EigenForm

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“I am the observed link between myself and observing myself.”

Heinz von Foerster
“We take as given the idea of distinction and the idea of indication, and that it is not possible to make an indication without drawing a distinction. We take, therefore, the form of distinction for the form.”

G. Spencer-Brown
We take the Form
Of Distinction
For the Form.
“The laws of physics, the so-called ‘laws of nature’, can be described by us. The laws of brain functions - or ever more generally - the laws of biology, must be written in such a way that the writing of these laws can be deduced from them, i.e. that they have to write themselves.”

The Non-Locality of Impossibility
The Schematic, The Imaginary and The “Real”
DNA is a Self-Replicating EigenForm

\[ DNA = < W | C > \]

\[ < W | = \langle ...TTAGAATAGGTACGCG... | \]

\[ | C > = | ...AATCTTATCCATGCGC... > . \]

\[ < W | + E \rightarrow < W | C > = DNA \]

\[ E + | C > \rightarrow < W | C > = DNA \]

\[ < W | C > \rightarrow < W | + E + | C > = < W | C > < W | C > \]

Self Replication Schematic

DNA = <Watson|Crick>

E = Environment
Topological Replication

P

Expand

Cut/Divide

P, P
(K)not Sets

Crossing as Relationship

Self-Membership

Mutuality
Topological Russell (K)not Paradox

A belongs to A. \[ \leftrightarrow \] A does not belong to A.
The Borromean Rings
Fixed Point at Infinity

\[ F(X) = X \]

\[ F(J) = J. \]

\[ F(F(F(...))) = \]

\[ = J = \]

\[ \cdots \]
An EigenPuzzle

WHAT IS THE NEXT NUMBER?
John Conway’s Audioactive Sequence

1
11
21
1211
111221
312211
13112221
1113213211
31131211131221
13211311123113112211
11131221133112132113212221
31132221232112111312211312113211
31132221232112111312211312113211
1321133211121322112311311222113112211311221
A = 11131221131211132221…
B = 3113112221131112311332…
C = 132113213221133112132123…

A describes B, B describes C, and C describes A.
K = K{K K}K

The Framing of Imaginary Space.
It is generally thought that the miracle of being able to recognize an object arises from the fact that such an object consists of a "elementary particle" that has two modes of interaction. Two marks can interact to produce either one mark or nothing.
**Eigenforms “Exist”**

_Theorem._ Every recursion has a fixed point.

_Proof._ Let the recursion be given by an equation of the form

\[ X' = F(X) \]

where \( X' \) denotes the next value of \( X \) and \( F \) encapsulates the function or rule that brings the recursion to its next step. Here \( F \) and \( X \) can be any descriptors of actor and actant that are relevant to the recursion being studied. Now form

\[ J = F(F(F(F(\ldots)))) , \]

the infinite concatenation of \( F \) upon itself.

Then, we see that

\[ F(J) = F(F(F(F(F(\ldots)))))) = J. \]

Hence, \( J \) is a fixed point for the recursion and we have proved that every recursion has a fixed point. QED \( \square \)
Lorenz EigenForm

\[ DX = 10(Y - X) \]
\[ DY = X(28 - Z) - Y \]
\[ DZ = X*Y - 2.666*Z \]
The Golden Rectangle
Theorem. Every $F$ has a fixed point.

Proof. Let
\[ gx = F(xx). \]

Then
\[ gg = F(gg). \]

QED
The Duplicating Gremlin Creates The Re-entering Mark.

\[ \sqrt{A} = AA \]

\[ \begin{array}{c}
\sqrt{\begin{array}{c}
v \\swarrow \\searrow \n \end{array}} = \begin{array}{c}
\begin{array}{c}
v \\swarrow \\searrow \\
v \\swarrow \\searrow \\
\end{array}
\end{array} \\
\end{array} \]

Hence

\[ \begin{array}{c}
\sqrt{\begin{array}{c}
v \\swarrow \\searrow \\
v \\swarrow \\searrow \\
\end{array}} = \begin{array}{c}
\begin{array}{c}
v \\
\end{array}
\end{array} \\
\end{array} \]

\[ \begin{array}{c}
\begin{array}{c}
v \\
\end{array}
\end{array} = \begin{array}{c}
\begin{array}{c}
v \\
\end{array}
\end{array} \]

...
The Russell Gremlin

~ denotes “not”.

\[ Rx = \sim xx \]
\[ RR = \sim RR \]

This is the form of the Russell Paradox.

Ax means “x belongs to A”
The eigenform always exists, but it may be imaginary with respect to our present “Reality”.

If \( i = -1/i \), then
\[ i \cdot i = -1. \]

There is no real number whose square is minus one.

\[
\begin{array}{c|c|c|c}
 & i & -1 & -i \\
\hline
i & 1 & -1 & i \\
\end{array}
\]
Possibility and Necessity
The Light Cone

$X^2 + Y^2 + Z^2 + (i \, cT)^2 = 0$
\[ f(x) = a + \frac{b}{x} \]

\[
F = \begin{bmatrix} a + \frac{b}{x} \end{bmatrix}
\]

\[
f(F) = a + \frac{b}{F} = F
\]

\[
\begin{bmatrix} 1 + \frac{1}{x} \end{bmatrix}
\]

\[
= \frac{1 + \sqrt{5}}{2} \text{ “Irrational”}
\]

\[
\begin{bmatrix} -1 \end{bmatrix}
\]

\[
= i \text{ “Imaginary”}
\]
The Indicative Shift
After

Before

"HVF"

"#HVF"

After
M → #

# M → # M

Self Reference occurs at the Shift of the Name M of the Meta-Naming Operator #.

“ I am the Observed link Between myself And Observing myself.”
Paradox Generates Time

\[ J = \sim J \]

\[ J: \quad \ldots T F T F T F T F T F \ldots \]

\[ \sim J: \quad \ldots F T F T F T F T F T \ldots \]

\[ F \text{ OR } T = T \]

Therefore

\[ J \text{ OR } \sim J = T. \]

\[ \square = \ldots \square \quad \ldots \]

\[ \square = \ldots \square \quad \ldots \]

\[ \square | \square | = \square \]

...
Aren’t the two conditions
\[ \overline{\square} = \square \]
and
\[ \square \overline{\square} = \square \]
Logically Contradictory?

Flagg Resolution:
There is only one \( \square \).
All appearances of \( \square \) in a given Text
Must be altered together
or not at all.
The Flagg resolution allows the entry of eigenforms into our discourse without having to change the essential forms of reasoning.

This, at the cost of “textual non-locality”.

Is this a precursor to the non-locality of the quantum world?
The Universe is undoubtedly Indistinguishable from Itself.

\[ \square = \ldots \square \ldots \]

\[ \square = \square \quad \text{(all by itself)} \]

And yet, a Distinction Shall arise in Mutuality.

\[ \square = \ldots \square \ldots \]

\[ \square = \ldots \square \ldots \]

\[ \square \square \square = \square \]
Eigenforms such as
\[ J = \sim J \]
could well be called Imaginary values.

Let us not forget the primordial imaginary value, the act of (making) a distinction.
Only the Imaginary is Real.

The universe that we know
Comes into being
Through Imagination
Bringing forth
A world of distinctions that
we take to be
Real.
The art of distinction is inseparable from the art of joining.
In order for a universe to come into being the world must act to divide itself into one part that is seen and another part that sees.
Quality, Love
Reality, Imagination, and
Discrimination
are Inseparable.

What IS
is identical
In Form
with
What is not.

The Form
we take to exist
arises from
framing
Nothing.