# Consciousness, amplitudes, probability and a fundamental connection between Decisions, the Logical Space and Reality

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**Abstract**

For consciousness the author believes reality is a series of "slices" extending in all directions, forming a sum. Using a formula for frequency in terms of velocity and displacement it is possible to tie this with wave functions/ Eulers identity, such that decisions are made in the Logical Space (I) , decisions (D), Reality (P) , awareness ( C ) and Anti – information (A).

If we trust the heuristic that, for indistinguishable processes we add amplitudes, and for distinguishable processes – add probabilities, further results may follow.

Introduction: Here it is presented that a fundamental structure between the logical Space (I), reality (P) and decisions (D) etc is Eulers identity:

$$e^{i\Theta} = \cos(\Theta) + isin(\Theta)$$

Where:

$$i \in \{I, D \ldots.\}$$

From previous papers we have:

$$true = \infty$$

$$true^{-1} = \infty$$

$$False = \infty$$

Etc.

So for:

$$e^{i\omega} + e^{-i\omega} \rightarrow \infty$$

The resulting binary values follow ( see previous paper).

Using the wave function:

$$\phi = e^{-\frac{iEt}{h}}$$

In the notation we can say:

$$E \rightarrow -E$$

And define:

$$i = \pm 1(i)$$

To produce the complex conjugate:

$$\phi^*$$

This will be explained later. Now consciousness and how it relates to quantum gravity is that the mind sees only lengths and angles. Thus reality can be broken into "slices" which extend in all directions.

Results: Analysing the structure of the equation:

$$\phi = e^{-\frac{iEt}{h}}$$

We can produce conjugates by choosing positive or negative E or t. A change in sign of t denotes a negative period. When applied to consciousness – consciousness itself may manipulate time. That is:

$$E \rightarrow t \rightarrow -t \rightarrow -E$$

Now a decision can be made by:

$$\phi^*\phi = \mu_i$$

And we must analyse normalisation. So for infinite values:

$$\phi^*\phi \rightarrow \quad e^{-\infty}\, e^{\infty} = \mu_i$$

Now for a further analysis ( the author is slightly unsure):

$$\frac{\partial}{\partial t} e^{-\frac{iEt}{h}} = -\frac{iE}{h} e^{-\frac{iEt}{h}}$$

And similarly for the conjugate. Thus we can write:

$$\Delta\phi = \frac{iE1}{h} e^{\frac{iE1t1}{h}} - \frac{iE2}{h} e\left(-\frac{iE_2 t_2}{h}\right) = \mu_i$$

For the time rate of change.

Now :

$$i \in I \; and \;\; I \rightarrow P^{-1} \rightarrow P$$

We define:

$$P = e^{\frac{iEt}{h}}$$

And:

$$P^{-1} = e^{-\frac{iET}{h}}$$

And these inverted. Similarly for:

$$I = \; e^{-\frac{iEt}{h}} \; and \; I^{-1} = e^{\frac{iEt}{h}}$$

And inverses.

Now it is proposed that the fundamental connection between I, D, P etc is Eulers identity:

$$e^{i\theta} = \cos(\theta) + isin(\theta)$$

Such that the real term is that of the cos term. The imaginary term is involved in I (the logical space). So for the processing of information in terms of n and 1/n bits is:

$$Info \rightarrow \ A_n \cos(n\theta) \rightarrow \ A_m \cos\left(\frac{\theta}{n}\right)$$

Interestingly as :

$$n \rightarrow \infty$$

And as:

$$n \rightarrow 0$$

The cos term converges(??)

That is:

$$A_m \cos\left(\frac{\theta}{n}\right) = A_m(1) \ \ for \ n \rightarrow \infty$$

A fundamental duality in processing. Also

$$\cos(n2\pi) = 1 \ for \ n = 0,1,2 \ldots$$

So the decision term:

$$\mu_i = \cos\left(-\frac{Et}{h}\right) - i \ \sin\left(-\frac{Et}{h}\right)$$

Now:

$$\tan(\theta) = \frac{\cos(\theta)}{\sin(\theta)} = \frac{dy}{dx}$$

So for a zero (or otherwise calculated decision term), when:

$$\cos(\phi) = i \sin(\phi)$$

The terms are subtracted and equal zero.; Thus we have ;

$$\mu_i = x_1 \cos\big(p(\phi)\big) \pm \ x_2 isin\big(q(\phi)\big)$$

Which can result in 0 or 1, where the real part may equal 1.

So for the heuristic:

$$rule(curve) = function$$

Or

$$operator(problem) = output$$

We can write:

$$\frac{1}{\sin(\theta)}\cos(\theta) = \tan(\theta) = \frac{dy}{dx}$$

Where:

$$\frac{\partial}{\boldsymbol{\partial}\theta}(e^{i\theta} + e^{-i\theta}) = 0$$

Now to relate this to consciousness, essentially awareness( consciousness) solves problems. Thus the description of rules curves, operators etc. Reality it seems as it is "seen" by the mind can be broken into "slices". Thus all we need is angles and lengths. These can extend in all directions and can be "summed" by various processes in the brain. So for wavelengths and frequencies:

$$v = xf \;\; or \;\; x = \frac{v}{f} \;\; let\; x = r\theta' \; so \frac{x}{r} = \frac{v}{fr} and \;\; \theta' = \frac{v}{fr}$$

So we can write:

$$\frac{\boldsymbol{\partial}}{\boldsymbol{\partial}\theta'} \;\; \left(\boldsymbol{e}^{\boldsymbol{i}\theta'} + \boldsymbol{e}^{-\boldsymbol{i}\theta'}\right) = \mathbf{0}\; \boldsymbol{or}\; \mu_{\boldsymbol{i}}$$

$$\frac{\boldsymbol{\partial}}{\boldsymbol{\partial x}}\left(\boldsymbol{e}^{\frac{\boldsymbol{ix}}{\boldsymbol{r}}} + \;\; \boldsymbol{e}^{-\frac{\boldsymbol{ix}}{\boldsymbol{r}}}\right) = \mathbf{0}\; \boldsymbol{or}\; \mu_{\boldsymbol{i}}$$

Now Eulers identity is equal to 1 for multiples of 2 pi.(???) that is:

$\sin(n2\pi) = 0 \;\; for\; n = 0,1,2..\; and \cos(n2\pi) = 1 \;\; for\; n = 0,1,2..$ ??

Using:

$$x = r\theta \;\; and \;\; x = \frac{v}{f}$$

We can show that perhaps information is actually:

$$\epsilon\, [0,1]$$

Or patterns.

Thus for "slices":

$$\theta_i \; where \;\; i \rightarrow \;\; i, j, k, l, ....$$

And for different lengths:

$$x_k$$

We can examine the possibility that consciousness "sums" these.

NB defining:

$$\frac{i}{r} \to i, \frac{i}{P} \to I \, , \frac{i}{I} \to P$$

And such inverses logic can be connected with reality P.

NB, Perhaps we can alternatively define entropy as a sinusoidal phenomena. That is for n bits:

$$dS = \; A_k \cos(\Omega = A_k \cos(n))$$

$$dS = A_l \cos\left(\frac{1}{\Omega}\right) = A_l \cos\left(\frac{1}{n}\right)$$

Where rescaling s.t:

$$\frac{1}{n} \to 2\pi n'$$

Nb it may be very useful to look at cos squared as a way of producing 0 or 1.

Thus to fit the mind to quantum gravity:

$$\Theta_i \to \frac{x_i}{r_i}$$

Which can be summed and used in:

$$\frac{\partial}{\boldsymbol{\partial}\Theta} e^{i\Theta} \pm \frac{\boldsymbol{\partial}}{\boldsymbol{\partial}\Theta} \boldsymbol{e}^{-\boldsymbol{i}\Theta'} = \mu_{\boldsymbol{i}}$$

The decision term.

References:

Griffiths,. Intro to quantum mechanics. (Cover removed unable to

Produce more details.)