and various chemical molecule signals and physical-state signals, etc.

The expectancy effect refers to the expectation from the life intelligence on its use of indirect information. This means the life intelligence has some forecast capacity, conscious of what results can be expected from relevant behaviors. In the meanwhile, this also indicates that the life intelligence has anticipation on lapse of time.

It can be concluded from the definition on life above that: life and life intelligence are originated simultaneously. That is to say, the origin of life and the origin of life intelligence, actually, are the one and the same issue.

It is necessary to point out that the life intelligence is hierarchal; expression forms and levels of life intelligence differ greatly. Yet, for a long term, human is merely familiar with life intelligence of its own, but knows little, or is utterly ignorant or even refuses to acknowledge the life intelligence of other levels. As a result, we lack special terms to describe life intelligence of different levels and can only resort to these terms describing human life intelligence in most cases for describing the life intelligence of other levels. To describe the life intelligence of different levels more accurately, I have created some new terms, like life intelligence, indirect information, expectancy effect, intelligent protein, intelligent nucleic acid and intelligent gene.

II. Life Originated from Intelligent Protein and Intelligent Nucleic Acid

It is common knowledge that the simplest creature on the earth is some virus. One is the protein virus, like the prion (prime criminal causing the mad cattle disease), composed of some protein and its attachments and without nucleic acid molecule (DNA, RNA); and the other is the nucleic acid virus, like H₁N₁ series viruses, composed of nucleic acid molecule and several proteins covered outside. According to the life intelligence theory and the intelligent gene evolution theory, the origin of life on the earth can be traced back to the intelligent protein and the intelligent nucleic acid. **What is called intelligent protein refers to the protein cluster capable of using some indirect information and fulfilling some expectancy effects. The so-called intelligent nucleic acid refers to the nucleotide molecular chain capable of using the indirect information and fulfilling some expectancy effects. When the intelligent protein and the intelligent nucleic acid become the indirect information and expectancy effect of the other, a genuine life comes into existence.**

The intelligent protein and the intelligent nucleic acid were earliest found in the nucleotide molecule and amino acid molecule and waters containing multiple organic matters and inorganic substances on the earth. These waters could appear, simultaneously or successively, in different places, indicating that the life on the earth might come into existence, simultaneously or

successively, in places far apart from each other.

The intelligent protein might be formed coincidentally from the polymerization of several amino acid molecules. The prime intelligent protein may be a kind of enzyme having some special functions. Similarly, the intelligent nucleic acid might be formed coincidentally from the aggregation of nucleotide molecules. The prime intelligent nucleic acid may be RNA or DNA of some special functions.

The prime life was imperfect, only capable of using less indirect information, fulfilling simple expectancy effect and would die on birth. Despite all this, such prime life is of great value and significance, because it can provide more and more complicated organic matters for subsequent lives. These organic matters gradually turn into indirect information that can be used by life and other functions useful for the life, like the acquisition and release of energy required by vital activities.

That is to say, even if the prime life is imperfect, its life intelligence has also obtained the chance of continuous learning and the possibility of ongoing improvement, marked by that the subsequent lives could use more and more indirect information and fulfill more and more complicated expectancy effect. Accordingly, its intelligent proteins become more and more diversified and its intelligent nucleic acid chain becomes longer and longer, capable of using more and more molecules of inorganic substances and organic matters, producing, composing and decomposing more and more inorganic molecules and organic molecules. Main inorganic substances include H, C, O, P, Na, K, Ca and Fe and main organic molecules include the nucleotide, amino acid, carbohydrate, esters, purine, pyrimidine and the etc.

III. From Intelligent Protein to Cell Membrane Life Intelligence System

It can be concluded that the intelligent protein comes into existence before the intelligent nucleic acid from the fact that the prion has protein molecules and no nucleic acid molecule and that the nucleic acid virus has both the nucleic acid molecule and the protein molecule.

The intelligent protein is composed of multiple proteins and its attachments and derivatives. Proteins playing the major role include the zymoprotein, membrane protein and histone. Among them, some zymoprotein work as the indirect information and expectancy effects one another; other zymoproteins, as the expectancy effect of the indirect information, are other products or derivatives and attachments. These products, derivatives and attachments include the amino acid molecule, nucleotide molecule, membrane protein, histone, carbohydrate, esters, purine, phrimidine, ribosome and so on.

The membrane protein has provided the intelligent protein with a relatively

independent and sealed self-space. In company with the increase of attachments and derivatives of the membrane protein, the structure and functions of membrane protein have become more and more complex and rich, which further makes the self-space of the intelligent protein better suitable for the survival of the intelligent protein. Then, the membrane protein gradually evolves into prime biological membranes, which gradually develop into the cell membrane.

As we know today, histone is a vital protein for building DNA and plays a significant role in the expression of genes. It can be deduced that the appearance of histone has provided the operability for the intelligent nucleic acid.

Concurrent with this, the life intelligence of the intelligent protein level has already developed a life intelligence system of the new cell membrane level. The cell membrane life intelligence system, through its attachments and derivatives, can integrate various structures inside the cells into a life to confront with the living environment outside the cell membrane.

IV. From Intelligent Nucleic Acid to DNA Life Intelligence System

The Intelligent nucleic acid is such nucleotide molecular chains that can work as the indirect information and expectancy effect one another, or take other organic molecules as the indirect information and expectancy effect, or that make themselves into the indirect information and expectancy effect of other organic molecules (like the intelligent protein). Along with the expansion of functions of the intelligent nucleic acid, the intelligent nucleic acid gradually evolves into RNA or DNA of complicated functions, namely, the DNA life intelligence system.

The DNA life intelligence system is mainly composed of genes and intelligent genes. The genes function in encoding and producing protein, which is extremely sophisticated work, the fundamentals and work flow of which have been learned by us today. By contrast, the intelligent gene is new genes in the design and production process of the life intelligence system. Only when new genes are designed and produced can they encode and produce new proteins; it is a pity that the academic circle knows little about this process and its principles. From the viewpoint of biologic evolution, the process of designing and producing new genes by the life intelligence system is an implicit evolution stage, which will experience a long period and is hard for the life to be observed from the outside. On the contrary, the process of encoding and producing new proteins after the new genes are designed and produced is an explicit evolution phase, when the changes of life are obvious.

It should be noted that the formation of new genes is an extremely complex

process, which will be unlikely to be successful without the participation of the life intelligence. The reason for this rests with that a gene is generated by arranging hundreds of, thousands of, or even tens of thousands of nucleotide molecules orderly. As long as the position of one nucleotide molecule is wrong, this life from the encoding of this gene may be harmful for the life, or even endanger the survival and reproduction of this life.

Further, the biologic evolution, from fish to amphibian, from amphibian to reptiles, from reptiles to birds and mammalia, has always been involved with the simultaneous or synchronizing appearance of several, tens of or even hundreds of new genes. In this case, without the life intelligence, the evolution will be out of the question. From animals, the life intelligence system participating in the design and production of new genes at least includes the cell membrane life intelligence system, DNA life intelligence system, neuron network life intelligence system, with the reverse transcriptase exerting a vital role. It is learned from this that the formation of new genes has sufficiently verified the rationality and scientificness of life intelligence theory and the intelligent gene evolution theory.

V. Unicellular Life Intelligence System

The unicellular organism comes into existence when the cell membrane life intelligence system and the DNA life intelligence system have integrated into one life intelligence system. In the unicellular organism, the cell membrane and its attachments, derivatives, functional cyst or organelles will work together to form the body of life and DNA will work as the indirect information database, which has stored various proteinic information required for producing the life.

VI. Multicellular Network Life Intelligence System

The multicellular creature will exist when multiple unicellular organisms are gathered, with cells having division of labor; at the same time, the multicellular network life intelligence system comes into existence. The multicellular network life intelligence system is built by the cell membrane life intelligence system of each cell and can be found in all multicellular creatures. For human, our multicellular network life intelligence system refers to channels and collaterals in the traditional Chinese medicine.

It is noteworthy that in the multicellular creatures, DNA in every single cell is the same, only differing in cell membrane and its attachments and derivatives. This denotes that the division of labor between cells in the multicellular creatures is, actually, the differentiation of the cell membrane function, namely, the functions of cell membrane life intelligence system has differentiated. Regarding this point, if we are capable of changing the working states of cell membranes of different cells of the multicellular creatures, we may well turn one cell into another.

VII. Neuron Cellular Life Intelligence System

With the appearance of full-time neuron cells in the multicellular creatures, the neuron cellular network life intelligence system is born. The neuron cells are different from other cells mainly in the specialization of cell membranes, which can produce more sophisticated information conduction functions.

VIII. Human Brain Thinking Life Intelligence System

The human brain thinking life intelligence system came into existence when ape turned into homo erectus. Brain thinking life intelligence system is a senior form of the neuron cellular life intelligence system, featuring the further specialization of cell membrane to form an enormous information storage and information processing network with such structures as the ganglia, axon and dendrite.

IX. Levels of Life Intelligence

The life intelligence has several levels, with forms and structures on the earth including DNA (including RNA) life intelligence information system, cell membrane (including biological membrane) life intelligence information system, cell membrane network life intelligence system, neuron cellular network life intelligence information system, human brain thinking life intelligence system and the social animal and human society network life intelligence system as well as, possibly in future, the semi-human semi-robot life intelligence system and robot life intelligence system.

The evolution of life intelligence indicates that life intelligence can function in learning and information accumulation. The skipping of life intelligence levels indicates that the primary life intelligence system can design and produce senior life intelligence systems. The complicated life can have life intelligence system of different levels at the same time, indicating that life intelligence systems of different levels have a cooperation relationship between each other, but at the same time, are relatively independent and perform their respective functions.

For instance, the normal labor is finished under the operation of the cell membrane network life intelligence system and the neuron cellular network life intelligence information system, while the cesarean delivery is finished under the operation of the human brain thinking life intelligence system. Of course, the heal of knife edge left by the cesarean delivery shall still be finished under the operation of the cell membrane network life intelligence system and the neuron cellular network life intelligence information system.

Further, human has about 100,000 kinds of proteins, 30,000 kinds of genes and 200 kinds of cells. These proteins are also evolved from the intelligent protein, these genes from the intelligent nucleic acid and cells from the

unicellular organisms. From the aspect of ever-increasing protein kinds, genes are only for producing the indirect information one by one for the new proteins. From the aspect of ever-increasing gene quantity, proteins are only for producing the indirect information one by one for the new genes. In company with the increase of proteins, gene quantity and cell kinds, the level of life intelligence will be elevated accordingly.

X. Life Forms

Lives on the earth have many forms, including living form, evolution form, reproduction form, hibernation form and growth metamorphosis.

1. Living form of life (also called surviving form), mainly characterized by metabolization;
2. Evolution form of life, including implicit evolution and explicit evolution;
3. Reproduction form of life, replicating both DNA and cell membrane and its attachments and derivatives;
4. Hibernation form of life, greatly reducing or even stopping metabolization and under proper conditions, capable of restoring the metabolization; different creatures have greatly different hibernation periods. The hibernation period of some bacteria is as long as tens of thousands of years, or even longer.
5. Growth metamorphoses of life; from oosperm to newborn infant, several growth metamorphoses will happen, so will from the newborn infant to adolescence. The most representative growth metamorphoses occur to insects. For instance, the silkworm is grown in a process from larvae to pupae, from pupae to moth. The similar growth metamorphoses also can be found in butterflies, cicada, dragonfly, fly and mosquito.

To sum up, according to the life intelligence theory and the intelligent gene evolution theory, life in itself is an intelligent system operating indirect information, or rather, life is an intelligent information operation system capable of utilizing substantive indirect information, performing some cognition activities, fulfilling some expectancy effects and possessing a complex structure. Life and life intelligence are originated and evolving in synchronization. What defines life and non-life rests with that life has life intelligence, the latter coming from the former and that life intelligence is ever developing in different levels. The essence of biologic evolution is the continuous innovation of the independent surviving technology of life.

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生命与生命智力同时起源、同步进化

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作者简介：1946年10月出生于中国河北省涿鹿县，毕业于中国科学技术大学近代物理系反应堆工程专业。在诸多学术领域取得了一系列的学术研究成果，撰写书稿50余部，陆续在海内外出版专著20余部，撰稿汇编电子版丛书20余部，创建生命智力学暨智因进化论，创建人造地形气候学，提出宇宙测不准原理，历史上第一次全面考证《山海经》（人类最早的大规模国土资源考察记录）的地理方位、与画家孙晓琴合作复原绘制出再现4200年前华夏文明景观的42平方米巨画《帝禹山河图》，率先提出善待自己、善待生命、善待自然的人类生存原则，主张构建共福主义社会，提倡21世纪的中国人要自主创建新科学知识体系（华学），重构人类知识体系。

摘要：

根据生命智力学暨智因进化论，生命是一种对间接信息进行操作的智力系统，准确说生命是一种能够使用大量间接信息、实施某种认知选择活动、达成某些期望效应、拥有复杂结构的智力信息操作系统。据此可知，生命与生命智力同时起源、同步进化，生命与非生命的分水岭在于生命拥有生命智力，生命智力来自生命体自身，生命智力是不断发展的也是有层次的，生物进化的实质是生命自主生存技术的不断创新。

地球上的生命智力形式和结构包括DNA（包括RNA）生命智力信息系统，细胞膜（包括生物膜）生命智力信息系统，细胞膜网络生命智力系统，神经元细胞网络生命智力信息系统，人类大脑思维生命智力系统，以及群居动物和人类的社会网络生命智力系统，未来可能还会有半人半机器人生命智力系统和全机器人生命智力系统。

生命起源于智蛋白和智核酸。所谓“智蛋白”，就是一些能够使用间接信息达成某种期望效应的蛋白质团；所谓“智核酸”，就是一些能够使用间接信息、达成某种期望效应的核苷酸分子链；当“智蛋白”与“智核酸”互为间接信息和期望效应时，真正意义上的生命就诞生了。

关键词：生命，生命起源，生命智力，间接信息，智蛋白，智核酸，智因，生命智力学，智因进化论

正文：

生命起源是一个长期困扰人类的问题，生命智力起源同样是一个长期困扰人类的问题，例如达尔文在撰写《物种起源》一书时就拒绝讨论生命起源和生命智力起源的问题。

事实上，长期以来，学术界不但没有解决生命起源的问题，甚至连生命的定义也没有能够取得一致的意见。或许，这恰恰表明，学术界对“生命是什么”的认识仍然处于模糊不清、似懂非懂的状况。

有鉴于此，我对生命起源的研究，就从对生命进行一种全新的定义开始，而这个生命定义首次把生命起源与生命智力起源紧密联系在一起。

一、我对生命的定义

我经过长期的思考与研究，建立了生命智力学暨智因进化论，提出了一种全新的生命定义：**生命拥有生命智力，生命智力是一种对间接信息进行操作的能力，完整的生命是一种能够使用大量间接信息、实施某种认知选择活动、达成某些期望效应、拥有复杂结构的智力信息操作系统。**

所谓间接信息，包括人类的语言文字，动物的形体语言符号，蜜蜂、蚂蚁的信息素，神经细胞的电脉冲，细胞之间的控制素（例如激素），细胞里的核苷酸分子串（DNA、RNA）对氨基酸分子的编码，特定功能酶（例如逆转录酶）和催化剂，以及各种化学分子信号和物理状态信号，等等。

所谓期望效应，是指生命智力对其使用间接信息等行为的后果，有着某种程度的期待。这意味着生命智力有着某种程度的预见能力，知道什么样的行为可以期待什么样的结果。与此同时，这也表明生命智力拥有对时间流逝的预期。

根据上述生命定义，可以得到的直接推论是：生命与生命智力同时起源。也就是说，生命起源问题与生命智力起源问题，实际上乃是同一个问题。

有必要指出的是，生命智力是有层次的，不同层次的生命智力的表现形式和水平都有着很大的差异。但是由于长期以来，我们人类只熟悉人类的生命智力而对其它层次生命智力却知之甚少或者一无所知甚至不予承认。因此我们非常缺少描述不同层次生命智力的专用词汇，在绝大多数情况下只能是借用描述人类生命智力的那些词汇来描述其它层次的生命智力。为了能够更准确的描述不同层次的生命智力，我使用了一些新创的词汇，例如“生命智力”、“间接信息”、“期望效应”、“智蛋白”、“智核酸”、“智因”等。

二、生命起源于智蛋白和智核酸

众所周知，地球上最简单的生物是某些病毒，一种是蛋白质病毒，例如朊病毒（疯牛病的元凶），由若干种蛋白质及其附着物构成，里面没有核酸分子（DNA、RNA）。另一种是核酸病毒，例如H1N1系列病毒，由核酸分子及其外包裹着的若干种蛋白质构成。根据生命智力学暨智因进化论，地球上的生命起源可以追溯到“智蛋白”（亦可称为“灵蛋白”）和“智核酸”（亦可称为“灵核酸”）。所谓“智蛋白”，就是一些能够使用间接信息、达成某种期望效应的蛋白质团；所谓“智核酸”，就是一些能够使用间接信息、达成某种期望效应的核苷酸分子链；当“智蛋白”与“智核酸”互为间接信息和期望效应时，真正意义上的生命就诞生了。

最早的智蛋白和智核酸，出现在地球上那些富集核苷酸分子和氨基酸分子，以及其它多种有机物和无机物的水体里。这样的水体可能同时或先后出现在地球的许多不同地方，这就意味着地球上的生命可能同时或先后诞生于地球上彼此相隔很远的若干地方。

智蛋白的形成，可能发生在某些偶然的巧合的情况下：若干种氨基酸分子聚合在一起，变成了智蛋白，最初的智蛋白可能是一些具有特殊功能的酶。智核酸的形成，可能发生在某些偶然的巧合的情况下：若干个核苷酸分子聚集在一起，变成了智核酸，最初的智核酸可能就是某些具有特定功能的RNA或DNA。

最初的生命是不完整生命体，它们只能使用较少的间接信息、达成简单的期望效应，而且即生即灭。尽管如此，这些即生即灭的生命体，其价值和意义在于，它们为后来的生命提供了越来越多的各种各样的复杂有机物；其中的许多有机物逐渐又成为生命可以利用的间接信息，以及对生命有用的其它功能，例

如生命活动所需能量的获取与释放。

也就是说，即使是最初的不完整生命，它们的生命智力也获得了不断学习的机会和不断进步的可能，其主要标志就是后来的生命能够使用越来越多的间接信息，达成越来越复杂的期望效应。因此，它们的智蛋白拥有的蛋白质种类越来越多，它们的智核酸拥有的核苷酸分子链越来越长，它们能够使用的无机物分子和有机物分子越来越多，它们能够制造、合成或分解出来的无机物分子和有机物分子也越来越多。其中，主要的无机物含有氢元素、碳元素、氧元素、氮元素、磷元素、钠元素、钾元素、钙元素、铁元素等；主要的有机物分子包括核苷酸分子、氨基酸分子、糖类、酯类、嘌呤、嘧啶，等等。

三、从智蛋白到细胞膜生命智力系统

从朊病毒有蛋白质分子而没有核酸分子，以及核酸病毒既有核酸分子也有蛋白质分子来看，可以推知先有智蛋白，后有智核酸。

智蛋白由多种蛋白质及其附着物、衍生物构成，起核心作用的蛋白质包括酶蛋白、膜蛋白和组蛋白等。其中有若干种酶蛋白，它们互为间接信息和期望效应还有一些酶蛋白作为间接信息的期望效应是其它的生成物或衍生物、附着物，这些生成物和衍生物、附着物包括氨基酸分子、核苷酸分子，以及膜蛋白、组蛋白、糖类、酯类、嘌呤、嘧啶、核糖体，等等。

膜蛋白的出现使智蛋白拥有了相对独立、相对封闭的自我空间，随着膜蛋白的附着物、衍生物的不断增多，膜蛋白的结构及其功能也越来越复杂和丰富，这就进一步使智蛋白的自我空间变得越来越适宜于智蛋白的生存。到了这时，膜蛋白就进化成为原始的生物膜，生物膜的进一步发展就成为细胞膜。

我们今天知道，组蛋白是构建 DNA 的重要蛋白质，对基因的是否表达有着重要的作用。据此可以推知，组蛋白的出现使智蛋白拥有了对灵核酸进行操作的可能性。

与此同时，智蛋白层次的生命智力，已经进化出新的细胞膜层次的生命智力系统。细胞膜生命智力系统通过其附着物、衍生物，能够把细胞内的各种结构物统合成成为一个整体的生命体，以便共同应对细胞膜外的生存环境。

四、从智核酸到 DNA 生命智力系统

智核酸是这样的一些核苷酸分子链，它们可以互为间接信息和期望效应，或者以其它的有机物分子为间接信息和期望效应，或者自己成为其它有机物分子（例如智蛋白）的间接信息和期望效应。随着智核酸的功能不断扩展，智核酸就逐渐进化成为有复杂功能的 RNA（核糖核酸）或 DNA（脱氧核糖核酸），亦即 DNA 生命智力系统。

DNA 生命智力系统主要由基因和智因构成，基因承担着编码制造蛋白质的功能，当然这是一项非常复杂的工作，不过其基本原理和工作流程我们今天已经有了深入的了解。对比之下，智因乃是生命智力系统正在设计制造过程中的新基因，只有当新基因被设计制造完成后，才能够承担编码制造新蛋白质的功能，遗憾的是学术界对此过程及其原理尚知之甚少。从生物进化角度来说，生命智力系统正在设计制造新基因的过程，属于隐性进化阶段，这个阶段往往需要经历很长的时间，而且从外部难以观察到生命体的变化。对比之下，新基因被设计制造完成后开始承担编码制造新蛋白质的时候，属于显性进化阶段，这个阶段生命体发生的变化是显而易见的。

有必要指出的是，新基因的形成是一个极其复杂的过程，这个过程如果没有生命智力的参与，其成功的可能性几乎是零。这是因为，一个基因是由数百、数千甚至数万个核苷酸分子有序排列构建出来的，只要有一个核苷酸分子的碱基排列位置出现差错，由该基因编码合成的蛋白质对生命体就可能是有毒的、有害的，并且很可能危及该生命体的生存和繁衍。

进一步说，生物进化，例如从鱼类到两栖类，从两栖类到爬行类，从爬行类到鸟类、哺乳类，往往涉及到数个、数十个甚至数百个新基因的同时或同步出现；在这种情况下，如果没有生命智力的参与，这样的进化几乎是完全不可能发生的。对于动物来说，参与设计制造新基因的生命智力系统，至少包括细胞膜生命智力系统、DNA 生命智力系统、神经网络生命智力系统，其中逆转录酶应该发挥着相当重要的作用。据此可知，新基因的形成，充分验证了生命智力学暨智因进化论的合理性和科学性。

五、单细胞生命智力系统

当细胞膜生命智力系统与 DNA 生命智力系统组合成为共同的生命智力系统时，单细胞生物就诞生了，单细胞生命智力系统也就同时诞生了。在单细胞生物里，细胞膜及其内外附着物、衍生物、功能囊包或细胞器等共同构建起生命的躯体，DNA（包括 RNA）则承担着生命体的间接信息库的职责，这个间接信息库储存着制造生命体所需各种各样蛋白质的信息。

六、多细胞网络生命智力系统

当若干单细胞生物聚合在一起，并出现细胞分工的时候，多细胞生物就诞生了，多细胞网络生命智力系统也就同时诞生了。多细胞网络生命智力系统是由每一个细胞的细胞膜生命智力系统共同构建起来的，它存在于所有的多细胞生物之中，我们人体的多细胞网络生命智力系统即中医理论所说的经络。

值得注意的是，多细胞生物的每一个细胞里的 DNA 都是一样的，它们的区别主要在于细胞膜及其附着物、衍生物有所不同。这就意味着，多细胞生物的细胞分工，实际上是细胞膜的功能出现了分化，亦即细胞膜生命智力系统的功能发生了分化。有鉴于此，如果我们能够改变多细胞生物的不同细胞的细胞膜工作状态，那么我们就有可能让一种细胞转变成为另一种细胞。

七、神经元细胞生命智力系统

当多细胞生物出现专职的神经元细胞的时候，就标志着神经元细胞网络生命智力系统诞生了。神经元细胞与其它细胞的主要差别在于细胞膜的特化，神经元细胞的细胞膜特化出更复杂的信息传导功能。

八、人类大脑思维生命智力系统

当直立猿举起火把变成直立人的时候，就标志着人类大脑思维生命智力系统诞生了。大脑思维生命智力系统是神经元细胞生命智力系统的高级形式，其特征在于细胞膜的进一步特化，从而形成由神经节、轴突、树突等结构组建起来的庞大的信息储存与信息处理网络。

九、生命智力的多种层次

地球上的生命智力有多种层次，其主要形式和结构包括 DNA（包括

RNA)生命智力信息系统,细胞膜(包括生物膜)生命智力信息系统,细胞膜网络生命智力系统,神经元细胞网络生命智力信息系统,人类大脑思维生命智力系统,以及群居动物和人类的社会网络生命智力系统,未来可能还会有半人半机器人生命智力系统和全机器人生命智力系统。

生命智力的进化,表明生命智力具有学习能力和信息积累功能。生命智力层次的跳跃,表明初级生命智力系统可以设计制造高级生命智力系统。复杂生命可以同时拥有多种层次的生命智力系统,表明不同层次的生命智力系统彼此之间既存在着协同关系,也存在着相对独立、各司其职的关系。

举例来说,自然分娩是由细胞膜网络生命智力系统和神经元细胞网络生命智力信息系统共同操作完成的,而剖腹产则是由人类大脑思维生命智力系统操作完成的,当然剖腹产刀口的愈合过程仍然是要由细胞膜网络生命智力系统和神经元细胞网络生命智力信息系统来实施的。

进一步说,人体大约有10万种蛋白质、3万种基因和200种细胞,这么多的蛋白质也是由当初的智蛋白发展进化出来的,这么多的基因都是由当初的智核酸发展进化出来的,这么多的细胞也是由当初的单细胞生物发展进化出来的。从蛋白质种类不断增加的角度来说,基因只是为了制造新蛋白质的一个个间接信息。从基因数量不断增加的角度来说,蛋白质只是为了制造新基因的一个个间接信息。而随着蛋白质种类不断增加、基因数量不断增加、细胞种类不断增加,生命智力的层次和水平也不断增加和不断提高。

十、生命的多种基本形态

地球上的生命具有多种基本形态,它们包括活生态、进化态、繁殖态和休眠态、发育变态等。

1、生命的活生态(亦可称为生存态),以新陈代谢为主要特征。

2、生命的进化态,包括隐性进化和显性进化。

3、生命的繁殖态,既复制DNA,也同时复制细胞膜及其附着物、衍生物。

4、生命的休眠态,可以大幅度降低甚至停止新陈代谢,而当条件适宜时又能够恢复新陈代谢等生命功能。不同生物的休眠态时间长短相差很多,已知某些细菌的休眠态长达数十万年甚至更长久。

5、生命的发育变态。从受精卵到新生儿,经过多次发育变态。从新生儿到青春期,也经历着发育变态。最典型的发育变态,出现在昆虫身上,例如蚕的幼虫变蛹,蛹又化为蛾;蝴蝶、蝉、蜻蜓、苍蝇、蚊子等都有类似的发育变态。

综上所述,根据生命智力学暨智因进化论,生命是一种对间接信息进行操作的智力系统,准确说生命是一种能够使用大量间接信息、实施某种认知活动、达成某些期望效应、拥有复杂结构的智力信息操作系统。生命与生命智力同时起源、同步进化,生命与非生命的分水岭在于生命拥有生命智力。生命智力来自生命体自身,生命智力是不断发展的也是有层次的,生物进化的实质是生命自主生存技术的不断创新。

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Background introduction:

Born in Zhulu Yu county of Hebei province in 1946, he graduated from University of Science and Technology of China in 1970, major in modern physics--- Atomic nuclear reactor engineering.

With great experience of science and technology management, engaged with patent invention, science research and culture bookmaking after years of efforts, he obtained a series of scientific achievements and did many significant contributions to the development of science and social cultures of China.

Primary achievements:

- **Composed more than 50 manuscripts within the country and abroad, more than 20 books have been published**, involved many fields of natural science and social science including chronometer, geography, weather, history, biology, politics, economy, society, culture, military, information, Structure, Semeiology, literature and art.
- **Published hundreds of thesis** within the country and abroad, published thousands of thesis on famous Internet Forums.
- Applied and obtained many patents.
- **Brought forward the assumption of farmland underground pipeline irrigation technique** in the early of 20th century seventies, but not actualized in China, developed by Israelite and make them attained great economic benefits afterward.

- **Reappearance the 42 m² painting “Di Yu Shan He Tu”** which reappeared the sight of China of 4200 years before for the first time in history. China mythology expert Yuan-ke congratulated: “ “Di Yu Shan He Tu” produced by Wang Hong-qi is a great achievement which combined science and art!” Famous Peking university professor Zhang Dai-nian gave an epigraph for congratulations too. Chinese national geography magazine used 7 pages to introduced “Di Yu Shan He Tu” particularly. “Di Yu Shan He Tu” has also been reported by CCTV, BTV, Atlas magazine, Hong Kong Ming Pao, People’s daily abroad edition, Science Times special edition, and Chinese science.

- **Attended several important seminar and exhibitions:** Attend the 1st “Shan Hai Jing” academic seminar in 1982, attended first Chinese folk art exposition in 1998 shown the “ Shan Hai Jing” series. Lectured “Di Yu Shan He Tu” in natural science history institute in 1999. Attended International cartography and atlas exhibition in 2001, in the exhibition “Di Yu Shan He Tu” showed as the only handmade artistic atlas and spoken highly by experts all around the world. Attended Chinese art exposition and came out with “Di Yu Shan He Tu” in 2003/

- **Attended the 2006 annual conference of Chinese science association** on invitation, published the thesis “The environmental influence caused by manmade terrain and Chinese water source strategy “ and made the speech.

- In April 2006, measured out and published in the first instance that there is 330 thousand ton dust landed in Beijing in one night.

- In September 2006, attend the CCTV program “Decision-makers talk” as independence scholar on invitation, aired own opinion about Chongqing city’s drought phenomenon.

- **Found “The Climatology of manmade topography”**, took the lead in pointing out man-made landform can be positive and negative influence on weather, and brought forward that could solve the technique problem of lack of water in China.

- **Found “Intelligent Gene evolution theory”**, pointed out that life in itself is an intelligent system operating indirect information, or rather, life is an intelligent information operation system capable of utilizing substantive indirect information, performing some cognition activities, fulfilling some

expectancy effects and possessing a complex structure. Life and life intelligence are originated and evolving in synchronization. What defines life and non-life rests with that life has life intelligence, the latter coming from the former and that life intelligence is ever developing in different levels. The essence of biologic evolution is the continuous innovation of the independent surviving technology of life.

- Took the lead in pointing out human existence principle of “be good to yourself, be good to lives, be good to nature”, which is helpful to construct a harmonious society and already attained increasing understanding and support in China.

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王红旗（笔名重构），男，祖籍唐县，1946年生于涿鹿，1965年人大附中高中毕业，1970年毕业于中国科学技术大学近代物理系反应堆工程专业，曾从事技术工作、科研管理工作、科研工作，创办民间科技信息开发公司，现任北京山海文化企划苑首席学者，网上重构智因学研院首席学者，在自然科学、社会科学、文学艺术诸多领域取得了一系列重大学术研究成果。

1、创建生命智力学暨智因进化论：经过数十年长期思考与研究，于2004年正式创建生命智力学暨智因进化论。众所周知，爱因斯坦相对论是对牛顿经典力学的包容与超越。同理，生命智力学暨智因进化论也是对达尔文随机微变古典进化理论的包容与超越。事实上，达氏进化论既不讨论生命智力的进化过程，也不能解释人类智力对生物进化的作用（例如剖腹产、基因工程）。

对比之下，生命智力学暨智因进化论则指出：**生命与生命智力同时起源、同步进化，生命智力的实质是使用间接信息达成期望效应。所有的生命都拥有生命智力，不同的生命拥有不同结构、不同形式和不同层次的生命智力，生物进化的实质是生命智力主导实施的生存方式多样化和生存技术复杂化。**地球上的生命具有多种形式、多种层次的生命智力系统，它们主要有DNA生命智力系统、细胞膜生命智力系统、细胞膜网络生命智力系统、神经元细胞生命智力系统、大脑细胞生命智力系统，等等。其中，DNA生命智力系统主要由基因和智因组成，智因即正在形成过程中的新基因。“我”就是生命智力系统的自觉，“灵魂”属于高级层次的生命智力。

2、创建人造地形气候学：20世纪90年代发现人造地形对自然气候能够产生可以观察到的影响，此后随着研究的深入创建人造地形气候学。2006年应邀出席中国科协年会，论文《人造地形对气候的影响暨中国水资源战略调整》收入论文集，发表演讲《基础、宏观、微观三大领域的自主创新》，介绍智因设计进化论、人造地形气候学、帝禹山河图。

3、先后提出若干物理学猜想：光守恒猜想、引力形成于电磁力差值猜想、空间是物质猜想、时间是信息猜想、正电子具有负质量猜想和宇宙测不准原理。

4、历史上首次全面考证《山海经·五藏山经》（人类最早的大规模国土资源考察记录）的地理方位，并与画家孙晓琴（琴岛瑶池）合作于1999年9月9日

复原绘制出再现 4200 年前华夏文明景观的 42 平方米巨画《帝禹山河图》。

5、率先提出善待自己、善待生命、善待自然的人类生存原则；主张构建思想自由、消费适度、权利公正的共福社会；提倡 21 世纪的中国人要重构人类知识体系，在国学和西学的基础上构建华学。

6、在国内外发表文章数百篇，陆续出版专著 20 余部，代表作有《一言兴邦》、《符号之谜》、《宇宙的重构》、《灾难与生存》、《解读远古密码》、《探寻圣人的足迹》、《预测的玄机》、《财富属于谁》、《老子隐迹》（长篇历史小说）、《神秘的星宿文化与游戏》、《经典图读山海经》（王红旗文，孙晓琴图）等。待出版的重要著作有《生命智力学暨智因进化论：揭开生命最高秘密》、《人造地形气候学暨中国水资源战略》、《龙凤文化大视野》、《屈原诗歌图解》（王红旗文，孙晓琴图），以及长篇科幻小说《苏东坡密码》、《太阳系密码》等。绘画作品的代表作有油画《无》、《参禅》、《雪夜盼人归》、《眼睛重瞳》、《智因》、《五行意象》、《蛛网宇宙》、《空间》、《时间》、《道》、《悟》、《大展鸿图》等。

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