

Review Article

## On the Possible Coding Principles of DNA & I Ching

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### ABSTRACT

In this review article, we discuss the possible coding principles in DNA and I Ching in the context of the principle of existence. The said coding principles produce the  $4^3=64$  codons and anti-codons of DNA respectively. Further, similar coding principles produce the  $2^6=64$  hexagrams of I-Ching.

**Key Words:** God, DNA, I Ching, coding mechanism, principle of existence.

### 1. The Transcendental Ground of Reality

God is both transcendent and immanent as it is understood in Hinduism. The transcendental aspect of God produces and influences reality through self-referential spin as the interactive output of God. In turn, immanent aspect of God experiences reality as the interactive input to God also through self-referential spin [1].

Thus, in the beginning there was God by itself  $e^{i0} = 1$  materially empty and spiritually restless. And it began to imagine through primordial self-referential spin  $1 = e^0 = e^{iM-iM} = e^{iM} e^{-iM} = e^{-iM} / e^{iM} = e^{iM} / e^{iM} \dots$  such that it created the external object to be observed and internal object as observed, separated them into external world and internal world, caused them to interact through self-referential Matrix Law and thus gave birth to the Universe which it has since passionately loved, sustained and made to evolve [1].

In this Universe, the body of God, as ether represented by Euler number  $e$ , is the ground of existence and can form complimentary pairs of objects. We draw below several diagrams illustrating the hypothesis of how God created the Universe comprising of the external world and the internal world (the dual-world) and how the external object and internal object and the external world and internal world interact.

As shown in Figure 1.1, a primordial phase distinction (dualization) was made in the Godhead through imagination  $i$ . At the Body level, this is  $e^0 = e^{iM-iM} = e^{iM} e^{-iM} = e^{-iM} / e^{iM} = e^{iM} / e^{iM} \dots$

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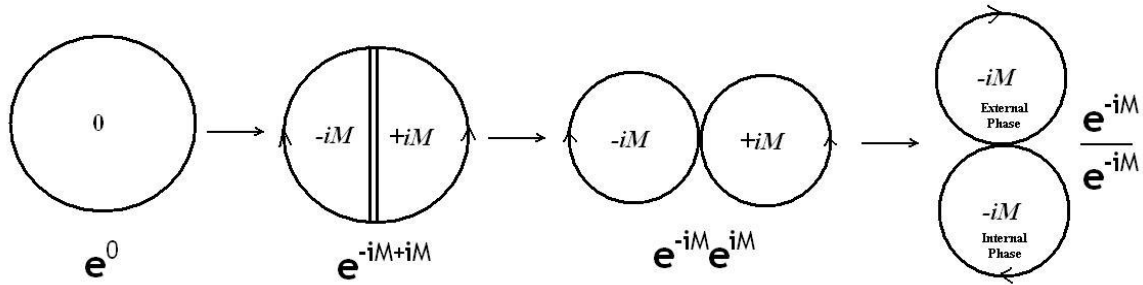


Figure1.1. Illustration of primordial phase distinction

The primordial phase distinction in Figure 1.1 is accompanied by matrixing of the Body **e** into: (1) external and internal objects, and (2) self-acting and self-referential Matrix Law, which accompany the imaginations of the Godhead so as to enforce (maintain) the accounting principle of conservation of zero, as illustrated in Figure 1.2.

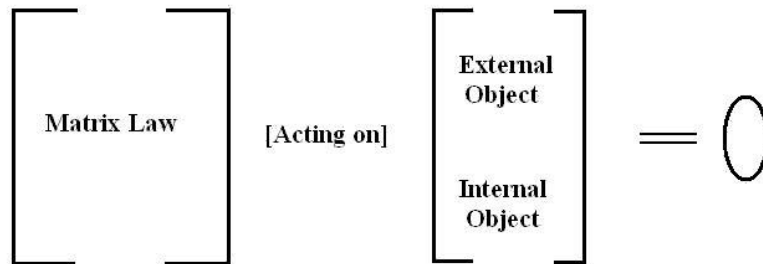


Figure1.2. God Equation

Figure 1.3 shows from another perspective of the relationship among external object, internal object and the self-acting and self-referential Matrix Law:



Figure 1.3. Self-interaction between external and internal objects

## 2. Possible DNA Coding Mechanism

Based on the principle of existence [1], one may mathematically generate the DNA codes as follows [2]:

$$\begin{aligned}
 1 &= e^{i0} = e^{i0} e^{i0} e^{i0} = e^{ix-ix} e^{iy-iy} e^{iz-iz} = (e^{ix} e^{iy} e^{iz}) (e^{-ix} e^{-iy} e^{-iz}) \\
 &\rightarrow (A \quad T \quad G)_{+Condon} (T \quad A \quad C)_{-Anticoden} \text{ etc.}
 \end{aligned}
 \tag{2.1}$$

where x, y & z are hypothesized to be three parameters for coding information in each DNA strand/sequence and the following selections and mappings are used at the code level:

$e^{ix}$  is allowed to have the value  $+1, +i, -1$  or  $-i$  respectively at the code level

$e^{iy}$  is allowed to have the value  $+1, +i, -1$  or  $-i$  respectively at the code level

$e^{iz}$  is allowed to have the value  $+1, +i, -1$  or  $-i$  respectively at the code level (2.2)

$e^{-ix}$  is allowed to have the value  $-1, -i, +1$  or  $+i$  respectively at the code level

$e^{-iy}$  is allowed to have the value  $-1, -i, +1$  or  $+i$  respectively at the code level

$e^{-iz}$  is allowed to have the value  $-1, -i, +1$  or  $+i$  respectively at the code level

$$\text{Mapping: } \{+1, +i, -1, -i\} \rightarrow \{A, C, T, G\}
 \tag{2.3}$$

Also see Figure 2.1 below:

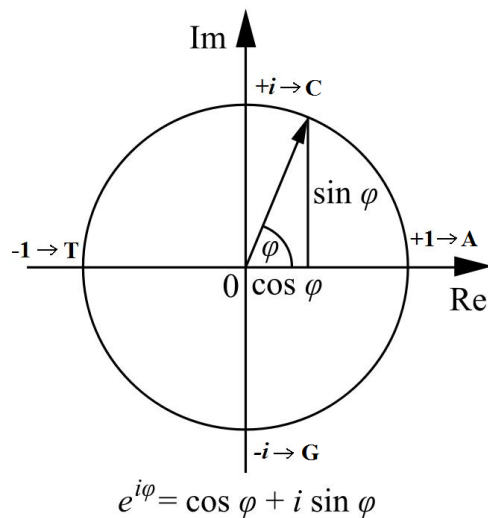


Figure 2.1

The above selections and mappings produce the  $4^3=64$  codons and anti-codons of DNA respectively.

In this coding system, {A, C, T, G} as a set have the following algebraic properties:

$$\begin{aligned}
 A + T + C + G &= 0 \\
 A^2 + T^2 + C^2 + G^2 &= 0 \\
 &\dots \\
 A^n + T^n + C^n + G^n &= 0
 \end{aligned}
 \tag{4.4}$$

where  $n=1,2,3,4,\dots$

Further hypothesizing that  $x, y$  &  $z$  are three parameters encoding spatial information of a protein in a DNA strand, one may find meaning for each code position of the triplet codon and possible connection between the triplet codon and the three dimensionality of space. However, these are just preliminary hypotheses/speculations at this point.

### 3. Generation of Hexagrams of I Ching

There are many metaphysical discussions about the connections of DNA code and the Chinese I Ching. Applying the principle of existence [1], one may generate the hexagrams of I Ching as follows:

$$\begin{aligned}
 1 &= e^{i0} = e^{i0} e^{i0} e^{i0} = e^{ix-ix} e^{iy-iy} e^{iz-iz} = \left( e^{ix} e^{iy} e^{iz} \right) \left( e^{-ix} e^{-iy} e^{-iz} \right) \\
 &= \frac{\begin{pmatrix} e^{ix} & e^{iy} & e^{iz} \\ e^{ix} & e^{iy} & e^{iz} \end{pmatrix}}{\begin{pmatrix} e^{i\alpha} \\ e^{i\beta} \\ e^{i\gamma} \\ e^{i\phi} \\ e^{i\varphi} \\ e^{i\chi} \end{pmatrix}} \rightarrow \frac{\begin{pmatrix} \text{---} \\ \text{---} \\ \text{---} \end{pmatrix}}{\begin{pmatrix} \text{---} \\ \text{---} \\ \text{---} \end{pmatrix}} \xrightarrow{\text{Upper Trigram}} \text{etc.} \xrightarrow{\text{Lower Trigram}}
 \end{aligned}
 \tag{3.1}$$

where  $x, y$  &  $z$  are hypothesized to be three parameters for coding information in I-Ching before the separation of the outer aspect and the inner aspect;  $\alpha, \beta$  &  $\gamma$  are three parameters for coding

information of outer aspect;  $\psi$ ,  $\phi$  &  $\chi$  are three parameters for coding information of inner aspect; and the following selections and mappings are used at the hexagram/code level:

$$\begin{aligned}
 e^{i\alpha} & \text{ is allowed to have the value (collapse to) } +I, \text{ or } -I \text{ respectively at the code level} \\
 e^{i\beta} & \text{ is allowed to have the value (collapse to) } +I, \text{ or } -I \text{ respectively at the code level} \\
 e^{i\gamma} & \text{ is allowed to have the value (collapse to) } +I, \text{ or } -I \text{ respectively at the code level} \quad (3.2) \\
 e^{-i\psi} & \text{ is allowed to have the value (collapse to) } +I, \text{ or } -I \text{ respectively at the code level} \\
 e^{-i\phi} & \text{ is allowed to have the value (collapse to) } +I, \text{ or } -I \text{ respectively at the code level} \\
 e^{-i\chi} & \text{ is allowed to have the value (collapse to) } +I, \text{ or } -I \text{ respectively at the code level} \\
 \{+1, -1\} & \rightarrow \{ \_ \_ \text{ (Yang)}, \_ \_ \text{ (Yin)} \} \quad (3.3)
 \end{aligned}$$

The above selections and mappings produce the  $2^6=64$  hexagrams of I-Ching.

In this coding system, {Yang, Yin} as a set have the following algebraic properties:

$$\text{Yang} + \text{Yin} = 0 \quad (3.4)$$

To accommodate “Changing Yang” and “Changing Yin,” the following expanded selections and mapping can be used:

$$\begin{aligned}
 e^{i\alpha} & \text{ is allowed to have the value (collapse to) } +I, +i, -I \text{ or } -i \text{ respectively at the code level} \\
 e^{i\beta} & \text{ is allowed to have the value (collapse to) } +I, +i, -I \text{ or } -i \text{ respectively at the code level} \\
 e^{i\gamma} & \text{ is allowed to have the value (collapse to) } +I, +i, -I \text{ or } -i \text{ respectively at the code level} \quad (3.5) \\
 e^{-i\psi} & \text{ is allowed to have the value (collapse to) } +I, +i, -I \text{ or } -i \text{ respectively at the code level} \\
 e^{-i\phi} & \text{ is allowed to have the value (collapse to) } +I, +i, -I \text{ or } -i \text{ respectively at the code level} \\
 e^{-i\chi} & \text{ is allowed to have the value (collapse to) } +I, +i, -I \text{ or } -i \text{ respectively at the code level} \\
 \{+1, +i, -1, -i\} & \rightarrow \{ \text{Yang}, \text{Changing Yang}, \text{Yin}, \text{Changing Yin} \} \quad (3.6)
 \end{aligned}$$

The above selections and mappings produce the  $4^6=4096$  hexagrams of I-Ching which include the Changing Yang and Changing Yin.

Therefore, the 64 DNA Codons and their corresponding anti-codons belong to a subset of the 4096 hexagram set.

In this expanded coding system, {Yang, Changing Yang, Yin, Changing Yin} as a set have the following algebraic properties:

$$\begin{aligned} Yang + Yin + ChangingYang + ChangingYin &= 0 \\ Yang^2 + Yin^2 + (ChangingYang)^2 + (ChangingYin)^2 &= 0 \\ \dots \\ Yang^n + Yin^n + (ChangingYang)^n + (ChangingYin)^n &= 0 \end{aligned} \tag{3.7}$$

where  $n=1,2,3,4,\dots$

## References

1. Hu, H. & Wu, M. (2010), The Principle of Existence: Toward a Scientific Theory of Everything. *Scientific God Journal*, 1(1): pp. 8-77.
2. Hu, H. & Wu, M. (2011), Decipherment of the Secrets of DNA. *DNA Decipher Journal*, 1(1): pp. 1-10.